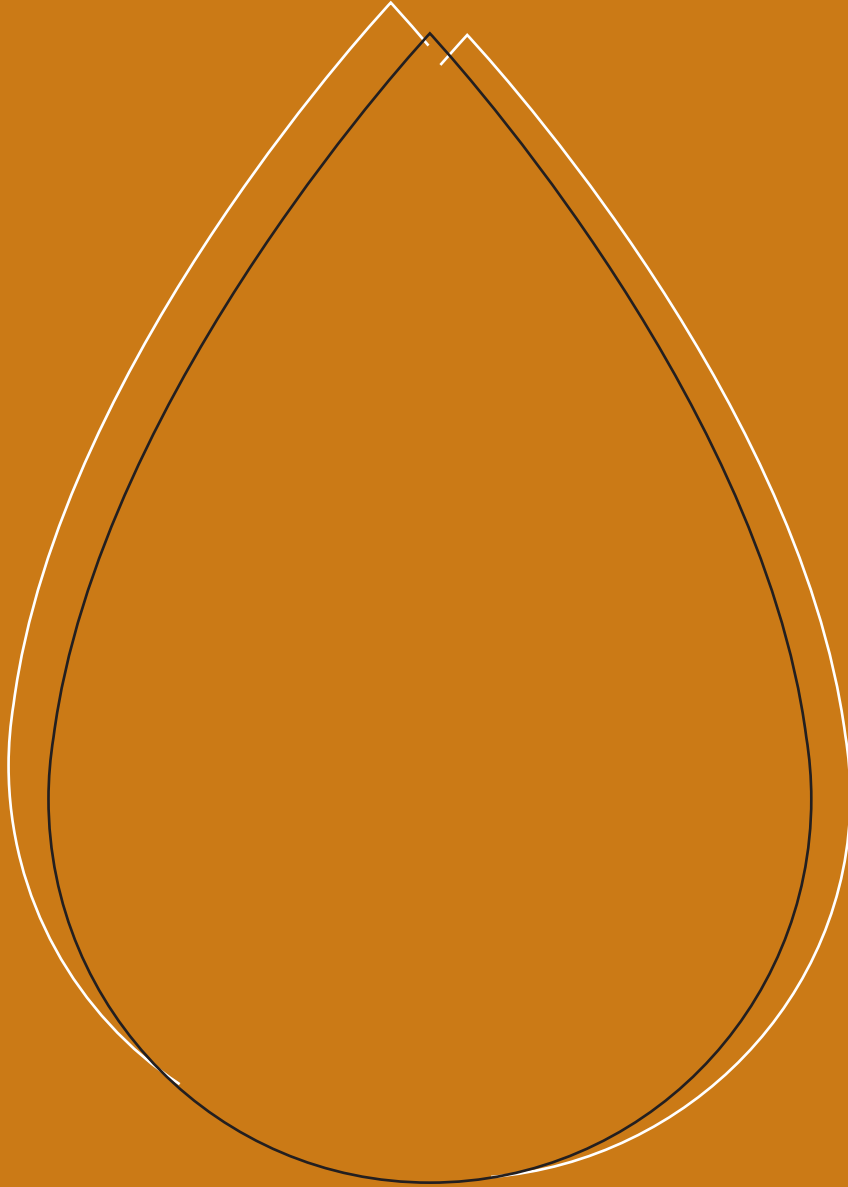


2009



Oil, Natural Gas and Biofuels Statistical Yearbook

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Petroleum, Natural Gas and Biofuels





**Oil, Natural Gas and Biofuels Statistical Yearbook  
2009**

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Edison Lobão

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# **Oil, Natural Gas and Biofuels Statistical Yearbook 2009**



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# General Director's introduction

The year of 2008 was characterized by an anomalous behaviour of oil prices which, after reaching a US\$ 150/bbl peak in July, have experienced a continuous fall. By the end of the year, oil prices have collapsed to levels below US\$ 40/bbl, mainly because of the worsening of the financial crisis which has been threatening the world economy since 2007. Global landscape saw a strong slowdown of oil demand growth due to the contraction of OECD economies and, to a lesser extent, of the emerging economies.

Despite that pessimistic scenario, oil, natural gas and biofuels Brazilian industries had a remarkable performance in 2008. In upstream segments, among the discoveries announced in 2008, very promising lara and Jupiter fields point out to a future in which the country will be rewarded by the exploratory effort performed in the last years, which was induced by successful Bidding Rounds organized by ANP.

In midstream, following the trend already observed in 2007, the Yearbook data show that installed capacity of biodiesel plants have increased by 34.3%, as well as its production, which has raised 190.2%. It should be noticed that, from Jan 1<sup>st</sup>, 2008, 2% mixture of biodiesel in diesel oil sold in Brazil has become mandatory. In July 1<sup>st</sup> of the same year, that content was raised to 3%. Those numbers confirm the success of the Biodiesel Use and Production Brazilian Program which has counted with ANP participation from the beginning, by authorizing the construction and operation of new plants, as well as promoting bidding for product sale.

Concerning with downstream activities, the present Yearbook highlights record fuel sales in 2008, with increased consumption of almost all main fuels. Particularly, ethanol sales have grown up by 41.9%, which strengths Brazilian's position on renewable energy use. Fuel market performance could have been even better, if strong economic slowdown of Brazilian economy in fourth quarter would not have been occurred as a consequence of global economy crisis.

**Haroldo Borges Rodrigues Lima**  
**General Director**





# Summary

Contents .....	08
List of Tables .....	09
List of Frames .....	09
List of Figures .....	10
List of Maps .....	10
General Notes .....	11
Conventions.....	13
Section 1. The Brazilian oil and natural gas industry.....	15
Section 2. Biofuels .....	55
Conversion Factors .....	64
Glossary.....	65
List of Sources.....	67

# Contents

## Section 1 - The Brazilian oil and natural gas industry

### *Exploration and Production*

1.1 Blocks and Fields under Concession .....	16
1.2 Reserves .....	27
1.3 Production .....	31

### *Refining and Processing*

1.4 Oil Refining .....	34
1.5 Production of Oil Products .....	38
1.6 Natural Gas Processing .....	39

### *Shale Industrialization*

1.7 Shale Industrialization .....	40
-----------------------------------	----

### *Transportation of Oil, its Products and Natural Gas*

1.8 Terminals .....	41
1.9 Pipelines .....	43

### *Commercialization of Oil, its Products and Natural Gas*

1.10. Commercialization of Oil, its Products and Natural Gas .....	45
1.11. Foreign Trade .....	48

## Section 2 - Biofuels

2.1. Ethanol.....	56
2.2. Biodiesel .....	62

# List of Tables

## Section 1 - The Brazilian oil and natural gas industry

1.1 – Proved oil reserves, per location (onshore and offshore), by State – 1999-2008 .....	27
1.2 – Proved natural gas reserves, per location (onshore and offshore), by State – 1999-2008 .....	29
1.3 – Oil production, per location (onshore and offshore), by State – 1999-2008 .....	31
1.4 – NGL production, by State – 1999-2008 .....	32
1.5 – Natural gas production, per location (onshore and offshore), by State – 1999-2008 .....	32
1.6 – Refining capacity, by refinery – 1999-2008 .....	34
1.7 – Volume of processed oil, per origin (domestic and imported), by refinery – 2008 .....	34
1.8 – Volume of processed oil, per origin (domestic and imported) and by country – 1999-2008 .....	36
1.9 – Production of energy and non-energy oil products – 1999-2008 .....	38
1.10 – Production of dry natural gas, LPG, C <sub>5</sub> <sup>+</sup> and ethane in Natural Gas Processing Plants (NGPPs) .....	39
1.11 – Volume of processed shale and production of shale products – 1999-2008 .....	40
1.12 – Storage capacity of oil, oil products and ethanol, by terminal, on 12/31/2008 .....	41
1.13 – Domestic sales of main oil products, per distributor – 1999-2008 .....	45
1.14 – Brazilian natural gas balance – 1999-2008 .....	46
1.15 – Oil imports, by region and country of origin – 1999-2008 .....	48
1.16 – Oil exports, by region and country of destination – 1999-2008 .....	49
1.17 – Imports of oil products, by region and country of origin – 2008 .....	50
1.18 – Imports of energy and non-energy oil products – 1999-2008 .....	50
1.19 – Exports of energy and non-energy oil products, by region and country of destination – 2008 .....	51
1.20 – Exports of energy and non-energy oil products – 1999-2008 .....	52
1.21 – Natural gas imports, by country of origin – 1999-2008 .....	53

## Section 2 - Biofuels

2.1 – Production of anhydrous and hydrated ethanol, by region and by state – 1999-2008 .....	56
2.2 – Production of hydrated ethanol, by Brazilian region and state – 1999-2008 .....	57
2.3 – Ethanol exports, by region and by country of destination – 1999-2008 .....	58
2.4 – Hydrated ethanol sales, by region and by State, at distribution level – 1999-2008 .....	60
2.5 – Nominal capacity and production of biodiesel – B100, by plant – 2008 .....	62

# List of Frames

## Section 1 - The Brazilian oil and natural gas industry

1.1 – Blocks in the exploration phase on 12/31/2008 .....	16
1.2 – Fields under development on 12/31/2008 .....	22
1.3 – Fields in the production phase on 12/31/2008 .....	23

# List of Figures

## Section 1 - The Brazilian oil and natural gas industry

1.1 – Proved oil reserves, by location (onshore and offshore) – 1999-2008 .....	28
1.2 – Proved natural gas reserves, by location (onshore and offshore) – 1999-2008 .....	30
1.3 – Oil production, by location (onshore and offshore) – 1999-2008 .....	31
1.4 – Natural gas production, per location (onshore and offshore) – 1999-2008 .....	33
1.5 – Volume of refined oil and refining capacity, per refinery - 2008 .....	35
1.6 – Volume of processed oil, per origin (domestic and imported) - 1999-2008 .....	37
1.7 – Production of energy and non-energy oil products .....	38
1.8 – Volume of natural gas processed and processing capacity, per NGPP – 2008 .....	39
1.9 – Domestic sales of main oil products, per distributor – 1999-2008 .....	45
1.10 – Natural gas domestic sales, at production level – 1999-2008 .....	46
1.11 – Brazilian natural gas balance – 1999-2008 .....	47
1.12 – Foreign dependence on oil and oil products – 1999-2008 .....	53

## Section 2 - Biofuels

2.1 – Production of anhydrous and hydrated ethanol - 1999-2008 .....	59
2.2 – Hydrated ethanol sales, by region, at distribution level – 1999-2008 .....	61

# List of Maps

## Section 1 - The Brazilian oil and natural gas industry

1.1 – Infrastructure for transportation of oil and its products – 2008 .....	43
1.2 – Infrastructure for natural gas production and transportation – 2008 .....	44

## Section 2 - Biofuels

2.1 – Infrastructure for biodiesel production – 2008 .....	63
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# General Notes

## **Rounding off**

Numeric data in Tables were rounded up. Therefore, any differences between the resulting summation of items and totals amounts may be accounted for the rounding off criterion.

## **Geographic and Geopolitical**

Geographic groupings used in this book were adopted with merely statistic aims. Doing so, they imply no judgement based on political or economic criteria.

**South and Central America:** Caribbean (including Puerto Rico), Central America, and South America.

**Dutch Antilles:** comprise the Bonaire Islands, Curaçao, Saint Eustatius and South Saint Martin.

**Asia-Pacific:** comprises Brunei, Cambodia, China, Hong Kong (region under China's special administration), Indonesia, Japan, Laos Popular Democratic Republic, Malaysia, Mongolia, Korea Popular Democratic Republic, Singapore, The Philippines, South Asia (Afghanistan, Bangladesh, India, Myanmar, Nepal, Pakistan, and Sri Lanka), Republic of Korea, Taiwan, Thailand, Vietnam, Australia, New Zealand, Papua New Guinea, and other Oceania countries.

**United Arab Emirates:** comprise Abu Dhabi, Dubai, Ras-al-Khaimah and Sharjah.

**Opec:** Organization of Petroleum Exporting Countries. Multilateral organization founded in 1960, which aimed to coordinate petroleum policy of member-countries, besides providing them with technical and economic support. Includes Angola, Saudi Arabia, Algeria, Qatar, Kuwait, United Arab Emirates, Ecuador, Indonesia, Iran, Iraq, Libya, Nigeria, and Venezuela.

**Middle East:** comprises Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, and Yemen.

**United Kingdom:** comprises Great Britain (England, Scotland, Wales), Northern Ireland, Isle of Man, Channel Islands, Orkney Islands, and Shetland Islands.

**Republic of Korea:** former South Korea.

**Democratic Republic of the Congo:** former Zaire.

**People's Republic of the Congo:** Congo (Brazzaville).

**Democratic People's Republic of Korea:** former North Korea.

### **Natural Gas and Shale Gas**

Volumes of gas shown in this book refer to the product at 20°C and 1 atm pressure.

### **Brazilian Oil and Natural Gas Reserves**

Oil and Natural Gas data series are subject to changes. Current values are available on ANP site ([www.anp.gov.br/petro/reservas.asp](http://www.anp.gov.br/petro/reservas.asp))

### **Sales of Oil Products and Hydrated Ethanol**

Up to 2006, sales of oil products and hydrated ethanol were based on enterprise mandatory data declaration to ANP, by means of Product Control Demonstrative – DCP. DCP includes enterprises sales and own consumption. Since 2007, that information includes only enterprises sales, as per Ordinance (Resolução) nº 17/2004. Data were last updated in April, 2009.

### **Foreign Trade**

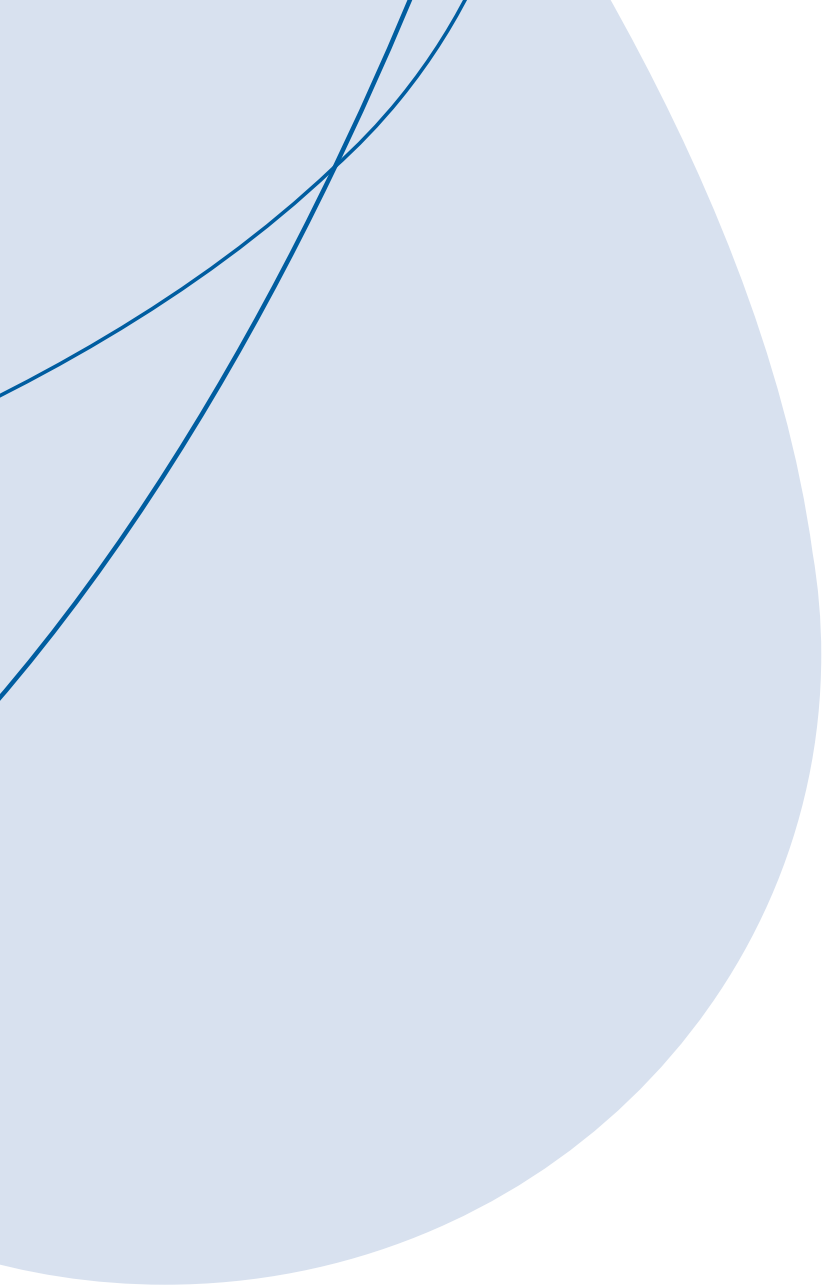
Data on imports and exports of oil and oil products were extracted from Secex data system. Those data are subject to changes without any previous warning and, therefore, may diverge from data series already published in former editions of this book.

# Conventions

## Symbols

- : numeric datum equal to zero not resulting from rounding off.
- .. : numeric datum not applicable.
- ... : numeric datum not available.
- 0 : numeric datum equal to zero resulting from rounding off an originally positive numeric data point.
- (0) : numeric datum equal to zero resulting from rounding off an originally negative numeric data point.





SECTION 1

# THE BRAZILIAN OIL AND NATURAL GAS INDUSTRY



## EXPLORATION AND PRODUCTION

## 1.1 Blocks and fields under concession

Frame 1.1 - Blocks in the exploration phase on 12/31/2008 (continue)

Blocks in the exploration phase on 12/31/2008					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Bidding rounds	Concessionaries (%)
<b>Alagoas</b>	Onshore	BT-SEAL-2	BT-SEAL-2	Round 2	Petrobras <sup>1</sup> (100)
<b>Almada</b>	Offshore	BM-CAL-5	BM-CAL-5	Round 3	Petrobras <sup>1</sup> (45)/ Queiroz Galvão (18.34)/ El Paso (18.33)/Rio das Contas (18.33)
	Offshore	BM-CAL-6	BM-CAL-6	Round 3	Petrobras <sup>1</sup> (45)/ Queiroz Galvão (18.34)/ El Paso (18.33)/Rio das Contas (18.33)
<b>Barreirinhas</b>	Offshore	BM-BAR-1	BM-BAR-1	Round 3	Petrobras <sup>1</sup> (75)/ONGC Campos (25)
	Offshore	BM-BAR-3	BM-BAR-3	Round 4	Devon Energy <sup>1</sup> (45)/SK Brasil (30)/Petrobras (25)
	Offshore	BM-BAR-4	BM-BAR-355	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-BAR-4	BM-BAR-376	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-BAR-4	BM-BAR-377	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-BAR-4	BM-BAR-378	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-BAR-4	BM-BAR-399	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-BAR-5	BM-BAR-175	Round 6	Petrobras <sup>1</sup> (100)
<b>Camamu</b>	Offshore	BCAM-40	BCAM-40	Round 0	Petrobras <sup>1</sup> (45)/ Manati (35)/Rio das Contas (10)/Brasoil Manati (10)
	Offshore	BM-CAL-7	CAL-M-120	Round 6	Petrobras <sup>1</sup> (60)/Statoil Brasil (40)
	Offshore	BM-CAL-7	CAL-M-186	Round 6	Petrobras <sup>1</sup> (60)/Statoil Brasil (40)
	Offshore	BM-CAL-8	CAL-M-122	Round 6	Statoil Brasil <sup>1</sup> (100)
	Offshore	BM-CAL-9	CAL-M-188	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-CAL-10	CAL-M-3	Round 6	Statoil Brasil <sup>1</sup> (60)/Petrobras(40)
	Offshore	BM-CAL-10	CAL-M-58	Round 6	Statoil Brasil <sup>1</sup> (60)/Petrobras(40)
	Offshore	BM-CAL-10	CAL-M-60	Round 6	Statoil Brasil <sup>1</sup> (60)/Petrobras(40)
	Offshore	BM-CAL-11	CAL-M-248	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-CAL-12	CAL-M-312	Round 6	Petrobras <sup>1</sup> (60)/El Paso (20)/Queiroz Galvão (20)
	Offshore	BM-CAL-12	CAL-M-372	Round 6	Petrobras <sup>1</sup> (60)/El Paso (20)/Queiroz Galvão (20)
	Offshore	BM-CAL-13	CAL-M-314	Round 7	Devon <sup>1</sup> (100)
	Offshore	BM-CAL-14	CAL-M-374	Round 7	Eni Oil <sup>1</sup> (100)
	<b>Campos</b>	Offshore	BM-C-14	BM-C-14	Round 3
Offshore		BM-C-25	BM-C-25	Round 4	Petrobras <sup>1</sup> (57)/ Shell (43)
Offshore		BM-C-26	C-M-78	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-26	C-M-98	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-27	C-M-119	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-27	C-M-120	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-27	C-M-122	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-27	C-M-145	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-27	C-M-146	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-27	C-M-95	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-27	C-M-96	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-28	C-M-299	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-28	C-M-333	Round 5	Petrobras <sup>1</sup> (100)
Offshore		BM-C-29	C-M-202	Round 6	Anadarko <sup>1</sup> (100)
Offshore		BM-C-30	C-M-101	Round 6	Anadarko <sup>1</sup> (30)/ EnCana (25)/Devon (25)/SK Brasil (20)
Offshore		BM-C-31	C-M-103	Round 6	Petrobras <sup>1</sup> (60)/Shell (20)/Inpex (20)
Offshore		BM-C-31	C-M-151	Round 6	Petrobras <sup>1</sup> (60)/Shell (20)/Inpex (20)
Offshore		BM-C-32	C-M-61	Round 6	Devon <sup>1</sup> (40)/ Anadarko (33)/SK Brasil(27)
Offshore		BM-C-33	C-M-539	Round 7	Repsol YPF <sup>1</sup> (50)/Statoil (50)
Offshore		BM-C-34	C-M-471	Round 7	Devon <sup>1</sup> (50)/Petrobras (50)
Offshore		BM-C-34	C-M-473	Round 7	Devon <sup>1</sup> (50)/Petrobras (50)
Offshore		BM-C-35	C-M-535	Round 7	Petrobras <sup>1</sup> (65)/Devon (35)
Offshore		BM-C-36	C-M-401	Round 7	Petrobras <sup>1</sup> (100)
Offshore		BM-C-36	C-M-403	Round 7	Petrobras <sup>1</sup> (100)
Offshore		BM-C-37	C-M-560	Round 9	Maersk <sup>1</sup> (50)/OGX(50)
Offshore		BM-C-38	C-M-591	Round 9	Maersk <sup>1</sup> (50)/OGX(50)
Offshore		BM-C-39	C-M-466	Round 9	OGX <sup>1</sup> (100)
Offshore		BM-C-40	C-M-499	Round 9	OGX <sup>1</sup> (100)
Offshore		BM-C-41	C-M-592	Round 9	OGX <sup>1</sup> (100)
Offshore		BM-C-42	C-M-620	Round 9	OGX <sup>1</sup> (100)
Offshore		BM-C-43	C-M-621	Round 9	OGX <sup>1</sup> (100)
Offshore		BM-C-44	C-M-593	Round 9	Petrobras <sup>1</sup> (47,50)/ Petrogal Brasil (37,50)/ Ecopetrol Óleo e Gás (15)
Offshore		BM-C-45	C-M-498	Round 9	Starfish <sup>1</sup> (70)/Sonangol P&P (30)
Offshore	BM-C-46	C-M-462	Round 9	Starfish <sup>1</sup> (70)/Sonangol P&P (30)	
Offshore	BM-C-47	C-M-529	Round 9	Anadarko <sup>1</sup> (50)/Hydro Brasil (50)	
Offshore	BM-C-47	C-M-530	Round 9	Anadarko <sup>1</sup> (50)/Hydro Brasil (50)	
<b>Ceará</b>	Offshore	BM-CE-1	BM-CE-1	Round 3	Petrobras <sup>1</sup> (100)
	Offshore	BM-CE-2	BM-CE-2	Round 3	Petrobras <sup>1</sup> (100)
<b>Espirito Santo</b>	Offshore	BM-ES-5	BM-ES-5	Round 3	Petrobras <sup>1</sup> (65)/El Paso (35)
	Onshore/Offshore	BM-ES-20	BM-ES-20	Round 4	Newfield <sup>1</sup> (100)
	Onshore	BT-ES-14	BT-ES-14	Round 4	Petrobras <sup>1</sup> (50)/Partex (50)
	Onshore	BT-ES-15	BT-ES-15	Round 4	Petrobras <sup>1</sup> (100)

Frame 1.1 - Blocks in the exploration phase on 12/31/2008 (continue)

Blocks in the exploration phase on 12/31/2008					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Bidding rounds	Concessionaries (%)
<b>Espirito Santo</b>	Offshore	BM-ES-21	ES-M-414	Round 6	Petrobras <sup>1</sup> (80)/Repsol YPF (20)
	Offshore	BM-ES-22	ES-M-466	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-ES-22	ES-M-468	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-ES-22	ES-M-523	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-ES-22	ES-M-527	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-ES-23	ES-M-525	Round 6	Petrobras <sup>1</sup> (65)/Shell (35)
	Offshore	BM-ES-24	ES-M-588	Round 6	Petrobras <sup>1</sup> (40)/EnCana (30)/Anadarko (30)
	Offshore	BM-ES-24	ES-M-661	Round 6	Petrobras <sup>1</sup> (40)/EnCana (30)/Anadarko (30)
	Offshore	BM-ES-24	ES-M-663	Round 6	Petrobras <sup>1</sup> (40)/EnCana (30)/Anadarko (30)
	Offshore	BM-ES-25	ES-M-590	Round 6	Petrobras <sup>1</sup> (60)/ Anadarko (40)
	Onshore	BT-ES-25	ES-T-364	Round 6	Petrobras <sup>1</sup> (100)
	Onshore	BT-ES-25	ES-T-373	Round 6	Petrobras <sup>1</sup> (100)
	Onshore	BT-ES-25	ES-T-381	Round 6	Petrobras <sup>1</sup> (100)
	Onshore	BT-ES-25	ES-T-390	Round 6	Petrobras <sup>1</sup> (100)
	Onshore	BT-ES-26	BT-ES-26	Round 6	Petrosynergy <sup>1</sup> (100)
	Offshore	BM-ES-26	ES-M-413	Round 7	Petrobras <sup>1</sup> (100)
	Offshore	BM-ES-27	ES-M-411	Round 7	Petrobras <sup>1</sup> (65)/ Shell (17.50)/CVRD (17.50)
	Offshore	BM-ES-27	ES-M-436	Round 7	Petrobras <sup>1</sup> (65)/ Shell (17.50)/CVRD (17.50)
	Offshore	BM-ES-27	ES-M-437	Round 7	Petrobras <sup>1</sup> (65)/ Shell (17.50)/CVRD (17.50)
	Offshore	BM-ES-28	ES-M-438	Round 7	Shell <sup>1</sup> (82.50)/CVRD (17.50)
	Offshore	BM-ES-29	ES-M-737	Round 7	Repsol YPF <sup>1</sup> (100)
	Offshore	BM-ES-30	ES-M-665	Round 7	Amerada Hess <sup>1</sup> (60)/ Repsol YPF (40)
	Offshore	BM-ES-31	ES-M-592	Round 7	Petrobras <sup>1</sup> (80)/Petrogal Brasil (20)
	Offshore	BM-ES-32	ES-M-594	Round 7	Petrobras <sup>1</sup> (60)/Statoil Brasil (40)
	Onshore	BT-ES-30	ES-T-363	Round 7	Koch Petróleo <sup>1</sup> (100)
	Onshore	BT-ES-32	ES-T-372	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-ES-32	ES-T-383	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-ES-32	ES-T-409	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-ES-32	ES-T-418	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-ES-33	ES-T-466	Round 7	Vipetro <sup>1</sup> (100)
	Onshore	BT-ES-34	ES-T-527	Round 7	Petrobras <sup>1</sup> (50)/Partex Brasil (50)
	Onshore	BT-ES-35	ES-T-454	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-ES-36	ES-T-442	Round 7	Petrosynergy <sup>1</sup> (100)
	Offshore	BM-ES-37	ES-M-416	Round 9	Perenco Brasil <sup>1</sup> (50)/OGX (50)
	Offshore	BM-ES-38	ES-M-418	Round 9	Perenco Brasil <sup>1</sup> (50)/OGX (50)
	Offshore	BM-ES-39	ES-M-472	Round 9	Perenco Brasil <sup>1</sup> (50)/OGX (50)
	Offshore	BM-ES-40	ES-M-529	Round 9	Perenco Brasil <sup>1</sup> (50)/OGX (50)
	Offshore	BM-ES-41	ES-M-531	Round 9	Perenco Brasil <sup>1</sup> (50)/OGX (50)
	Offshore	BM-ES-42	ES-M-470	Round 9	ONGC Campos <sup>1</sup> (100)
	Onshore	BT-ES-37	ES-T-410	Round 9	Starfish <sup>1</sup> (50)/Petrobras (50)
	Onshore	BT-ES-38	ES-T-391	Round 9	Vipetro <sup>1</sup> (100)
	Onshore	BT-ES-38	ES-T-392	Round 9	Vipetro <sup>1</sup> (100)
Onshore	BT-ES-39	ES-T-318	Round 9	Braz Alta Brasil <sup>1</sup> (100)	
Onshore	BT-ES-40	ES-T-362	Round 9	Braz Alta Brasil <sup>1</sup> (100)	
Onshore	BT-ES-40	ES-T-380	Round 9	Braz Alta Brasil <sup>1</sup> (100)	
Onshore	BT-ES-41	ES-T-400	Round 9	Lábrea <sup>1</sup> (100)	
Onshore	BT-ES-42	ES-T-401	Round 9	Starfish <sup>1</sup> (50)/Petrobras (50)	
<b>Foz do Amazonas</b>	Offshore	BM-FZA-4	FZA-M-217	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-FZA-4	FZA-M-252	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-FZA-6	FZA-M-533	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-FZA-6	FZA-M-534	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-FZA-6	FZA-M-569	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-FZA-6	FZA-M-570	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-FZA-6	FZA-M-571	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-FZA-6	FZA-M-605	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-FZA-6	FZA-M-606	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-FZA-6	FZA-M-607	Round 6	Petrobras <sup>1</sup> (100)
Offshore	BM-FZA-6	FZA-M-608	Round 6	Petrobras <sup>1</sup> (100)	
<b>Jequitinhonha</b>	Offshore	BM-J-1	BM-J-1	Round 3	Petrobras <sup>1</sup> (100)
	Offshore	BM-J-2	BM-J-2	Round 4	Queiroz Galvão <sup>1</sup> (100)
	Offshore	BM-J-3	BM-J-3	Round 4	Petrobras <sup>1</sup> (60)/ Statoil (40)
	Offshore	BM-J-4	J-M-115	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-J-4	J-M-165	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-J-4	J-M-3	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-J-4	J-M-5	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-J-4	J-M-63	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-J-5	J-M-59	Round 6	Petrobras <sup>1</sup> (100)
Offshore	BM-J-5	J-M-61	Round 6	Petrobras <sup>1</sup> (100)	
<b>Mucuri</b>	Onshore	BT-ES-24	ES-T-47	Round 6	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)
	Onshore	BT-ES-24	ES-T-67	Round 6	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)
	Onshore	BT-ES-24	ES-T-68	Round 6	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)
	Onshore	BT-ES-24	ES-T-88	Round 6	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)
	Onshore	BT-ES-28	ES-T-107	Round 7	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)
	Onshore	BT-ES-28	ES-T-108	Round 7	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)
	Onshore	BT-ES-28	ES-T-125	Round 7	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)
	Onshore	BT-ES-29	ES-T-227	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)

Frame 1.1 - Blocks in the exploration phase on 12/31/2008 (continue)

Blocks in the exploration phase on 12/31/2008						
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Bidding rounds	Concessionaries (%)	
<b>Pará - Maranhão</b>	Offshore	BM-PAMA-3	BM-PAMA-3	Round 3	Petrobras <sup>1</sup> (100)	
	Offshore	BM-PAMA-8	PAMA-M-135	Round 6	Petrobras <sup>1</sup> (100)	
	Offshore	BM-PAMA-8	PAMA-M-192	Round 6	Petrobras <sup>1</sup> (100)	
	Offshore	BM-PAMA-8	PAMA-M-194	Round 6	Petrobras <sup>1</sup> (100)	
	Offshore	BM-PAMA-9	PAMA-M-187	Round 9	Petrobras <sup>1</sup> (40)/ CVRD (30)/ Ecopetrol Óleo e Gás (30)	
	Offshore	BM-PAMA-10	PAMA-M-188	Round 9	Petrobras <sup>1</sup> (40)/ CVRD (30)/ Ecopetrol Óleo e Gás (30)	
	Offshore	BM-PAMA-11	PAMA-M-222	Round 9	Petrobras <sup>1</sup> (40)/ CVRD (30)/ Ecopetrol Óleo e Gás (30)	
	Offshore	BM-PAMA-12	PAMA-M-223	Round 9	Petrobras <sup>1</sup> (40)/ CVRD (30)/ Ecopetrol Óleo e Gás (30)	
	Offshore	BM-PAMA-13	PAMA-M-407	Round 9	OGX <sup>1</sup> (100)	
	Offshore	BM-PAMA-14	PAMA-M-408	Round 9	OGX <sup>1</sup> (100)	
	Offshore	BM-PAMA-15	PAMA-M-443	Round 9	OGX <sup>1</sup> (100)	
	Offshore	BM-PAMA-16	PAMA-M-591	Round 9	OGX <sup>1</sup> (100)	
	Offshore	BM-PAMA-17	PAMA-M-624	Round 9	OGX <sup>1</sup> (100)	
	<b>Parnaíba</b>	Onshore	BT-PN-1	PN-T-102	Round 9	Comp <sup>1</sup> (33.34)/Orteng (33.33)/Delp (33.33)
		Onshore	BT-PN-2	PN-T-66	Round 9	Devon <sup>1</sup> (40)/ Petrobras (40)/ CVRD (20)
		Onshore	BT-PN-3	PN-T-86	Round 9	Petrobras <sup>1</sup> (40)/ Devon (40)/ CVRD (20)
		Onshore	BT-PN-4	PN-T-48	Round 9	Petra Energia <sup>1</sup> (100)
Onshore		BT-PN-5	PN-T-49	Round 9	Petra Energia <sup>1</sup> (100)	
Onshore		BT-PN-6	PN-T-50	Round 9	Petra Energia <sup>1</sup> (100)	
Onshore		BT-PN-7	PN-T-67	Round 9	Petra Energia <sup>1</sup> (100)	
Onshore		BT-PN-8	PN-T-68	Round 9	Petra Energia <sup>1</sup> (100)	
Onshore		BT-PN-9	PN-T-84	Round 9	Petra Energia <sup>1</sup> (100)	
Onshore		BT-PN-10	PN-T-85	Round 9	Petra Energia <sup>1</sup> (100)	
<b>Pelotas</b>	Offshore	BM-P-2	P-M-1267	Round 6	Petrobras <sup>1</sup> (100)	
	Offshore	BM-P-2	P-M-1269	Round 6	Petrobras <sup>1</sup> (100)	
	Offshore	BM-P-2	P-M-1271	Round 6	Petrobras <sup>1</sup> (100)	
	Offshore	BM-P-2	P-M-1349	Round 6	Petrobras <sup>1</sup> (100)	
	Offshore	BM-P-2	P-M-1351	Round 6	Petrobras <sup>1</sup> (100)	
	Offshore	BM-P-2	P-M-1353	Round 6	Petrobras <sup>1</sup> (100)	
<b>Pernambuco-Paraíba</b>	Offshore	BM-PEPB-1	PEPB-M-783	Round 9	Petrobras <sup>1</sup> (80)/Petrogal Brasil (20)	
	Offshore	BM-PEPB-2	PEPB-M-837	Round 9	Petrobras <sup>1</sup> (80)/Petrogal Brasil (20)	
	Offshore	BM-PEPB-3	PEPB-M-839	Round 9	Petrobras <sup>1</sup> (80)/Petrogal Brasil (20)	
<b>Potiguar</b>	Onshore	BT-POT-3	BT-POT-3	Round 2	Petrosynergy <sup>1</sup> (100)	
	Onshore	BT-POT-4	BT-POT-4	Round 2	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-5	BT-POT-5	Round 3	Petrosynergy <sup>1</sup> (100)	
	Onshore/Offshore	BM-POT-11	BM-POT-11	Round 4	Petrobras <sup>1</sup> (60)/ El Paso (40)	
	Onshore/Offshore	BM-POT-13	BM-POT-13	Round 4	Petrobras <sup>1</sup> (65)/ El Paso (35)	
	Onshore	BT-POT-8	BT-POT-8	Round 4	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-9	BT-POT-9	Round 4	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)	
	Onshore	BT-POT-10	BT-POT-10	Round 4	Potióleo <sup>1</sup> (100)	
	Onshore	BT-POT-17	POT-T-352	Round 5	Petrosynergy <sup>1</sup> (100)	
	Onshore	BT-POT-21	POT-T-558	Round 5	Partex <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-28	POT-T-478	Round 6	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-29	POT-T-355	Round 6	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-29	POT-T-394	Round 6	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-29	POT-T-395	Round 6	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-32	POT-T-435	Round 6	Petrobras <sup>1</sup> (50)/Petrogal Brasil (50)	
	Onshore	BT-POT-32	POT-T-436	Round 6	Petrobras <sup>1</sup> (50)/Petrogal Brasil (50)	
	Onshore	BT-POT-32	POT-T-479	Round 6	Petrobras <sup>1</sup> (50)/Petrogal Brasil (50)	
	Onshore	BT-POT-32	POT-T-480	Round 6	Petrobras <sup>1</sup> (50)/Petrogal Brasil (50)	
	Onshore	BT-POT-34	POT-T-513	Round 6	Partex Brasil <sup>1</sup> (50)/ Petrobras (50)	
	Onshore	BT-POT-34	POT-T-514	Round 6	Partex Brasil <sup>1</sup> (50)/ Petrobras (50)	
	Onshore	BT-POT-34	POT-T-557	Round 6	Partex Brasil <sup>1</sup> (50)/ Petrobras (50)	
	Onshore	BT-POT-34	POT-T-559	Round 6	Partex Brasil <sup>1</sup> (50)/ Petrobras (50)	
	Onshore	BT-POT-35	POT-T-520	Round 6	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-35	POT-T-700	Round 6	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-36	POT-T-521	Round 6	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-39A	POT-T-701	Round 6	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-42	POT-T-661	Round 6	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-43	POT-T-704	Round 6	Quantra <sup>1</sup> (75)/Phoenix (25)	
	Offshore	BM-POT-16	POT-M-663	Round 7	Petrobras <sup>1</sup> (60)/ Petrogal Brasil (20)/ EnCana (20)	
	Offshore	BM-POT-16	POT-M-760	Round 7	Petrobras <sup>1</sup> (60)/ Petrogal Brasil (20)/ EnCana (20)	
	Offshore	BM-POT-17	POT-M-665	Round 7	Petrobras <sup>1</sup> (80)/ Petrogal Brasil (20)	
	Offshore	BM-POT-17	POT-M-853	Round 7	Petrobras <sup>1</sup> (80)/ Petrogal Brasil (20)	
	Offshore	BM-POT-17	POT-M-855	Round 7	Petrobras <sup>1</sup> (80)/ Petrogal Brasil (20)	
Onshore	BT-POT-46	POT-T-298	Round 7	Aurizônia <sup>1</sup> (50) /Phoenix (50)		
Onshore	BT-POT-50	POT-T-445	Round 7	Petrobras <sup>1</sup> (100)		
Onshore	BT-POT-50	POT-T-488	Round 7	Petrobras <sup>1</sup> (100)		
Onshore	BT-POT-51	POT-T-354	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)		
Onshore	BT-POT-51	POT-T-440	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)		
Onshore	BT-POT-51	POT-T-447	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)		
Onshore	BT-POT-51	POT-T-484	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)		
Onshore	BT-POT-53	POT-T-481	Round 7	Petrosynergy <sup>1</sup> (100)		
Onshore	BT-POT-54	POT-T-612	Round 7	Odebrecht <sup>1</sup> (50)/Koch Petróleo (50)		

Frame 1.1 - Blocks in the exploration phase on 12/31/2008 (continue)

Blocks in the exploration phase on 12/31/2008						
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Bidding rounds	Concessionaries (%)	
<b>Potiguar</b>	Onshore	BT-POT-55	POT-T-748	Round 7	Petrobras (70)/ Starfish <sup>1</sup> (30)	
	Onshore	BT-POT-55	POT-T-749	Round 7	Petrobras (70)/ Starfish <sup>1</sup> (30)	
	Onshore	BT-POT-55	POT-T-794	Round 7	Petrobras (70)/ Starfish <sup>1</sup> (30)	
	Onshore	BT-POT-56	POT-T-605	Round 7	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)	
	Onshore	BT-POT-56	POT-T-606	Round 7	Petrobras <sup>1</sup> (50)/ Petrogal Brasil (50)	
	Onshore	BT-POT-57	POT-T-744	Round 7	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-57	POT-T-745	Round 7	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-59	POT-T-650	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-59	POT-T-651	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-59	POT-T-696	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-59	POT-T-697	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)	
	Onshore	BT-POT-60	POT-T-747	Round 7	Petrosynergy <sup>1</sup> (100)	
	Onshore	BT-POT-61	POT-T-565	Round 7	Quantra <sup>1</sup> (50)/ Phoenix (50)	
	Onshore	BT-POT-61	POT-T-792	Round 7	Quantra <sup>1</sup> (50)/ Phoenix (50)	
	Onshore	BT-POT-61	POT-T-882	Round 7	Quantra <sup>1</sup> (50)/ Phoenix (50)	
	Onshore	BT-POT-62	POT-T-531	Round 7	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-62	POT-T-705	Round 7	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-62	POT-T-706	Round 7	Petrobras <sup>1</sup> (100)	
	Onshore	BT-POT-63	POT-T-573	Round 7	Aurizônia <sup>1</sup> (50)/Phoenix (50)	
	Onshore	BT-POT-64	POT-T-525	Round 7	Quantra <sup>1</sup> (50)/Phoenix (50)	
	Onshore	BT-POT-65	POT-T-191	Round 9	RMC <sup>1</sup> (100)	
	Onshore	BT-POT-65	POT-T-192	Round 9	RMC <sup>1</sup> (100)	
	Onshore	BT-POT-69	POT-T-208	Round 9	Comp <sup>1</sup> (100)	
	<b>Recôncavo</b>	Onshore	BT-REC-4	BT-REC-4	Round 3	Petrobras <sup>1</sup> (100)
		Onshore	BT-REC-7	BT-REC-7	Round 4	Petrobras <sup>1</sup> (75)/ Starfish (25)
		Onshore	BT-REC-8	BT-REC-8	Round 4	Queiroz Galvão <sup>1</sup> (50)/ Brasoil Manati (50)
Onshore		BT-REC-24	REC-T-103	Round 7	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-24	REC-T-66	Round 7	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-24	REC-T-67	Round 7	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-24	REC-T-77	Round 7	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-28	REC-T-59	Round 7	Silver Marlin <sup>1</sup> (50)/ Mercury (50)	
Onshore		BT-REC-29	REC-T-126	Round 7	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-29	REC-T-265	Round 7	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-30	REC-T-165	Round 7	Starfish <sup>1</sup> (70)/ Norse (30)	
Onshore		BT-REC-33	REC-T-138	Round 7	Silver Marlin <sup>1</sup> (50)/Mercury (50)	
Onshore		BT-REC-34	REC-T-226	Round 9	Brasoil <sup>1</sup> (100)	
Onshore		BT-REC-35	REC-T-210	Round 9	Comp <sup>1</sup> (33.34)/ Delf (33.33)/Orteng (33.33)	
Onshore		BT-REC-36	REC-T-211	Round 9	Comp <sup>1</sup> (33.34)/ Delf (33.33)/Orteng (33.33)	
Onshore		BT-REC-37	REC-T-158	Round 9	Construtura Cowan <sup>1</sup> (100)	
Onshore		BT-REC-38	REC-T-240	Round 9	Construtura Cowan <sup>1</sup> (100)	
Onshore		BT-REC-39	REC-T-129	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-40	REC-T-131	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-41	REC-T-132	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-42	REC-T-142	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-43	REC-T-157	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-44	REC-T-196	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-45	REC-T-197	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-46	REC-T-224	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-47	REC-T-144	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-47	REC-T-155	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-47	REC-T-182	Round 9	Alvorada <sup>1</sup> (100)	
Onshore		BT-REC-48	REC-T-168	Round 9	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-49	REC-T-181	Round 9	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-50	REC-T-195	Round 9	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-51	REC-T-209	Round 9	Petrobras <sup>1</sup> (100)	
Onshore		BT-REC-52	REC-T-225	Round 9	Recôncavo E&P <sup>1</sup> (100)	
Onshore	BT-REC-54	REC-T-169	Round 9	W Washington <sup>1</sup> (30)/Petro Vista (50)/BrazAlta (20)		
Onshore	BT-REC-56	REC-T-166	Round 9	Starfish <sup>1</sup> (40)/Eaglestar (30)/Somoil (30)		
Onshore	BT-REC-57	REC-T-130	Round 9	Starfish <sup>1</sup> (50)/Petrobras (50)		
Onshore	BT-REC-58	REC-T-183	Round 9	Petrosynergy <sup>1</sup> (100)		
Onshore	BT-REC-59	REC-T-153	Round 9	Petrosynergy <sup>1</sup> (70)/Silver Marlin (30)		
Onshore	BT-REC-60	REC-T-170	Round 9	W Washington <sup>1</sup> (37.50)/BrazAlta (37.50)/Petro Vista (25)		
<b>Rio do Peixe</b>	Onshore	BT-RIOP-1	RIOP-T-75	Round 9	Lábrea <sup>1</sup> (100)	
	Onshore	BT-RIOP-2	RIOP-T-41	Round 9	Petrobras <sup>1</sup> (100)	
	Onshore	BT-RIOP-3	RIOP-T-20	Round 9	UTC Engenharia <sup>1</sup> (100)	
	Onshore	BT-RIOP-4	RIOP-T-21	Round 9	Ral Engenharia <sup>1</sup> (50)/Univen (50)	
	Onshore	BT-RIOP-5	RIOP-T-30	Round 9	Ral Engenharia <sup>1</sup> (50)/Univen (50)	
	Onshore	BT-RIOP-6	RIOP-T-31	Round 9	Ral Engenharia <sup>1</sup> (50)/Univen (50)	
	Onshore	BT-RIOP-7	RIOP-T-55	Round 9	Ral Engenharia <sup>1</sup> (50)/Univen (50)	
	Onshore	BT-RIOP-8	RIOP-T-56	Round 9	Ral Engenharia <sup>1</sup> (50)/Univen (50)	
<b>Santos</b>	Offshore	BM-S-3	BM-S-3	Round 1	Petrobras <sup>1</sup> (100)	
	Offshore	BM-S-4	BM-S-4	Round 1	Eni Oil <sup>1</sup> (100)	
	Offshore	BM-S-7	BM-S-7	Round 2	Petrobras <sup>1</sup> (63)/ Repsol YPF (37)	
	Offshore	BM-S-8	BM-S-8	Round 2	Petrobras <sup>1</sup> (66)/ Shell (20)/ Petrogal Brasil (14)	
	Offshore	BM-S-9	BM-S-9	Round 2	Petrobras <sup>1</sup> (45)/ BG Brasil (30)/ Repsol YPF (25)	
	Offshore	BM-S-10	BM-S-10	Round 2	Petrobras <sup>1</sup> (65)/ BG Brasil (25)/ Partex (10)	
	Offshore	BM-S-11	BM-S-11	Round 2	Petrobras <sup>1</sup> (65)/ BG Brasil (25)/ Petrogal (10)	
	Offshore	BM-S-12	BM-S-12	Round 3	Petrobras <sup>1</sup> (70)/ Queiroz Galvão (30)	

Frame 1.1 - Blocks in the exploration phase on 12/31/2008 (continue)

Blocks in the exploration phase on 12/31/2008					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Bidding rounds	Concessionaries (%)
<b>Santos</b>	Offshore	BM-S-17	BM-S-17	Round 3	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-21	BM-S-21	Round 3	Petrobras <sup>1</sup> (80)/ Petrogal Brasil (20)
	Offshore	BM-S-24	BM-S-24	Round 3	Petrobras <sup>1</sup> (80)/ Petrogal Brasil (20)
	Offshore	BM-S-29	BM-S-29	Round 4	Maersk Brasil <sup>1</sup> (100)
	Offshore	BM-S-40	S-M-1288	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-40	S-M-1289	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-41	S-M-1352	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-41	S-M-1354	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-41	S-M-1356	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-41	S-M-1358	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-41	S-M-1480	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-41	S-M-1482	Round 5	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-42	S-M-237	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-42	S-M-239	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-42	S-M-324	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-42	S-M-415	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-42	S-M-417	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-44	S-M-172	Round 6	Petrobras <sup>1</sup> (75)/Repsol YPF(25)
	Offshore	BM-S-44	S-M-330	Round 6	Petrobras <sup>1</sup> (75)/Repsol YPF(25)
	Offshore	BM-S-45	S-M-320	Round 6	Petrobras <sup>1</sup> (60)/Shell (40)
	Offshore	BM-S-45	S-M-322	Round 6	Petrobras <sup>1</sup> (60)/Shell (40)
	Offshore	BM-S-46	S-M-729	Round 7	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-46	S-M-790	Round 7	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-47	S-M-615	Round 7	BG Brasil <sup>1</sup> (50)/ Repsol YPF(25)/CVRD (25)
	Offshore	BM-S-47	S-M-672	Round 7	BG Brasil <sup>1</sup> (50)/ Repsol YPF(25)/CVRD (25)
	Offshore	BM-S-48	S-M-616	Round 7	Repsol YPF <sup>1</sup> (40)/ Petrobras (35)/Woodside (25)
	Offshore	BM-S-48	S-M-617	Round 7	Repsol YPF <sup>1</sup> (40)/ Petrobras (35)/Woodside (25)
	Offshore	BM-S-48	S-M-670	Round 7	Repsol YPF <sup>1</sup> (40)/ Petrobras (35)/Woodside (25)
	Offshore	BM-S-48	S-M-673	Round 7	Repsol YPF <sup>1</sup> (40)/ Petrobras (35)/Woodside (25)
	Offshore	BM-S-48	S-M-674	Round 7	Repsol YPF <sup>1</sup> (40)/ Petrobras (35)/Woodside (25)
	Offshore	BM-S-48	S-M-675	Round 7	Repsol YPF <sup>1</sup> (40)/ Petrobras (35)/Woodside (25)
	Offshore	BM-S-48	S-M-728	Round 7	Repsol YPF <sup>1</sup> (40)/ Petrobras (35)/Woodside (25)
	Offshore	BM-S-48	S-M-789	Round 7	Repsol YPF <sup>1</sup> (40)/ Petrobras (35)/Woodside (25)
	Offshore	BM-S-49	S-M-1226	Round 7	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-50	S-M-623	Round 7	Petrobras <sup>1</sup> (60)/Repsol YPF (20)/BG Brasil (20)
	Offshore	BM-S-51	S-M-619	Round 7	Petrobras <sup>1</sup> (60)/ Repsol YPF(40)
	Offshore	BM-S-52	S-M-508	Round 7	Petrobras (60)/ BG Brasil <sup>1</sup> (40)
	Offshore	BM-S-53	S-M-405	Round 7	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-54	S-M-518	Round 7	Shell <sup>1</sup> (100)
	Offshore	BM-S-55	S-M-506	Round 7	Repsol YPF <sup>1</sup> (40)/ Petrobras (35)/Woodside (25)
	Offshore	BM-S-56	S-M-226	Round 9	OGX <sup>1</sup> (100)
	Offshore	BM-S-57	S-M-268	Round 9	OGX <sup>1</sup> (100)
	Offshore	BM-S-58	S-M-270	Round 9	OGX <sup>1</sup> (100)
	Offshore	BM-S-59	S-M-314	Round 9	OGX <sup>1</sup> (100)
	Offshore	BM-S-60	S-M-225	Round 9	Starfish <sup>1</sup> (60)/Petrobras(40)
	Offshore	BM-S-61	S-M-1037	Round 9	Karoon Petróleo e Gás <sup>1</sup> (100)
	Offshore	BM-S-62	S-M-1102	Round 9	Karoon Petróleo e Gás <sup>1</sup> (100)
	Offshore	BM-S-63	S-M-1036	Round 9	Norse Energy <sup>1</sup> (50)/Brasoil (50)
	Offshore	BM-S-64	S-M-613	Round 9	Petrobras <sup>1</sup> (100)
	Offshore	BM-S-65	S-M-713	Round 9	Petrobras <sup>1</sup> (60)/CVRD (40)
Offshore	BM-S-66	S-M-791	Round 9	Petrobras <sup>1</sup> (40)/CVRD (30)/Maersk (30)	
Offshore	BM-S-67	S-M-792	Round 9	Petrobras <sup>1</sup> (40)/CVRD (30)/Maersk (30)	
Offshore	BM-S-68	S-M-1101	Round 9	Karoon Petróleo e Gás <sup>1</sup> (100)	
Offshore	BM-S-69	S-M-1165	Round 9	Karoon Petróleo e Gás <sup>1</sup> (100)	
Offshore	BM-S-70	S-M-1166	Round 9	Karoon Petróleo e Gás <sup>1</sup> (100)	
Offshore	BM-S-71	S-M-1035	Round 9	Norse Energy <sup>1</sup> (50)/Brasoil (50)	
Offshore	BM-S-72	S-M-1100	Round 9	Norse Energy <sup>1</sup> (50)/Brasoil (50)	
Offshore	BM-S-73	S-M-1413	Round 9	ONCG Campos <sup>1</sup> (100)	
Offshore	BM-S-74	S-M-1476	Round 9	Petrobras <sup>1</sup> (70)/Ecopetrol Oleo e Gás (30)	
Offshore	BM-S-75	S-M-1162	Round 9	Petrobras <sup>1</sup> (60)/Queiroz Galvão (20)/Petrogal Brasil (20)	
Offshore	BM-S-76	S-M-1163	Round 9	Petrobras <sup>1</sup> (60)/Queiroz Galvão (20)/Petrogal Brasil (20)	
Offshore	BM-S-77	S-M-1227	Round 9	Petrobras <sup>1</sup> (60)/Queiroz Galvão (20)/Petrogal Brasil (20)	
<b>São Francisco</b>	Onshore	BT-SF-2	SF-T-101	Round 7	Petrobras <sup>1</sup> (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-102	Round 7	Petrobras <sup>1</sup> (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-103	Round 7	Petrobras <sup>1</sup> (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-111	Round 7	Petrobras <sup>1</sup> (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-112	Round 7	Petrobras <sup>1</sup> (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-113	Round 7	Petrobras <sup>1</sup> (50)/BG Brasil (50)
	Onshore	BT-SF-3	SF-T-105	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-106	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-115	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-118	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-121	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-124	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-125	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-128	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-130	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-131	Round 7	Oil M&S <sup>1</sup> (100)

Frame 1.1 - Blocks in the exploration phase on 12/31/2008

Blocks in the exploration phase on 12/31/2008					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Bidding rounds	Concessionaries (%)
	Onshore	BT-SF-3	SF-T-134	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-137	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-138	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-139	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-143	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-144	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-145	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-85	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-86	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-94	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-95	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-3	SF-T-96	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SF-5	SF-T-132	Round 7	Orteng <sup>1</sup> (30)/Codemig (49)/Delp Engenharia (11)/Comp (10)
	Onshore	BT-SF-6	SF-T-133	Round 7	Cisco Oil and Gas <sup>1</sup> (100)
	Onshore	BT-SF-7	SF-T-92	Round 7	Abaris RJ <sup>1</sup> (100)
	Onshore	BT-SF-8	SF-T-119	Round 7	Abaris RJ <sup>1</sup> (100)
	Onshore	BT-SF-9	SF-T-126	Round 7	Abaris RJ <sup>1</sup> (100)
<b>Sergipe</b>	Offshore	BM-SEAL-4	BM-SEAL-4	Round 2	Petrobras <sup>1</sup> (75)/ONGC Campos (25)
	Offshore	BM-SEAL-9	BM-SEAL-9	Round 4	Petrobras <sup>1</sup> (85)/ Partex Brasil (15)
	Offshore	BM-SEAL-10	SEAL-M-347	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-SEAL-10	SEAL-M-454	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-SEAL-10	SEAL-M-495	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-SEAL-10	SEAL-M-499	Round 6	Petrobras <sup>1</sup> (100)
	Offshore	BM-SEAL-11	SEAL-M-349	Round 6	Petrobras <sup>1</sup> (60)/ EnCana (40)
	Offshore	BM-SEAL-11	SEAL-M-426	Round 6	Petrobras <sup>1</sup> (60)/ EnCana (40)
	Offshore	BM-SEAL-11	SEAL-M-497	Round 6	Petrobras <sup>1</sup> (60)/ EnCana (40)
	Offshore	BM-SEAL-11	SEAL-M-569	Round 6	Petrobras <sup>1</sup> (60)/ EnCana (40)
	Onshore	BT-SEAL-4	SEAL-T-357	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-SEAL-4	SEAL-T-371	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-SEAL-6	SEAL-T-330	Round 7	Nord Oil <sup>1</sup> (60)/Mercury (40)
	Onshore	BT-SEAL-8	SEAL-T-369	Round 7	Quantra <sup>1</sup> (50)/Phoenix (50)
	Onshore	BT-SEAL-12	SEAL-T-390	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-SEAL-12	SEAL-T-391	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-SEAL-12	SEAL-T-410	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-SEAL-13	SEAL-T-412	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)
	Onshore	BT-SEAL-13	SEAL-T-419	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)
	Onshore	BT-SEAL-13	SEAL-T-429	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)
	Onshore	BT-SEAL-13	SEAL-T-456	Round 7	Petrogal Brasil <sup>1</sup> (50)/Petrobras (50)
	Onshore	BT-SEAL-15	SEAL-T-434	Round 7	Quantra <sup>1</sup> (50)/Phoenix (50)
	Onshore	BT-SEAL-16	SEAL-T-460	Round 7	Silver Marlin <sup>1</sup> (100)
	Onshore	BT-SEAL-16	SEAL-T-467	Round 7	Silver Marlin <sup>1</sup> (100)
	Onshore	BT-SEAL-18	SEAL-T-455	Round 7	Petrobras (70)/Starfish <sup>1</sup> (30)
	Onshore	BT-SEAL-18	SEAL-T-461	Round 7	Petrobras (70)/Starfish <sup>1</sup> (30)
	Onshore	BT-SEAL-18	SEAL-T-462	Round 7	Petrobras (70)/Starfish <sup>1</sup> (30)
	Onshore	BT-SEAL-20	SEAL-T-430	Round 7	Nord Oil <sup>1</sup> (60)/Mercury (40)
	Onshore	BT-SEAL-22	SEAL-T-417	Round 7	Aurizônia <sup>1</sup> (50) /Phoenix (50)
	Onshore	BT-SEAL-22	SEAL-T-418	Round 7	Aurizônia <sup>1</sup> (50) /Phoenix (50)
<b>Solimões</b>	Onshore	BT-SOL-1	BT-SOL-1	Round 4	Petrobras <sup>1</sup> (100)
	Onshore	BT-SOL-3	SOL-T-150	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-SOL-3	SOL-T-171	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-SOL-3	SOL-T-173	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-SOL-3	SOL-T-193	Round 7	Petrobras <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-148	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-149	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-151	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-151	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-168	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-169	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-170	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-172	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-174	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-191	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-192	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-194	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-195	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-196	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-197	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-214	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-215	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-216	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-217	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-218	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-219	Round 7	Oil M&S <sup>1</sup> (100)
	Onshore	BT-SOL-4	SOL-T-220	Round 7	Oil M&S <sup>1</sup> (100)

Source: ANP/SEP.

<sup>1</sup>Operator.



Frame 1.2 - Fields under development on 12/31/2008

Fields under development on 12/31/2008				
Sedimentary basins	State	Onshore/Offshore	Fields	Concessionaries (%)
<b>Amazonas</b>	Amazonas	Onshore	Azulão	Petrobras <sup>1</sup> (100)
	Amazonas	Onshore	Japiim	Petrobras <sup>1</sup> (100)
<b>Camamu</b>	Bahia	Offshore	Camarão	El Paso Óleo e Gás <sup>1</sup> (100)
	Bahia	Offshore	Pinaúna	El Paso Óleo e Gás <sup>1</sup> (100)
	Bahia	Offshore	Sardinha	Petrobras (40) / El Paso Óleo e Gás <sup>1</sup> (40) / Norse (20)
<b>Campos</b>	Espírito Santo	Offshore	Abalone	Shell Ltda <sup>1</sup> (35) / Petrobras (35) / Esso Campos (30)
	Espírito Santo	Offshore	Argonauta	Shell Ltda <sup>1</sup> (35) / Petrobras (35) / Esso Campos (30)
	Espírito Santo	Offshore	Baleia Anã	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Baleia Azul	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Baleia Franca	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Cachalote	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Carapicu	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Carataí	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Catuá	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Caxaréu	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Frade	Chevron Brasil <sup>1</sup> (51.7) / Petrobras (30) / Frade Japão (18.3)
	Espírito Santo	Offshore	Mangangá	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Maromba	Petrobras <sup>1</sup> (62.5) / Chevron Overseas (37.5)
	Espírito Santo	Offshore	Nautilus	Shell Ltda <sup>1</sup> (35) / Petrobras (35) / Esso Campos (30)
	Espírito Santo	Offshore	Ostra	Shell Ltda <sup>1</sup> (35) / Petrobras (35) / Esso Campos (30)
	Rio de Janeiro	Offshore	Papa-Terra	Petrobras <sup>1</sup> (62.5) / Chevron Overseas (37.5)
	Rio de Janeiro	Offshore	Peregrino	Statoilhydro <sup>1</sup> (100)
	Espírito Santo	Offshore	Pirambu	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Xerelete	Petrobras <sup>1</sup> (41.2) / Devon Energy (17.6) / Total E&P do Brasil (41.2)
<b>Espírito Santo</b>	Espírito Santo	Onshore	Biguá	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Camarupim	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Camarupim Norte	Petrobras <sup>1</sup> (65) / El Paso Óleo e Gás (35)
	Espírito Santo	Offshore	Canapu	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Cangoá	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Carapó	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Jacupemba	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Saira	Petrobras <sup>1</sup> (100)
<b>Potiguar</b>	Rio Grande do Norte	Onshore	Baixa do Juazeiro	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Offshore	Guaiuba	Petrobras <sup>1</sup> (21) / Unopaso (79)
	Rio Grande do Norte	Onshore	Guajá	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Pardal	Potióleo S/A <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Rolinha	Potióleo S/A <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Sabiá	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Offshore	Salema Branca	Petrobras <sup>1</sup> (100)
<b>Recôncavo</b>	Bahia	Onshore	Maritaca	Starfish <sup>1</sup> (50) / Somoil (50)
	Bahia	Onshore	Jaó	Queiroz Galvão <sup>1</sup> (50) / Brasoil Manati (50)
<b>Santos</b>	Rio de Janeiro	Offshore	Atlanta	Shell <sup>1</sup> (40) / Chevron Brasil (20) / Petrobras (40)
	Rio de Janeiro	Offshore	Carapiá	Petrobras <sup>1</sup> (100)
	Santa Catarina	Offshore	Cavalo-Marinho	Petrobras <sup>1</sup> (35) / Norse (50) / Brasoil (15)
	Paraná	Offshore	Estrela-do-Mar	Petrobras <sup>1</sup> (35) / Norse (65)
	São Paulo	Offshore	Lagosta	Petrobras <sup>1</sup> (100)
	São Paulo	Offshore	Mexilhão	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Oliva	Shell <sup>1</sup> (40) / Chevron Brasil (20) / Petrobras (40)
	Rio de Janeiro	Offshore	Pirapitanga	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Tambaú	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Tambuata	Petrobras <sup>1</sup> (100)
	Santa Catarina	Offshore	Tubarão	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Uruguá	Petrobras <sup>1</sup> (100)
<b>Sergipe-Alagoas</b>	Alagoas	Onshore	Fazenda Guindaste	Petrosynergy <sup>1</sup> (100)
	Alagoas	Onshore	Lagoa Pacas	Petrosynergy <sup>1</sup> (100)
	Alagoas	Onshore	Mutum	Petrobras <sup>1</sup> (100)
	Alagoas	Onshore	Sebastião Ferreira	Petrosynergy <sup>1</sup> (100)
<b>Solimões</b>	Amazonas	Onshore	Araracanga	Petrobras <sup>1</sup> (100)
	Amazonas	Onshore	Carapanaúba	Petrobras <sup>1</sup> (100)
	Amazonas	Onshore	Cupiúba	Petrobras <sup>1</sup> (100)
	Amazonas	Onshore	Igarapé Pucá	Petrobras <sup>1</sup> (100)
	Amazonas	Onshore	Juruá	Petrobras <sup>1</sup> (100)
	Amazonas	Onshore	Nordeste de Juruá	Petrobras <sup>1</sup> (100)
Amazonas	Onshore	Sudoeste Juruá	Petrobras <sup>1</sup> (100)	
<b>Tucano Sul</b>	Bahia	Onshore	Iraí	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Lagoa Branca	Petrobras <sup>1</sup> (100)

Source: ANP/SDP.

<sup>1</sup> Operator.

Frame 1.3 - Fields in the production phase on 12/31/2008 (continue)

Fields in the production phase on 12/31/2008				
Sedimentary basins	State	Onshore/ Offshore	Fields	Concessionaries (%)
Camamu	Bahia	Offshore	Manati	Petrobras <sup>1</sup> (35) / Manati (45) / Rio das Contas (10) / Brasoil Manati (10)
	Bahia	Onshore	Morro do Barro <sup>2</sup>	Panergy <sup>1</sup> (30) / ERG (70)
	Bahia	Onshore	Jiribatuba <sup>2</sup>	Construtora Pioneira <sup>1</sup> (100)
Campos	Rio de Janeiro	Offshore	Albacora	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Albacora Leste	Petrobras <sup>1</sup> (90) / Repsol YPF (10)
	Rio de Janeiro	Offshore	Anequim	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Badejo	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Bagre	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Barracuda	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Bicudo	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Bijupirá	Shell Ltda <sup>1</sup> (80) / Petrobras (20)
	Rio de Janeiro	Offshore	Bonito	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Carapeba	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Caratinga	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Cherne	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Congro	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Corvina	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Enchova	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Enchova Oeste	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Espadarte	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Garoupa	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Garoupinha	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Jubarte	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Linguado	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Malhado	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Marimbá	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Marlim	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Marlim Leste	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Marlim Sul	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Moreia	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Namorado	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Nordeste de Namorado	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Pampo	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Parati	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Pargo	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Piraúna	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Polvo	Devon Energy <sup>1</sup> (60) / SK Brasil (40)
	Rio de Janeiro	Offshore	Roncador	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Salema	Shell Ltda <sup>1</sup> (80) / Petrobras (20)
	Rio de Janeiro	Offshore	Trilha	Petrobras <sup>1</sup> (100)
	Rio de Janeiro	Offshore	Vermelho	Petrobras <sup>1</sup> (100)
Rio de Janeiro	Offshore	Viola	Petrobras <sup>1</sup> (100)	
Rio de Janeiro	Offshore	Voador	Petrobras <sup>1</sup> (100)	
Ceará	Ceará	Offshore	Atum	Petrobras <sup>1</sup> (100)
	Ceará	Offshore	Curimã	Petrobras <sup>1</sup> (100)
	Ceará	Offshore	Espada	Petrobras <sup>1</sup> (100)
	Ceará	Offshore	Xaréu	Petrobras <sup>1</sup> (100)
Espírito Santo	Espírito Santo	Onshore	Barra do Ipiranga	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Cação	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Cacimbas	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Campo Grande	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Cancã	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Córrego Cedro Norte	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Córrego das Pedras	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Córrego Dourado	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Crejoá <sup>2</sup>	Koch Petróleo <sup>1</sup> (100)
	Espírito Santo	Onshore	Fazenda Alegre	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Fazenda Cedro	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Fazenda Cedro Norte	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Fazenda Queimadas	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Fazenda Santa Luzia	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Fazenda São Jorge	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Fazenda São Rafael	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Golfinho	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Guriri	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Inhambu	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Jacutinga	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Lagoa Bonita	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Lagoa Parda	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Lagoa Parda Norte	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Lagoa Parda Sul	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Lagoa Piabanha	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Lagoa Suruaca	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Mariricu	Petrobras <sup>1</sup> (100)

Frame 1.3 - Fields in the production phase on 12/31/2008 (continue)

Fields in the production phase on 12/31/2008				
Sedimentary basins	State	Onshore/ Offshore	Fields	Concessionaries (%)
<b>Espírito Santo</b>	Espírito Santo	Onshore	Mariricu Norte	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Mariricu Oeste	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Mosquito	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Nativo Oeste	Petrobras <sup>1</sup> (100)
	Espírito Santo	Offshore	Peroá	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Barra Seca	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Doce	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Ibiribas	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Ipiranga <sup>2</sup>	Cheim Transportes <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Itaúnas	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Itaúnas Leste	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Mariricu	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Preto	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Preto Oeste	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio Preto Sul	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Rio São Mateus	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	São Mateus	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Seriema	Petrobras <sup>1</sup> (100)
	Espírito Santo	Onshore	Tabuaiaí	Petrobras <sup>1</sup> (100)
	<b>Paraná</b>	Paraná	Onshore	Barra Bonita
<b>Potiguar</b>	Rio Grande do Norte	Onshore	Acauã	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Offshore	Agulha	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Alto do Rodrigues	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Angico	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Offshore	Arabaiana	Petrobras <sup>1</sup> (21) / Unopaso (79)
	Rio Grande do Norte	Offshore	Aratum	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Asa Branca	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Baixa do Algodão	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Barrinha	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Benfica	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Offshore	Biçara	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Boa Esperança	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Boa Vista	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Brejinho	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Cachoeirinha	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Canto do Amaro	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Offshore	Cioba	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Offshore	Dentão	Petrobras <sup>1</sup> (21) / Unopaso (79)
	Rio Grande do Norte	Onshore	Estreito	Petrobras <sup>1</sup> (100)
	Ceará	Onshore	Fazenda Belém	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Fazenda Canaan	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Fazenda Curral	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Fazenda Junco	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Fazenda Malaquias	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Fazenda Pocinho	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Guamaré	Petrobras <sup>1</sup> (100)
	Ceará	Onshore	Icapuí	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Jaçanã	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Janduí	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	João de Barro	Aurizônia <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Juazeiro	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Lagoa Aroeira	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Leste de Poço Xavier	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Livramento	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Lorena	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Macau	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Monte Alegre	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Morrinho	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Mossoró	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Noroeste do Morro Rosado	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Offshore	Oeste de Ubarana	Petrobras <sup>1</sup> (100)
	Rio Grande do Norte	Onshore	Pajeú	Petrobras <sup>1</sup> (100)
Rio Grande do Norte	Onshore	Pedra Sentada	Petrobras <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Periquito	Aurizônia <sup>1</sup> (75) / Phoenix (25)	
Rio Grande do Norte	Offshore	Pescada	Petrobras <sup>1</sup> (21) / Unopaso (79)	
Rio Grande do Norte	Onshore	Pintassilgo	Petrobras <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Poço Verde	Petrobras <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Poço Xavier	Petrobras <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Ponta do Mel	Petrobras <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Porto Carão	Petrobras <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Redonda	Petrobras <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Redonda Profundo	Petrobras <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Riacho da Forquilha	Petrobras <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Riacho Velho <sup>2</sup>	Genesis 2000 <sup>1</sup> (100)	
Rio Grande do Norte	Onshore	Rio Mossoró	Petrobras <sup>1</sup> (100)	

Frame 1.3 - Fields in the production phase on 12/31/2008 (continue)

Fields in the production phase on 12/31/2008					
Sedimentary basins	State	Onshore/ Offshore	Fields	Concessionaries (%)	
<b>Potiguar</b>	Rio Grande do Norte	Onshore	Salina Cristal	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Offshore	Serra	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Onshore	Serra do Mel	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Onshore	Serra Vermelha	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Onshore	Serraria	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Onshore	Siri	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Onshore	Três Marias	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Offshore	Ubarana	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Onshore	Upanema	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Onshore	Varginha	Petrobras <sup>1</sup> (100)	
	Rio Grande do Norte	Onshore	Várzea Redonda	Petrobras <sup>1</sup> (100)	
	<b>Recôncavo</b>	Bahia	Onshore	Acajá-Burizinho	Recôncavo E&P <sup>1</sup> (100)
		Bahia	Onshore	Água Grande	Petrobras <sup>1</sup> (100)
Bahia		Onshore	Apraiús	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Araçás	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Araçás Leste <sup>2</sup>	Egesa <sup>1</sup> (100)	
Bahia		Onshore	Aratu	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Biriba	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Bom Lugar <sup>2</sup>	Construtora Pioneira <sup>1</sup> (100)	
Bahia		Onshore	Bonsucesso	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Brejinho	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Buracica	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Camaçari	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Canabrava	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Canário	Petrosynergy <sup>1</sup> (100)	
Bahia		Onshore	Candeias	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Cantagalo	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Cassarongongo	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Cexis	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Cidade de Entre Rios	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Dom João	Petrobras <sup>1</sup> (100)	
Bahia		Offshore	Dom João Mar	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Alto das Pedras	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Alvorada	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Azevedo	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Bálamo	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Belém	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Boa Esperança	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Imbé	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Onça	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Painelas	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Fazenda Rio Branco	W. Washington - BA <sup>1</sup> (52.5) / BrazAlta (47.5)	
Bahia		Onshore	Fazenda Santo Estevão	W. Washington - BA <sup>1</sup> (52.5) / BrazAlta (47.5)	
Bahia		Onshore	Fazenda Sori	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Gomo	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Guanambi	Petrobras <sup>1</sup> (80) / Starfish (20)	
Bahia		Onshore	Ilha de Bimbarra	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Itaparica	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Jacuípe	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Jandaia	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Juriti	Recôncavo E&P <sup>1</sup> (100)	
Bahia		Onshore	Lagoa do Paulo	Recôncavo E&P <sup>1</sup> (100)	
Bahia		Onshore	Lagoa do Paulo Norte	Recôncavo E&P <sup>1</sup> (100)	
Bahia		Onshore	Lagoa do Paulo Sul	Recôncavo E&P <sup>1</sup> (100)	
Bahia		Onshore	Lagoa Verde	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Lamarão	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Leodório	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Malombê	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Mandacaru	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Mapele	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Massapé	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Massuí	Petrobras <sup>1</sup> (100)	
Bahia		Onshore	Mata de São João	Petrobras <sup>1</sup> (100)	
Bahia	Onshore	Miranga	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Miranga Norte	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Norte Fazenda Caruaçu	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Paramirim do Vencimento	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Pedrinhas	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Pojuca	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Pojuca Norte	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Quiambina	UFBA <sup>1</sup> (Campo Escola)		
Bahia	Onshore	Remanso	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Riacho da Barra	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Riacho Ouricuri	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Riacho São Pedro	Petrobras <sup>1</sup> (100)		
Bahia	Onshore	Rio da Serra	Petrobras <sup>1</sup> (100)		

Frame 1.3 - Fields in the production phase on 12/31/2008

Fields in the production phase on 12/31/2008				
Sedimentary basins	State	Onshore/ Offshore	Fields	Concessionaries (%)
<b>Recôncavo</b>	Bahia	Onshore	Rio do Bu	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Rio dos Ovos	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Rio Itariri	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Rio Joanes	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Rio Pipiri	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Rio Pojuca	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Rio Sauípe	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Rio Subaúma	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Santana	W. Washington - BA <sup>1</sup> (52.5) / BrazAlta (47.5)
	Bahia	Onshore	São Domingos	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	São Pedro	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Sauípe	W. Washington - BA <sup>1</sup> (52.5) / BrazAlta (47.5)
	Bahia	Onshore	Sesmaria	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Socorro	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Socorro Extensão	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Sussuarana	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Tangará	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Taquiipe	Petrobras <sup>1</sup> (100)
	<b>Santos</b>	Paraná	Offshore	Coral
Paraná		Offshore	Caravela	Petrobras <sup>1</sup> (100)
São Paulo		Offshore	Merluza	Petrobras <sup>1</sup> (100)
<b>Sergipe-Alagoas</b>	Sergipe	Onshore	Aguilhada	Petrobras <sup>1</sup> (100)
	Alagoas	Onshore	Anambé	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Angelim	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Aruari	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Atalaia Sul	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Brejo Grande	Petrobras <sup>1</sup> (100)
	Sergipe	Offshore	Caioba	Petrobras <sup>1</sup> (100)
	Sergipe	Offshore	Camorim	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Carmópolis	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Carapitanga <sup>2</sup>	Silver Marlim <sup>1</sup> (100)
	Sergipe	Onshore	Castanhal	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Cidade de Aracaju <sup>2</sup>	Construtora Pioneira <sup>1</sup> (100)
	Alagoas	Onshore	Cidade de São Miguel dos Campos	Petrobras <sup>1</sup> (100)
	Alagoas	Onshore	Cidade de Sebastião Ferreira	Petrosynergy <sup>1</sup> (100)
	Alagoas	Onshore	Coqueiro Seco	Petrosynergy <sup>1</sup> (100)
	Sergipe	Offshore	Dourado	Petrobras <sup>1</sup> (100)
	Alagoas	Onshore	Fazenda Pau Brasil	Petrosynergy <sup>1</sup> (100)
	Sergipe	Onshore	Foz do Vaza Barris <sup>2</sup>	Ral <sup>1</sup> (100)
	Alagoas	Onshore	Furado	Petrobras <sup>1</sup> (100)
	Sergipe	Offshore	Guaricema	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Ilha Pequena	Petrobras <sup>1</sup> (100)
	Alagoas	Onshore	Japuçu	Petrobras <sup>1</sup> (100)
	Alagoas	Onshore	Jequiá	Petrosynergy <sup>1</sup> (100)
	Sergipe	Onshore	Mato Grosso	Petrobras <sup>1</sup> (100)
	Alagoas	Offshore	Paru	Petrobras <sup>1</sup> (100)
	Alagoas	Onshore	Pilar	Petrobras <sup>1</sup> (100)
	Sergipe	Offshore	Piranema	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Riachuelo	Petrobras <sup>1</sup> (100)
	Sergipe	Offshore	Salgo	Petrobras <sup>1</sup> (100)
	Alagoas	Onshore	São Miguel dos Campos	Petrobras <sup>1</sup> (100)
	Sergipe	Onshore	Siririzinho	Petrobras <sup>1</sup> (100)
	Alagoas	Onshore	Sul de Coruripe	Petrosynergy <sup>1</sup> (100)
	Alagoas	Onshore	Tabuleiro dos Martins	Petrosynergy <sup>1</sup> (100)
Sergipe	Offshore	Tartaruga	UP Petróleo <sup>1</sup> (67.5) / Petrobras (25) / TDC (7.5)	
Sergipe	Offshore	Tatui	Petrobras <sup>1</sup> (100)	
Sergipe	Onshore	Tigre <sup>2</sup>	Severo Villares <sup>1</sup> (100)	
<b>Solimões</b>	Amazonas	Onshore	Leste de Urucu	Petrobras <sup>1</sup> (100)
	Amazonas	Onshore	Rio Urucu	Petrobras <sup>1</sup> (100)
	Amazonas	Onshore	Sudoeste Urucu	Petrobras <sup>1</sup> (100)
<b>Tucano Sul</b>	Bahia	Onshore	Conceição	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Fazenda Matinha	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Fazenda Santa Rosa	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Quererá	Petrobras <sup>1</sup> (100)
	Bahia	Onshore	Sempre Viva <sup>2</sup>	Orteng <sup>1</sup> (34) / Delp Engenharia (33) / Logos Engenharia (33)
	Bahia	Terra	Fazenda Matinha	Petrobras <sup>1</sup> (100)
	Bahia	Terra	Fazenda Santa Rosa	Petrobras <sup>1</sup> (100)
	Bahia	Terra	Quererá	Petrobras <sup>1</sup> (100)
Bahia	Terra	Sempre Viva <sup>2</sup>	Orteng <sup>1</sup> (34) / Delp Engenharia (33) / Logos Engenharia (33)	

Source: ANP/SDP.

<sup>1</sup> Operator. <sup>2</sup> Marginal fields.

## 1.2 Reserves

Table 1.1 - Proved oil reserves<sup>1</sup>, per location (onshore and offshore), by State - 1999-2008

State	Location	Proved oil reserves (10 <sup>3</sup> barrels)										08/07 %
		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>		<b>8,153.3</b>	<b>8,464.7</b>	<b>8,495.8</b>	<b>9,804.6</b>	<b>10,601.9</b>	<b>11,243.3</b>	<b>11,772.6</b>	<b>12,181.6</b>	<b>12,623.9</b>	<b>12,801.5</b>	<b>1.41</b>
<b>Subtotal</b>	<b>Onshore</b>	<b>799.3</b>	<b>854.2</b>	<b>909.0</b>	<b>927.0</b>	<b>934.5</b>	<b>864.5</b>	<b>882.7</b>	<b>904.9</b>	<b>886.5</b>	<b>895.9</b>	<b>1.07</b>
	<b>Offshore</b>	<b>7,354.1</b>	<b>7,610.5</b>	<b>7,586.8</b>	<b>8,877.6</b>	<b>9,667.4</b>	<b>10,378.8</b>	<b>10,890.0</b>	<b>11,276.8</b>	<b>11,737.5</b>	<b>11,905.6</b>	<b>1.43</b>
Amazonas	Onshore	110.8	128.8	131.8	114.5	110.6	100.0	91.9	96.7	102.7	107.6	4.85
Ceará	Onshore	5.6	2.6	6.6	6.2	5.7	6.8	6.3	5.5	8.4	10.4	23.89
	Offshore	114.9	90.7	64.7	70.0	67.1	70.1	71.3	69.5	57.5	58.9	2.42
Rio Grande do Norte	Onshore	260.9	283.2	270.8	259.2	260.3	250.2	259.4	263.0	264.6	265.2	0.22
	Offshore	66.8	65.4	68.7	69.8	71.6	67.4	80.7	79.6	98.1	98.1	0.08
Alagoas	Onshore	12.0	9.3	12.8	12.1	11.4	10.9	11.8	11.3	8.7	6.9	-21.25
	Offshore	3.7	2.1	1.4	1.3	1.4	1.6	1.2	0.9	0.7	0.6	-11.83
Sergipe	Onshore	174.7	178.8	210.1	204.8	220.0	223.3	230.0	226.6	231.8	226.4	-2.33
	Offshore	27.9	36.7	27.9	27.9	21.1	36.1	37.8	38.1	34.6	35.0	1.13
Bahia	Onshore	183.3	190.9	208.1	212.3	211.6	214.8	228.6	241.1	216.1	228.6	5.75
	Offshore	6.4	19.7	12.0	2.9	2.2	2.3	2.3	3.5	37.8	59.6	57.54
Espírito Santo	Onshore	52.1	60.6	68.8	118.0	114.9	58.4	54.6	60.7	54.1	50.8	-6.07
	Offshore	0.6	3.4	6.2	499.8	609.7	1,205.6	1,126.1	1,286.5	1,277.1	1,275.5	-0.13
Rio de Janeiro <sup>2</sup>	Offshore	7,104.2	7,366.1	7,375.6	8,174.4	8,854.1	8,931.1	9,532.6	9,762.2	10,177.9	10,328.5	1.48
São Paulo	Offshore	6.3	5.8	5.2	4.5	4.0	39.9	19.2	23.8	27.6	23.9	-13.61
Paraná <sup>3</sup>	Offshore	23.3	20.7	25.0	26.9	23.7	14.8	10.7	6.2	21.3	20.7	-2.89
Santa Catarina <sup>4</sup>	Offshore	-	-	-	-	12.5	9.9	8.2	6.6	4.8	4.8	0.00

Source: ANP/SDP, as per Ordinance ANP n° 9/2000.

Notes: 1. Reserves on 12/31 of reference years.

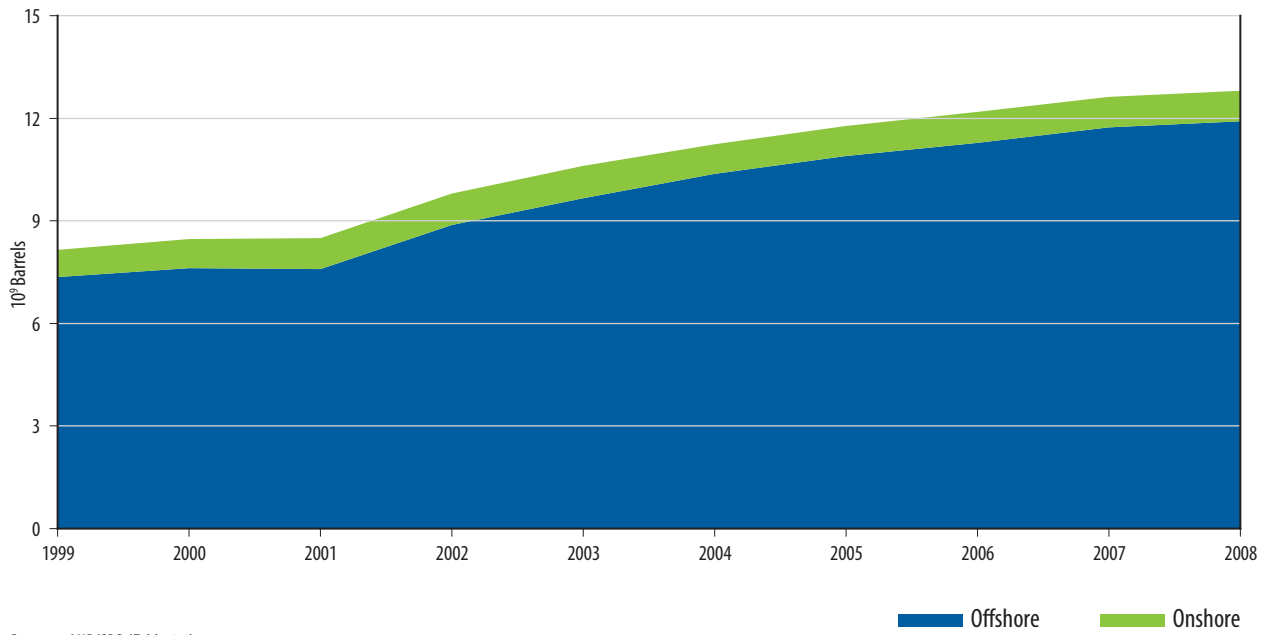
2. Condensate included.

3. See item in General Notes on "Proved Oil and Natural Gas Reserves".

<sup>1</sup> Reserves which refer to fields with development plans still under analysis by ANP included. <sup>2</sup> Reserves related to Roncador and Frade fields were totally accounted to the State of Rio de Janeiro for simplification.

<sup>3</sup> Reserves related to Caravela field were totally accounted to the State of Paraná for simplification. <sup>4</sup> Reserves related to Tubarão field were totally accounted to the State of Santa Catarina for simplification.

**Figure 1.1** - Proved oil reserves, by location (onshore and offshore) – 1999-2008



Source: ANP/SDP (Table 1.1).

Notes: 1. Reserves on 12/31 of reference years.

2. Includes condensate.

3. See General Notes on "Brazilian Oil and Natural Gas Reserves".

**Table 1.2** - Proved natural gas reserves<sup>1</sup>, per location (onshore and offshore), by State – 1999-2008

State	Location	Proved natural gas reserves (10 <sup>3</sup> m <sup>3</sup> )										08/07 %
		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>		<b>231,233</b>	<b>220,999</b>	<b>222,731</b>	<b>244,547</b>	<b>245,340</b>	<b>326,084</b>	<b>306,395</b>	<b>347,903</b>	<b>364,991</b>	<b>364,236</b>	<b>-0.21</b>
<b>Subtotal</b>	<b>Onshore</b>	<b>85,477</b>	<b>78,601</b>	<b>77,159</b>	<b>76,070</b>	<b>76,597</b>	<b>73,730</b>	<b>71,752</b>	<b>74,522</b>	<b>68,131</b>	<b>66,305</b>	<b>-2.68</b>
	<b>Offshore</b>	<b>145,756</b>	<b>142,398</b>	<b>145,572</b>	<b>168,477</b>	<b>168,743</b>	<b>252,354</b>	<b>234,643</b>	<b>273,381</b>	<b>296,860</b>	<b>297,931</b>	<b>0.36</b>
Amazonas	Onshore	44,897	44,402	44,549	47,893	49,075	49,448	51,465	53,232	52,774	52,143	-1.19
	Offshore	1,808	1,595	1,186	1,462	1,139	1,066	995	825	825	1,028	24.72
Rio Grande do Norte	Onshore	6,171	3,837	3,918	3,585	3,151	2,870	2,558	2,397	1,942	1,585	-18.36
	Offshore	17,520	16,841	15,930	17,221	17,289	18,337	15,059	14,047	11,755	8,663	-26.30
Alagoas	Onshore	7,268	5,961	5,766	4,719	4,286	3,929	3,525	3,241	3,042	3,058	0.51
	Offshore	1,563	1,272	1,154	1,118	980	1,198	1,084	815	850	730	-14.08
Sergipe	Onshore	925	789	864	820	861	829	768	814	761	989	29.95
	Offshore	5,385	4,861	4,132	3,860	2,525	3,286	2,751	2,978	2,842	2,678	-5.78
Bahia	Onshore	23,705	20,786	19,774	17,244	16,987	15,636	12,379	11,474	8,470	7,447	-12.08
	Offshore	4,183	4,126	3,083	10,101	8,681	9,625	9,388	14,269	26,423	24,671	-6.63
Espírito Santo	Onshore	2,510	2,826	2,288	1,809	2,237	1,018	1,057	3,364	1,140	940	-17.54
	Offshore	5,453	5,477	9,499	14,467	15,258	21,286	31,271	37,385	37,594	38,004	1.09
Rio de Janeiro <sup>2</sup>	Offshore	104,904	103,515	106,246	116,339	119,257	119,049	145,378	164,503	167,917	173,142	3.11
São Paulo	Offshore	4,940	4,669	4,273	3,875	3,508	78,471	28,696	38,543	47,881	48,340	0.96
Paraná <sup>3</sup>	Onshore	-	-	-	-	-	-	-	-	1	142	12,576.46
	Offshore	-	43	68	34	61	26	15	9	568	468	-17.56
Santa Catarina <sup>4</sup>	Offshore	-	-	-	-	44	11	7	7	206	205	-0.18

Source: ANP/SDP, as per Ordinance ANP n° 9/2000.

Notes: 1. Reserves on 12/31 of reference years.

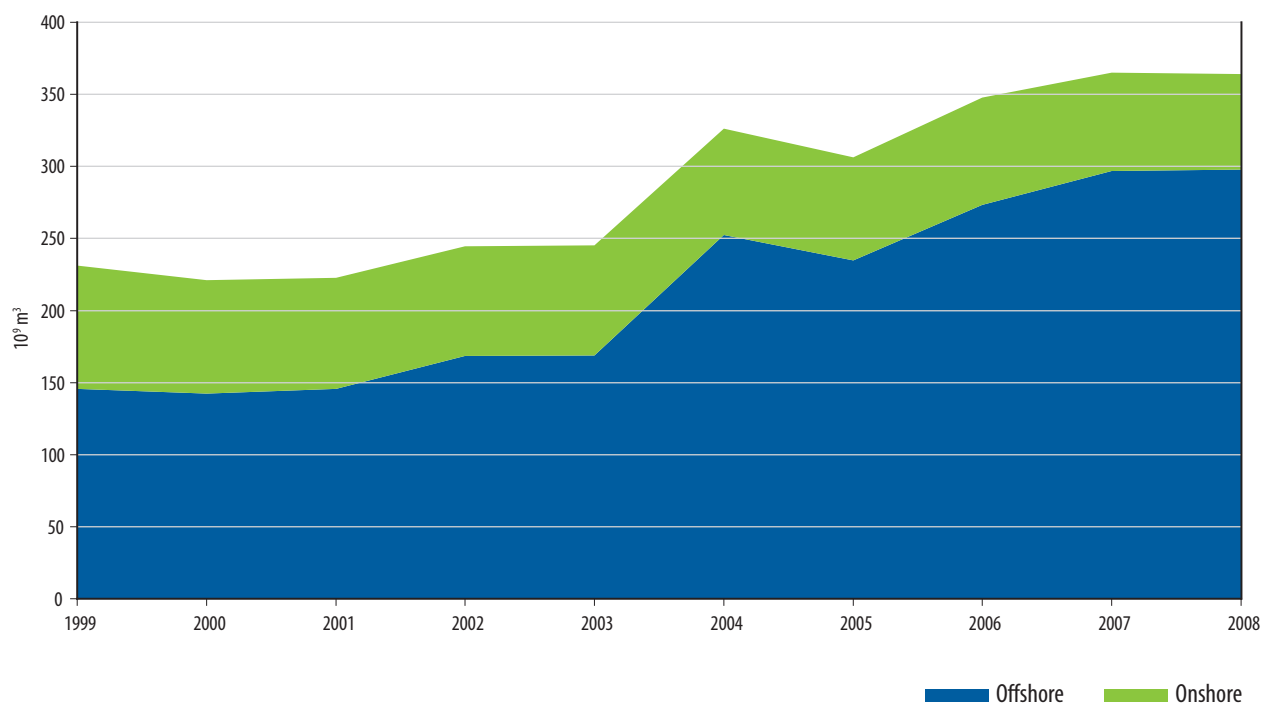
2. Condensate included.

3. See General Notes on "Brazilian Oil and Natural Gas Reserves".

<sup>1</sup> Reserves which refer to fields with development plans still under analysis by ANP included. <sup>2</sup> Reserves related to Roncador and Frade fields were totally accounted to the State of Rio de Janeiro for simplification. <sup>3</sup> Reserves related to Caravela field were totally accounted to the State of Paraná for simplification. <sup>4</sup> Reserves related to Tubarão field were totally accounted to the State of Santa Catarina for simplification.



**Figure 1.2** - Proved natural gas reserves, by location (onshore and offshore) – 1999-2008



Source: ANP/SDP (Table 1.2).

Notes: 1. Reserves on 12/31 of reference years.

2. See General Notes on "Brazilian Oil and Natural Gas Reserves".

## 1.3 Production

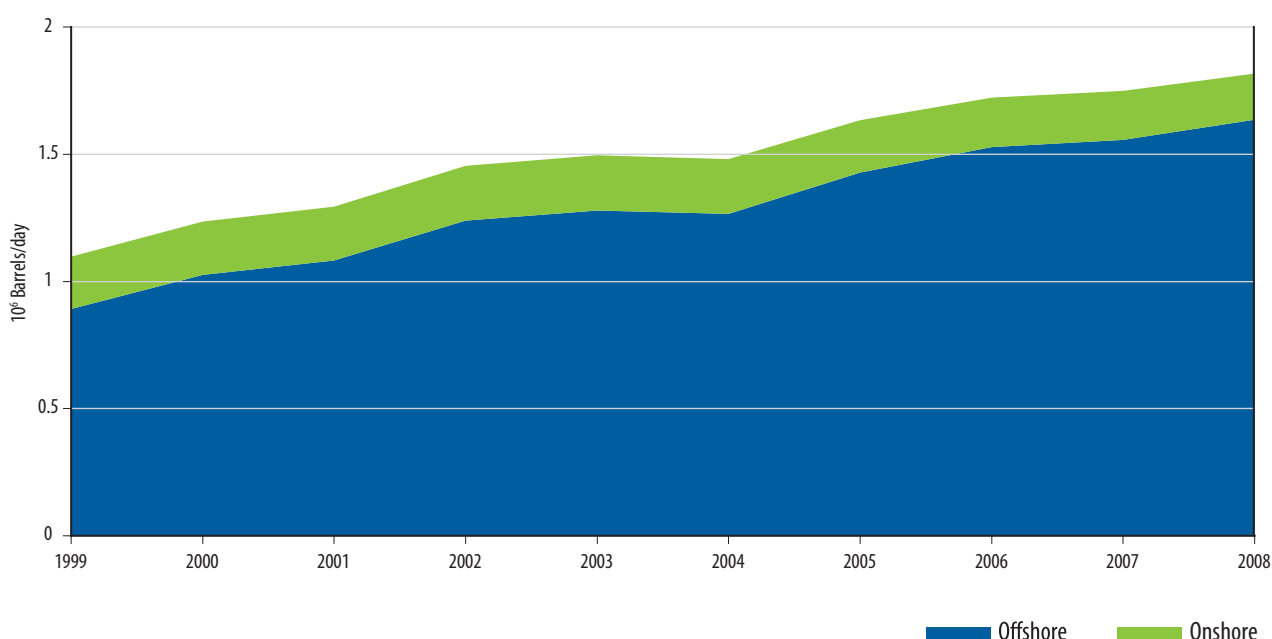
Table 1.3 - Oil production, per location (onshore and offshore), by State – 1999-2008

State	Location	Oil production (10 <sup>3</sup> Barrels)										08/07 %
		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>		<b>400,782</b>	<b>450,626</b>	<b>471,862</b>	<b>530,855</b>	<b>546,080</b>	<b>540,717</b>	<b>596,255</b>	<b>628,797</b>	<b>638,018</b>	<b>663,275</b>	<b>3.96</b>
<b>Subtotal</b>	<b>Onshore</b>	<b>75,210</b>	<b>76,316</b>	<b>77,170</b>	<b>78,952</b>	<b>79,738</b>	<b>78,632</b>	<b>74,962</b>	<b>70,841</b>	<b>69,893</b>	<b>66,337</b>	<b>-5.09</b>
	<b>Offshore</b>	<b>325,572</b>	<b>374,310</b>	<b>394,692</b>	<b>451,902</b>	<b>466,342</b>	<b>462,085</b>	<b>521,292</b>	<b>557,957</b>	<b>568,126</b>	<b>596,938</b>	<b>5.07</b>
Amazonas	Onshore	12,423	15,773	15,743	15,914	15,410	15,541	14,376	13,062	12,276	11,657	-5.04
Ceará	Onshore	1,083	849	893	828	997	806	593	559	668	699	4.61
	Offshore	4,098	4,027	4,705	4,207	4,419	4,176	3,796	3,250	3,098	2,788	-10.00
Rio Grande do Norte	Onshore	30,209	27,340	25,817	25,038	24,658	24,774	23,031	20,435	19,676	19,208	-2.38
	Offshore	4,239	4,417	3,768	3,810	3,917	4,319	4,153	3,731	3,141	3,124	-0.54
Alagoas	Onshore	1,746	2,035	2,108	2,446	2,586	2,477	2,572	2,935	2,897	2,139	-26.18
	Offshore	258	272	298	277	190	196	186	162	126	109	-13.81
Sergipe	Onshore	8,740	8,904	9,212	9,681	10,840	11,433	11,909	12,044	12,889	12,371	-4.02
	Offshore	5,079	4,564	3,860	3,251	2,650	2,530	2,307	2,300	2,404	4,823	100.60
Bahia	Onshore	17,164	16,848	16,310	16,061	16,064	16,324	16,144	15,703	15,525	15,156	-2.37
	Offshore	-	11	-	-	-	-	-	-	134	284	111.59
Espírito Santo	Onshore	3,846	4,568	7,087	8,984	9,183	7,278	6,338	6,103	5,963	5,108	-14.34
	Offshore	148	99	62	1,138	6,617	4,407	5,945	16,759	36,197	37,133	2.59
Rio de Janeiro	Offshore	308,892	358,751	380,466	438,292	446,238	443,156	501,772	529,627	520,922	547,348	5.07
São Paulo	Offshore	963	566	559	578	534	509	514	457	724	302	-58.35
Paraná	Offshore	1,894	1,603	974	349	1,777	2,793	2,619	1,670	1,380	1,029	-25.43

Source: ANP/SDP, as per Decree n° 2705/1998.

Note: Condensate included.

Figure 1.3 - Oil production, by location (onshore and offshore) 1999 - 2008



Source: ANP/SDP (Table 1.3).

Note: Condensate included.

**Table 1.4 - NGL production, by State – 1999-2008**

State	NGL production (10 <sup>3</sup> Barrels)										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>10,903</b>	<b>13,115</b>	<b>14,666</b>	<b>16,422</b>	<b>20,549</b>	<b>22,457</b>	<b>28,943</b>	<b>31,532</b>	<b>30,903</b>	<b>31,628</b>	<b>2.34</b>
Amazonas	646	2,234	4,557	4,406	5,267	5,573	6,245	6,405	6,894	6,983	1.30
Ceará	168	146	124	181	195	194	170	144	87	90	4.13
Rio Grande do Norte	1,739	2,049	1,924	2,561	2,549	2,977	2,946	2,785	2,763	2,442	-11.64
Alagoas	-	-	-	-	320,88	795	857	768	682	612	-10.24
Sergipe	1,913	1,908	1,882	1,888	1,791	1,841	1,855	1,777	1,726	1,635	-5.25
Bahia	2,253	2,324	2,399	2,224	2,530	2,595	2,670	2,682	2,276	2,199	-3.38
Espírito Santo	59	77	74	65	64	87	87	59	71	253	254.50
Rio de Janeiro	4,125	4,376	3,706	5,097	7,832	8,396	14,113	16,912	16,403	17,412	6.15

Source: ANP/SDP, as per Decree nº 2705/1998.

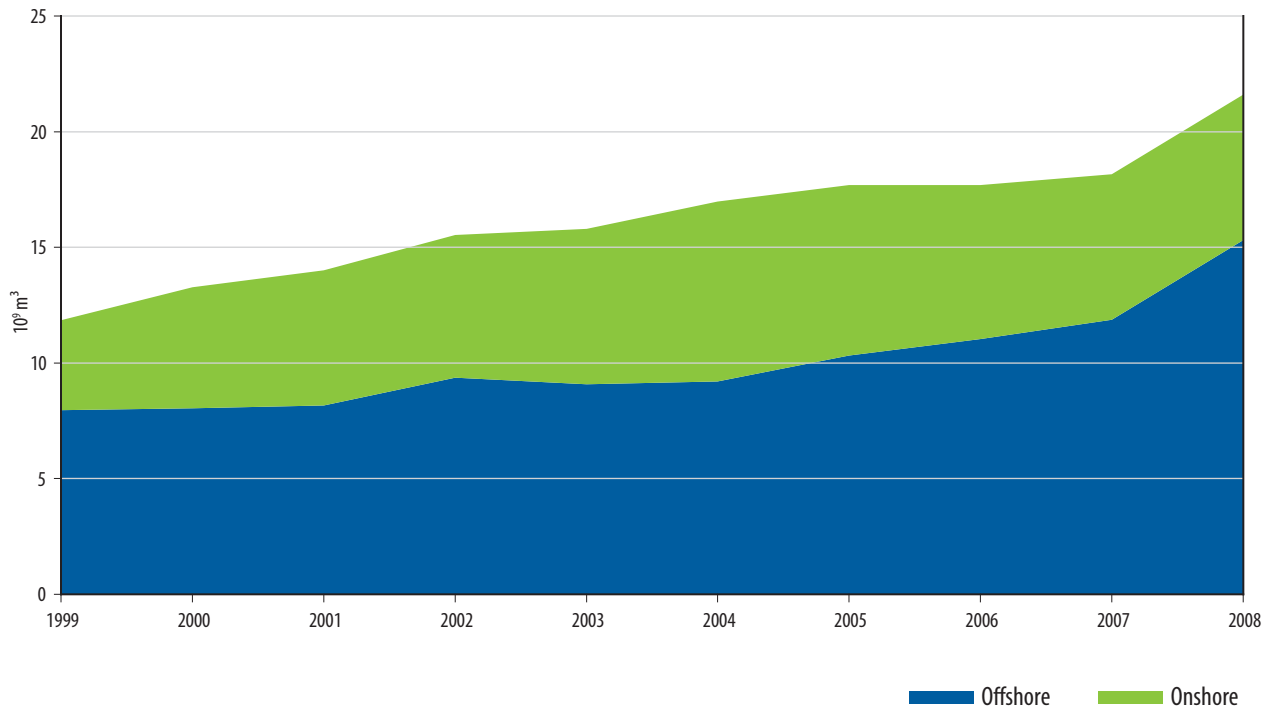
Note: Condensate not included. GLP e C<sub>3</sub><sup>+</sup> included, as per Ordinance ANP nº 9/2000.

**Table 1.5 - Natural gas production, per location (onshore and offshore), by State – 1999-2008**

State	Location	Natural gas production (10 <sup>6</sup> m <sup>3</sup> )										08/07 %
		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>		<b>11,855.2</b>	<b>13,282.9</b>	<b>13,998.8</b>	<b>15,525.2</b>	<b>15,792.1</b>	<b>16,971.2</b>	<b>17,699.2</b>	<b>17,706.2</b>	<b>18,151.7</b>	<b>21,592.7</b>	<b>18.96</b>
<b>Subtotal</b>	<b>Onshore</b>	<b>3,896.9</b>	<b>5,232.6</b>	<b>5,827.5</b>	<b>6,168.6</b>	<b>6,708.6</b>	<b>7,765.5</b>	<b>7,375.3</b>	<b>6,682.1</b>	<b>6,282.9</b>	<b>6,273.1</b>	<b>-0.16</b>
	<b>Offshore</b>	<b>7,958.3</b>	<b>8,050.3</b>	<b>8,171.3</b>	<b>9,356.5</b>	<b>9,083.4</b>	<b>9,205.7</b>	<b>10,323.9</b>	<b>11,024.1</b>	<b>11,868.7</b>	<b>15,319.6</b>	<b>29.07</b>
Amazonas	Onshore	734.2	2,000.2	2,427.3	2,743.2	2,992.6	3,620.8	3,567.2	3,376.3	3,546.1	3,732.6	5.26
	Offshore	1.0	0.8	0.7	0.7	0.8	0.6	0.5	0.5	0.6	0.6	-6.82
Ceará	Onshore	122.4	99.3	92.2	109.6	99.3	125.4	110.6	98.9	77.4	65.8	-15.05
	Offshore	350.4	390.3	394.5	356.8	301.6	333.5	296.0	266.1	313.9	317.8	1.23
Rio Grande do Norte	Onshore	699.5	874.9	803.1	1,003.5	967.3	1,032.1	1,020.5	914.5	765.0	609.8	-20.29
	Offshore	588.3	571.6	599.7	632.6	783.3	1,042.2	999.5	878.6	765.4	685.7	-10.40
Alagoas	Onshore	161.7	166.7	163.2	149.2	134.6	144.9	169.1	144.1	141.0	128.2	-9.05
	Offshore	59.7	58.6	59.3	59.6	66.2	76.3	79.0	84.2	93.2	91.2	-2.10
Sergipe	Onshore	806.4	815.0	752.5	741.9	666.3	601.2	538.7	525.2	453.9	766.5	68.89
	Offshore	1,860.3	1,895.9	1,958.1	1,964.2	2,115.7	2,218.4	1,959.1	1,878.1	1,480.0	1,285.4	-13.15
Bahia	Onshore	-	0.0	8.5	52.6	50.2	38.2	25.2	16.3	1,166.3	2,079.5	78.30
	Offshore	303.1	315.2	387.8	411.7	448.4	473.7	474.0	198.2	83.7	159.7	90.83
Espírito Santo	Onshore	2.7	2.0	1.1	9.8	60.9	36.1	45.1	711.5	881.7	2,642.4	199.71
	Offshore	5,528.3	5,721.0	5,968.3	6,886.3	6,660.2	6,779.1	7,967.2	8,217.7	8,025.1	8,763.3	9.20
Rio de Janeiro	Offshore	559.0	324.1	344.0	394.2	388.2	383.4	379.7	357.0	324.1	242.1	-25.32
São Paulo	Offshore	78.4	47.2	38.3	9.4	56.4	65.2	67.7	39.0	34.3	21.9	-36.11
Paraná	Offshore											

Source: ANP/SDP, as per Decree nº 2705/1998.

Note: Total production includes reinjection, flared gas, losses and own consumption.

**Figure 1.4** - Natural gas production, per location (onshore and offshore) – 1999-2008

Source: ANP/SDP (Table 1.5).

Note: Total value of production includes reinjection, flared gas, losses, own consumption and condensed gas in NGL form.

## REFINING AND PROCESSING

## 1.4 Oil Refining

Table 1.6 - Refining capacity, by refinery – 1999-2008

Refinery (State)	Refining capacity (m <sup>3</sup> /day)									
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>Total<sup>1</sup></b>	<b>300,500</b>	<b>309,500</b>	<b>309,500</b>	<b>310,200</b>	<b>320,550</b>	<b>320,550</b>	<b>320,650</b>	<b>320,650</b>	<b>323,750</b>	<b>325,050</b>
Ipiranga (RS)	2,000	2,000	2,000	2,700	2,700	2,700	2,700	2,700	2,700	2,200
Lubnor (CE)	1,000	1,000	1,000	1,000	1,000	1,000	1,100	1,100	1,100	1,300
Manguinhos (RJ)	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Recap(SP)	7,000	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500
Reduc (RJ)	36,000	38,500	38,500	38,500	38,500	38,500	38,500	38,500	38,500	38,500
Refap (RS)	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Regap (MG)	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Reman (AM)	2,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300
Repar (PR)	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	32,000	35,000
Replan (SP)	56,000	56,000	56,000	56,000	58,000	58,000	58,000	58,000	58,000	61,000
Revap (SP)	36,000	36,000	36,000	36,000	40,000	40,000	40,000	40,000	40,000	40,000
RLAM (BA) <sup>2</sup>	47,000	47,000	47,000	47,000	51,350	51,350	51,350	51,350	51,350	46,950
RPBC (SP)	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000
Univen (SP)	-	-	-	-	-	-	-	-	1,100	1,100
<b>Total<sup>3</sup> (m<sup>3</sup>/calendarly-day)</b>	<b>285,475</b>	<b>294,025</b>	<b>294,025</b>	<b>294,690</b>	<b>304,523</b>	<b>304,523</b>	<b>304,618</b>	<b>304,618</b>	<b>307,563</b>	<b>308,798</b>
<b>Utilization factor<sup>4</sup> (%)</b>	<b>82.4</b>	<b>87.4</b>	<b>90.0</b>	<b>88.0</b>	<b>84.4</b>	<b>90.6</b>	<b>90.5</b>	<b>90.9</b>	<b>91.9</b>	<b>90.7</b>

Source: ANP/SRP, as per Ordinance ANP nº 28/1999.

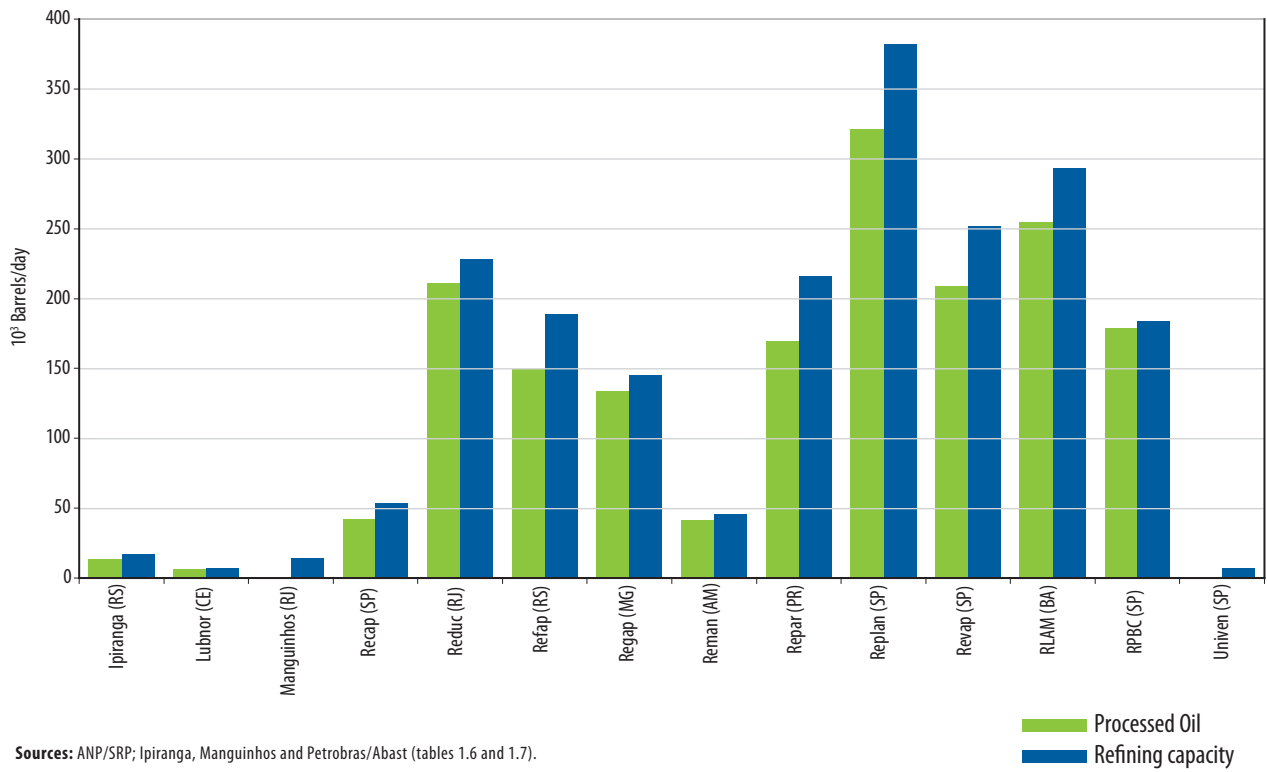
<sup>1</sup> Nominal refining capacity in m<sup>3</sup>/day. <sup>2</sup> RLAM has an asphalt production plant with 600 m<sup>3</sup>/day capacity. <sup>3</sup> Calendar-day refining capacity, considering a 95% mean utilization factor. <sup>4</sup> Refining utilization factor, considering the volume of processed oil within a year.

Table 1.7 - Volume of processed oil, per origin (domestic and imported), by refinery – 2008

Refinery (State)	Volume of processed oil (barrels/day)			
	Total	Oil		NGL <sup>3</sup>
		Domestic <sup>1</sup>	Imported <sup>2</sup>	
<b>Total</b>	<b>1,762,032</b>	<b>1,333,785</b>	<b>394,224</b>	<b>34,023</b>
Ipiranga (RS)	7,836	2,741	4,562	533
Lubnor (CE)	6,191	6,175	-	16
Manguinhos (RJ)	-	-	-	-
Recap (SP)	45,149	32,097	12,850	203
Reduc (RJ)	222,514	120,493	96,795	5,227
Refap (RS)	145,860	53,167	88,485	4,208
Regap (MG)	146,819	133,297	9,792	3,730
Reman (AM)	39,671	39,470	0	201
Repar (PR)	185,361	112,625	70,623	2,113
Replan (SP)	329,485	271,693	52,510	5,282
Revap (SP)	209,598	173,020	31,463	5,115
RLAM (BA)	254,810	239,552	8,314	6,945
RPBC (SP)	168,464	149,181	18,831	452
Univen (SP)	275	275	-	-

Sources: Ipiranga; Manguinhos; Petrobras/Abast.

<sup>1</sup> Oil, condensate and C<sub>5</sub><sup>+</sup> included. <sup>2</sup> Oil and condensate included. <sup>3</sup> Include oil and oil products residues which are reprocessed in the atmospheric distillation units together with oil and condensate.

**Figure 1.5** - Volume of refined oil and refining capacity, per refinery - 2008

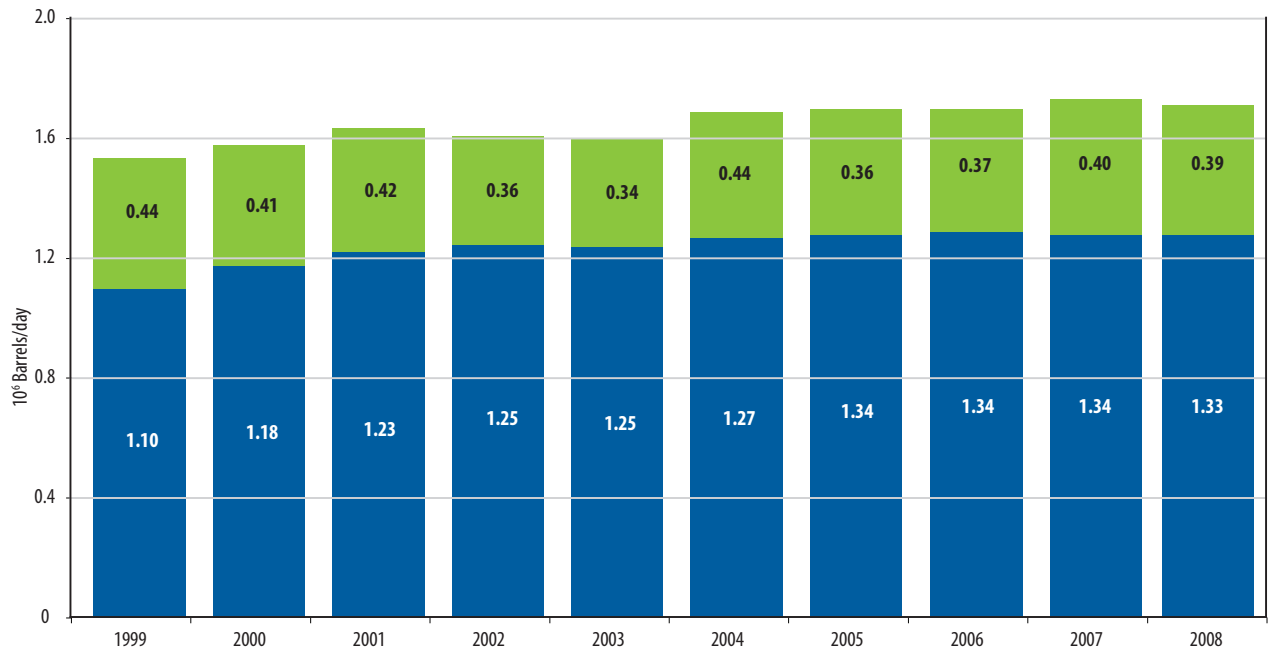
Sources: ANP/SRP; Ipiranga, Manguinhos and Petrobras/Abast (tables 1.6 and 1.7).

**Table 1.8** - Volume of processed oil<sup>1</sup>, per origin (domestic and imported) and by country – 1999-2008

Region and countries	Volume of processed oil (barrels/day)										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>1,572,786</b>	<b>1,611,649</b>	<b>1,663,945</b>	<b>1,631,651</b>	<b>1,616,200</b>	<b>1,729,874</b>	<b>1,734,197</b>	<b>1,740,911</b>	<b>1,772,170</b>	<b>1,762,032</b>	<b>-0.57</b>
<b>Other feeds<sup>2</sup></b>	<b>26,225</b>	<b>23,084</b>	<b>17,764</b>	<b>24,656</b>	<b>18,927</b>	<b>24,671</b>	<b>31,210</b>	<b>36,038</b>	<b>27,294</b>	<b>34,023</b>	<b>24.65</b>
<b>Oil<sup>1</sup></b>	<b>1,546,561</b>	<b>1,588,565</b>	<b>1,646,181</b>	<b>1,606,995</b>	<b>1,597,273</b>	<b>1,705,204</b>	<b>1,702,987</b>	<b>1,704,873</b>	<b>1,744,875</b>	<b>1,728,009</b>	<b>-0.97</b>
<b>Domestic<sup>3</sup></b>	<b>1,101,644</b>	<b>1,176,882</b>	<b>1,225,140</b>	<b>1,246,548</b>	<b>1,253,836</b>	<b>1,268,190</b>	<b>1,338,231</b>	<b>1,339,602</b>	<b>1,343,160</b>	<b>1,333,785</b>	<b>-0.70</b>
<b>Imported<sup>4</sup></b>	<b>444,917</b>	<b>411,683</b>	<b>421,041</b>	<b>360,447</b>	<b>343,437</b>	<b>437,013</b>	<b>364,756</b>	<b>365,271</b>	<b>401,716</b>	<b>394,224</b>	<b>-1.86</b>
<b>Central and South America</b>	<b>116,988</b>	<b>160,642</b>	<b>91,448</b>	<b>54,086</b>	<b>24,140</b>	<b>21,159</b>	<b>17,412</b>	<b>8,075</b>	<b>6,893</b>	<b>6,436</b>	<b>-6.63</b>
Argentina	72,813	106,933	52,871	36,168	14,012	8,985	4,602	875	787	0	-99.99
Bolivia	-	1,202	9,977	6,652	9,547	6,176	8,726	6,678	2,231	2,974	33.30
Colombia	8,071	21,378	1,733	-	-	1,416	-	-	3,875	3,462	-10.67
Ecuador	-	-	-	-	-	4,134	4,085	522	-	-	-
Venezuela	36,104	31,129	26,867	11,266	580	449	0	-	-	-	-
<b>Europe</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5,186</b>	<b>882</b>	<b>12,484</b>	<b>2,895</b>	<b>1,518</b>	<b>3,675</b>	<b>142.05</b>
Norway	-	-	-	-	5,186	118	-	-	-	-	-
United Kingdom	-	-	-	-	-	764	12,484	2,895	1,518	3,675	142.05
<b>Former Sovietic Union</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7,537</b>	<b>446</b>	<b>-</b>	<b>-</b>	<b>2,742</b>	<b>12,380</b>	<b>7</b>	<b>-99.94</b>
Azerbaijan	-	-	-	-	-	-	-	2,742	11,306	7	-99.94
Kazakhstan	-	-	-	4,876	446	-	-	-	-	-	-
Russia	-	-	-	2,661	-	-	-	-	1,074	-	-
<b>Middle East</b>	<b>104,971</b>	<b>90,569</b>	<b>91,455</b>	<b>92,573</b>	<b>100,438</b>	<b>97,633</b>	<b>100,756</b>	<b>94,179</b>	<b>89,337</b>	<b>91,153</b>	<b>2.03</b>
Saudi Arabia	82,398	56,032	69,726	62,561	69,602	62,370	64,909	66,626	55,054	58,523	6.30
United Arab Emirates	-	3,626	-	-	-	-	-	-	-	-	-
Yemen	-	3,529	4,108	-	-	-	-	-	-	-	-
Iran	5,934	-	-	-	724	-	-	-	-	-	-
Iraq	15,569	27,370	17,621	30,011	30,112	35,263	35,848	27,553	34,283	32,630	-4.82
Syria	1,070	11	-	-	-	-	-	-	-	-	-
<b>Africa</b>	<b>222,939</b>	<b>158,885</b>	<b>238,137</b>	<b>206,251</b>	<b>210,400</b>	<b>315,440</b>	<b>234,102</b>	<b>257,379</b>	<b>291,587</b>	<b>292,463</b>	<b>0.30</b>
South Africa	-	-	-	1,099	5	-	-	-	-	-	-
Angola	-	-	14,215	306	-	-	4,211	20,376	33,213	53,326	60.56
Algeria	114,998	99,678	87,765	76,569	66,454	82,467	98,972	50,583	30,395	36,555	20.27
Cameroon	-	-	-	-	-	-	-	-	-	-	-
Congo (Brazzaville)	-	5,418	6,315	4,765	5,011	-	2,768	17,731	11,521	3	-99.98
Gabon	-	-	6,104	5,618	19	-	-	-	-	-	-
Ghana	-	-	-	-	-	152	83	-	-	-	-
Ecuatorial Guinea	-	-	-	-	-	-	-	-	5,343	9,036	69.13
Libya	5,170	2	-	-	-	-	-	7,305	36,152	33,029	-8.64
Nigeria	102,771	53,787	123,738	117,894	138,911	232,821	128,069	161,384	174,964	160,514	-8.26
<b>Asia-Pacific</b>	<b>19</b>	<b>1,588</b>	<b>-</b>	<b>-</b>	<b>2,828</b>	<b>1,899</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>489</b>	<b>-</b>
Australia	19	1,588	-	-	2,828	1,899	-	-	-	489	-
Indonesia	-	-	-	-	-	-	-	-	-	-	-

Sources: Ipiranga, Manguinhos, Univen and Petrobras/Abast, from 2001 and ANP/SPP, as per Ordinance CNP n° 348/1982, for former years.

<sup>1</sup>Refers to crude oil feed which is processed in primary distillation units. <sup>2</sup>Oil and oil products residuals included, as well as residuals from terminals which are reprocessed together with oil and condensate feeds in atmospheric distillation units. <sup>3</sup>Oil, condensate and C<sub>5</sub><sup>+</sup> included. <sup>4</sup>Oil and condensate included.

**Figure 1.6** - Volume of processed oil, per origin (domestic and imported) - 1999-2008

Sources: ANP/SPP; Ipiranga, Univen, Manguinhos and Petrobras/Abast (Table 1.8).  
<sup>1</sup>Oil, condensed and C<sub>5</sub><sup>+</sup> included. <sup>2</sup>Oil and condensate included.

■ Domestic <sup>1</sup>  
 ■ Imported <sup>2</sup>



## 1.5 Production of Oil Products

**Table 1.9** - Production of energy and non-energy oil products – 1999-2008

Oil products	Production (10 <sup>3</sup> m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>92,243</b>	<b>94,041</b>	<b>99,191</b>	<b>96,845</b>	<b>97,778</b>	<b>103,285</b>	<b>104,749</b>	<b>105,849</b>	<b>108,764</b>	<b>108,501</b>	<b>-0.24</b>
<b>Energy oil products</b>	<b>76,570</b>	<b>77,681</b>	<b>83,486</b>	<b>81,909</b>	<b>82,737</b>	<b>88,176</b>	<b>89,300</b>	<b>90,038</b>	<b>91,639</b>	<b>91,759</b>	<b>0.13</b>
Gasoline A	18,364	18,576	19,930	19,407	18,537	18,583	19,978	21,325	21,599	21,042	-2.58
Aviation gasoline	96	85	93	71	72	80	70	65	62	68	9.32
LPG <sup>1</sup>	7,296	8,134	8,788	9,100	10,076	10,361	11,481	10,932	11,244	11,206	-0.34
Fuel oil <sup>2,3</sup>	15,558	16,066	17,525	16,360	15,685	16,497	15,075	15,112	15,390	14,962	-2.78
Diesel Oil <sup>3</sup>	31,447	30,780	33,078	32,991	34,153	38,252	38,396	38,660	39,089	40,649	3.99
Jet fuel	3,722	3,744	3,714	3,625	3,792	4,142	4,118	3,748	4,026	3,793	-5.78
Lamp oil	86	200	228	227	193	113	50	38	25	23	-7.25
Others <sup>4</sup>	-	94	130	128	230	147	130	159	205	16	-92.10
<b>Non-energy oil products</b>	<b>15,674</b>	<b>16,360</b>	<b>15,705</b>	<b>14,936</b>	<b>15,041</b>	<b>15,108</b>	<b>15,449</b>	<b>15,810</b>	<b>17,125</b>	<b>16,743</b>	<b>-2.23</b>
Asphalt	1,551	1,764	1,628	1,664	1,135	1,415	1,420	1,865	1,680	2,126	26.54
Coke <sup>5</sup>	1,359	1,958	1,793	1,817	1,781	1,739	2,395	2,373	2,563	2,811	9.68
Naphtha <sup>6</sup>	9,981	10,182	9,913	8,794	8,952	8,744	8,498	8,626	9,245	8,134	-12.01
Lubricating oil	743	916	837	804	807	760	732	715	645	756	17.23
Paraffin	161	152	120	136	133	144	140	134	130	130	0.33
Solvent	481	515	618	685	991	1,081	827	609	580	479	-17.49
Others <sup>7</sup>	1,397	875	796	1,036	1,242	1,226	1,437	1,488	2,282	2,306	1.08

**Sources:** Ipiranga, Manguinhos, Univen and Petrobras/Abast for refineries since 2001 and ANP/SPP, as per Ordinance CNP nº 348/1982, for previous years. ANP/SRP, as per Ordinance nº 54/2001, for petrochemical plants for year 2001. Petrobras/Abast for years 1999 and 2000. Petrobras/Unidade de Negócios Gás Natural for NGPPs since 2001. Petrobras/Abast for years 1999 e 2000. ANP/SRP, as per Ordinance nº 54/2001, for other producers.

**Notes:** 1. Includes refineries, petrochemical plants, NGPPs and other producers production. Does not include shale plants production, except naphtha (see specific note 6)

2. Oil products own consumption of production plants not included

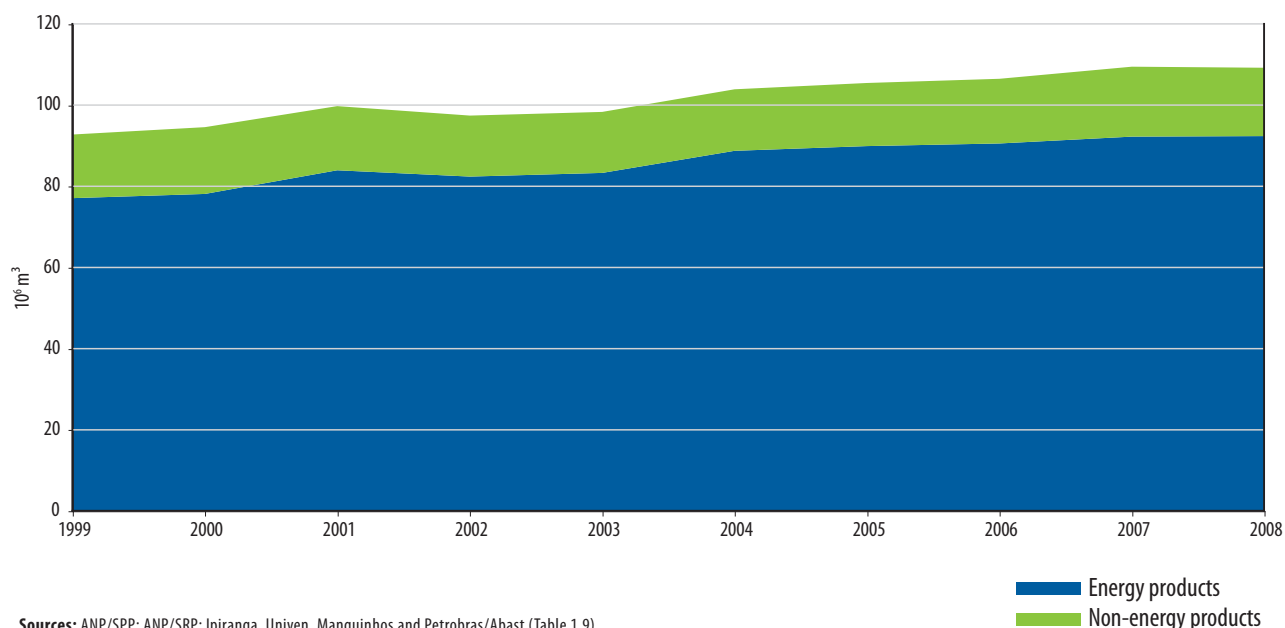
3. Fuel gas production of refineries not included.

<sup>1</sup>Refers to propane/butane mixtures for household and industrial uses. <sup>2</sup>Refinery fuel oil not included. <sup>3</sup>Components intended to marine diesel oil production in some waterway/marine terminals included.

<sup>4</sup>Light oil for power generation included. <sup>5</sup>Coke for energy uses included. <sup>6</sup>Naphtha produced from shale processing included. That naphtha is then used as raw material for oil products production at Repar.

<sup>7</sup>Diluents, non-energy residues, non-energy LPG and other non-energy products included.

**Figure 1.7** - Production of energy and non-energy oil products – 1999-2008



**Sources:** ANP/SPP; ANP/SRP; Ipiranga, Univen, Manguinhos and Petrobras/Abast (Table 1.9).

**Notes:** 1. Production of refineries and petrochemical plants included, as well as the ones of NGPPs and other producers. Production of shale processing plant not included.

2. Own consumption of producing plants included.

3. Fuel gas from refineries and shale producing plant.

## 1.6 Natural Gas Processing

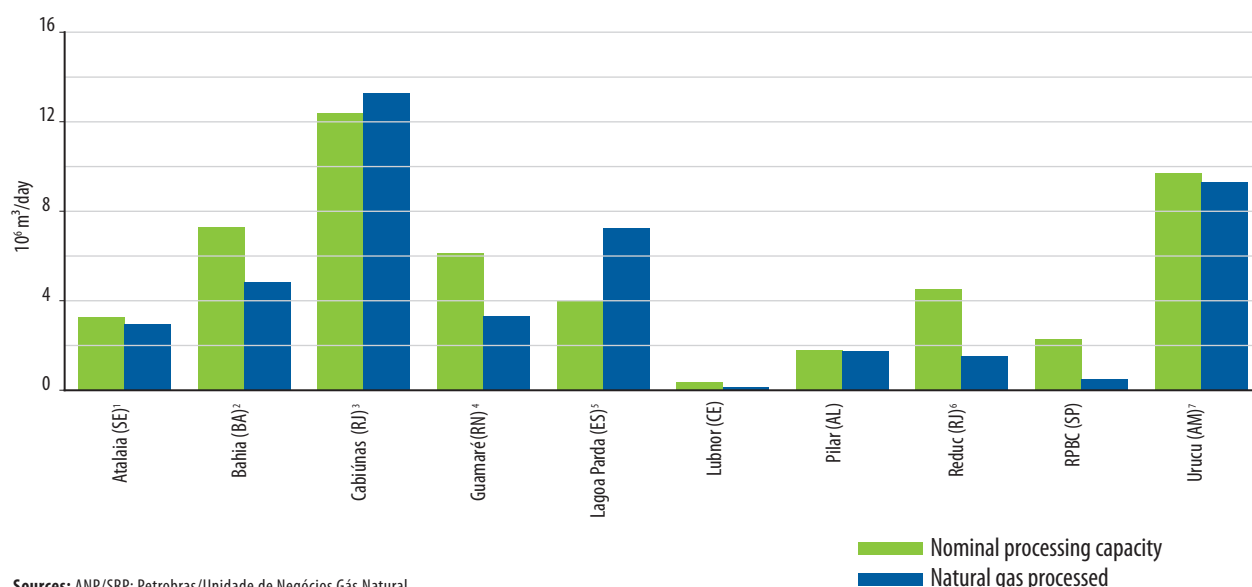
Table 1.10 - Production of dry natural gas, LPG, C<sub>5</sub><sup>+</sup> and ethane in Natural Gas Processing Plants – 1999-2008

Products	Production of dry natural gas, LPG, C <sub>5</sub> <sup>+</sup> and ethane in Natural Gas Processing Plants (10 <sup>3</sup> m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Dry natural gas <sup>1,2</sup>	5,854,256	7,478,602	7,912,049	8,591,539	10,527,258	11,810,761	12,538,167	12,722,170	12,055,517	15,207,091	26.14
Ethane <sup>1</sup>	-	-	-	-	-	-	138,203	169,360	183,471	222,324	21.18
Líquids <sup>3</sup>	1,763	2,401	2,443	2,535	3,411	3,597	3,531	3,580	3,607	3,824	6.03
GLP <sup>4</sup>	1,301	1,853	1,877	1,968	2,563	2,574	2,855	2,876	2,926	3,100	5.96
C <sub>5</sub> <sup>+</sup> <sup>4,5</sup>	462	548	566	567	848	1,023	677	704	681	724	6.32

Sources: Petrobras/Unidade de Negócios Gás Natural, from 2001; Petrobras/Abast, for 1999 and 2000.

<sup>1</sup>Volumes in gaseous state. <sup>2</sup>All produced dry gas from Urucu is reinjected. <sup>3</sup>Líquids refers to the sum of GLP e C<sub>5</sub><sup>+</sup> volumes. <sup>4</sup>Volumes in gaseous state. <sup>5</sup>C<sub>5</sub><sup>+</sup> volumes from Bahia, Catu and Candeias NGPPs are mixed to naphtha produced in RLAM; C<sub>5</sub><sup>+</sup> volumes from Reduc I and II NGPPs are mixed to the naphtha produced in Reduc. C<sub>5</sub><sup>+</sup> volumes from Lubnor are mixed to solvents C<sub>5</sub><sup>+</sup> volumes are accounted to naphtha production of the respective refineries. In the other refineries, C<sub>5</sub><sup>+</sup> is added to oil volumes.

Figure 1.8 - Volume of natural gas processed and processing capacity, per NGPP – 2008



Sources: ANP/SRP; Petrobras/Unidade de Negócios Gás Natural

<sup>1</sup>Atalaia and Carmópolis NGPPs included. <sup>2</sup>Catu, Candeias and Bahia NGPPs included. <sup>3</sup>Cabiúnas NGCPP, NGPP, NGRP and LRPs included. <sup>4</sup>Guamaré I, II and III NGPPs included. <sup>5</sup>Lagoa Parda NGPP and DPP included, as well as Cacimbas DPP and NGCPP. <sup>6</sup>Reduc I and II NGPPs included. <sup>7</sup>Urucu I, II and III NGPPs included.

## SHALE INDUSTRIALIZATION

## 1.7 Shale Industrialization

Table 1.11 - Volume of processed shale and production of shale products – 1999-2008

Specification	Unit	Volume of processed shale and production of shale products										08/07 %
		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Processed shale</b>	<b>t</b>	<b>2,665,404</b>	<b>2,676,432</b>	<b>2,787,911</b>	<b>2,452,137</b>	<b>2,165,610</b>	<b>2,414,326</b>	<b>1,969,652</b>	<b>2,242,079</b>	<b>2,343,086</b>	<b>2,014,885</b>	<b>-14.01</b>
<b>Products</b>												
<b>Energy</b>												
Shale gas <sup>1,2</sup>	t	8,214	10,853	11,977	14,379	13,326	14,855	13,936	15,619	18,756	13,087	-30.22
LPG <sup>3,4</sup>	m <sup>3</sup>	27,708	25,485	27,560	16,028	21,535	24,607	20,079	20,958	23,624	18,529	-21.57
Fuel oil <sup>4</sup>	m <sup>3</sup>	65,848	123,035	119,036	127,461	98,710	121,068	104,385	107,944	102,544	155,691	51.83
<b>Non-energy</b>												
Naphtha <sup>5</sup>	m <sup>3</sup>	39,000	39,400	40,088	39,108	40,450	39,694	34,552	44,632	48,083	37,725	-21.54
Others <sup>6</sup>	m <sup>3</sup>	-	-	14,722	12,155	14,172	16,045	12,097	13,623	4,012	2,349	-41.45

Source: Petrobras/SIX.

Notes: 1. Information prior to 1998 unavailable due to the impossibility of compiling reliable data for that period

2. Own consumption of shale products, except shale gas, not included (see specific note 1 below).

<sup>1</sup>Own consumption included. <sup>2</sup>Direct sales to consumers. <sup>3</sup>Propane and butane included. <sup>4</sup>Sales to distributors. <sup>5</sup>Naphtha production is sent to Repar, where is used as raw material in the production of oil products. <sup>6</sup>Other non-energy oil products of lesser importance included.

## TRANSPORTATION OF OIL, ITS PRODUCTS AND NATURAL GAS

## 1.8 Terminals

Table 1.12 - Storage capacity of oil, oil products and ethanol, by terminal, on 12/31/2008 (continue)

Type, location and operator (State)	Storage capacity of oil, oil products and ethanol				
	Number of tanks	Nominal capacity (m <sup>3</sup> )			
		Oil	Oil products (excluding LPG)	LPG	Total
<b>Total</b>	<b>1,653</b>	<b>5,448,394</b>	<b>6,028,607</b>	<b>329,168</b>	<b>11,806,169</b>
<b>Ethanol Collecting Center</b>	<b>21</b>	<b>-</b>	<b>105,000</b>	<b>-</b>	<b>105,000</b>
Aracaju (SE) - Petrobras	2	-	10,000	-	10,000
Araraquara (SP) - Petrobras	2	-	10,000	-	10,000
Bauru (SP) - Petrobras	2	-	10,000	-	10,000
Brasília (DF) - Petrobras	3	-	15,000	-	15,000
Campos (RJ) - Petrobras	2	-	10,000	-	10,000
Londrina (PR) - Petrobras	2	-	10,000	-	10,000
Ourinhos (SP) - Petrobras	4	-	20,000	-	20,000
Santa Adélia (SP) - Petrobras	2	-	10,000	-	10,000
Sertãozinho (SP) - Petrobras	2	-	10,000	-	10,000
<b>Waterway terminals</b>	<b>1,255</b>	<b>3,987,930</b>	<b>3,981,124</b>	<b>241,628</b>	<b>8,210,682</b>
Alemoa (SP) - Transpetro	26	-	263,134	83,002	346,136
Alemoa (SP) - União	92	-	72,350	-	72,350
Alemoa (SP) - Vopak	40	-	44,705	-	44,705
Almirante Barroso S. Sebastião (SP) - Transpetro	36	1,585,345	426,326	-	2,011,671
Almirante Tamandaré Ilha d'Água (RJ) - Transpetro	18	-	165,066	-	165,066
Aratu (BA) - Tequimar	74	-	156,200	-	156,200
Aratu (BA) - Vopak	45	-	59,710	-	59,710
Cabedelo (PB) - Tecab	2	-	17,889	-	17,889
Cabedelo (PB) - Transpetro	4	-	10,022	-	10,022
Canoas (RS) Liqueigás <sup>1</sup>	-	-	-	-	-
Canoas (RS) - Supergasbras <sup>1</sup>	-	-	-	-	-
Canoas (RS) - Transpetro	5	-	17,089	-	17,089
Carmópolis (SE) - Transpetro	5	160,239	-	-	160,239
Coari (AM) - Transpetro	13	60,000	275	19,551	79,826
Dunas (RN) - Transpetro	6	-	26,642	-	26,642
Guamaré (RN) - Transpetro	7	190,142	-	-	190,142
Ilha Barnabé (SP) - Copape	6	-	50,459	-	50,459
Ilha Barnabé (SP) - Granel	82	-	86,400	-	86,400
Ilha Barnabé (SP) - Vopak	66	-	47,777	-	47,777
Ilha Grande (RJ) - Transpetro	14	870,000	66,200	-	936,200
Ilha Redonda (RJ) - Transpetro	5	-	-	35,614	35,614
Itajaí (SC) - Liqueigás <sup>1</sup>	-	-	-	-	-
Itajaí (SC) - Transpetro	13	-	50,113	6,534	56,647
Itaquí (MA) - Granel	25	-	52,503	-	52,503
Itaquí (MA) - Transpetro	9	-	71,290	4,800	76,090
Ladario (MS) - Granel	6	-	8,052	-	8,052
Maceió (AL) - Transpetro	14	26,155	30,049	-	56,204
Madre de Deus (BA) - Transpetro	47	-	604,079	52,611	656,690
Manaus (AM) Reman - Transpetro <sup>2</sup>	-	-	-	-	-
Miramar (PA) - Transpetro	6	-	37,899	6,360	44,259
Osório (RS) - Copesul	4	-	164,000	-	164,000
Osório (Tramandaí-RS) - Transpetro	16	509,000	192,159	-	701,159
Paranaguá (PR) - Cattalini	40	-	153,155	-	153,155
Paranaguá (PR) - Transpetro	34	-	174,008	9,600	183,608
Porto Velho (RO) - Fogás <sup>3</sup>	-	-	-	-	-
Refinaria de Manguinhos (RJ) <sup>4</sup>	-	-	-	-	-
Regência (ES) - Transpetro	4	42,427	-	-	42,427
Rio de Janeiro - Caju (RJ) - União	24	-	17,245	-	17,245
Rio de Janeiro - Ilha do Governador (RJ) - Esso	68	-	37,073	-	37,073
Rio de Janeiro - Ilha do Governador (RJ) - ExxonMobil	37	-	55,072	-	55,072
Rio de Janeiro - Suzano Petroquímica S.A	-	-	-	-	-
Rio Grande (RS) - Copesul	32	-	36,800	2,616	39,416
Rio Grande (RS) - Granel	16	-	29,600	-	29,600
Rio Grande (RS) - Transpetro <sup>5</sup>	16	-	61,239	-	61,239
São Mateus (ES) - Transpetro	5	78,000	-	-	78,000
Santa Clara (RS) - Copesul <sup>6</sup>	5	-	19,000	-	19,000
Santarém (PA) - Fogás <sup>1</sup>	-	-	-	-	-
Santos (SP) - Tequimar TIS	33	-	78,469	-	78,469
Santos (SP) - Ageo	16	-	19,324	-	19,324
Santos (SP) - Stolthaven	37	-	81,550	-	81,550
Santos (SP) - União	98	-	80,978	-	80,978
São Francisco do Sul (SC) - Transpetro	7	466,622	-	-	466,622
Santos (SP) - Adonai	7	-	6,184	-	6,184
Suape (Ipojuca-PE) - Decal	13	-	156,222	-	156,222
Suape (Ipojuca-PE) - Pandenor	16	-	31,600	-	31,600
Suape (PE) - Temape	11	-	33,937	-	33,937

**Table 1.12** - Storage capacity of oil, oil products and ethanol, by terminal, on 12/31/2008

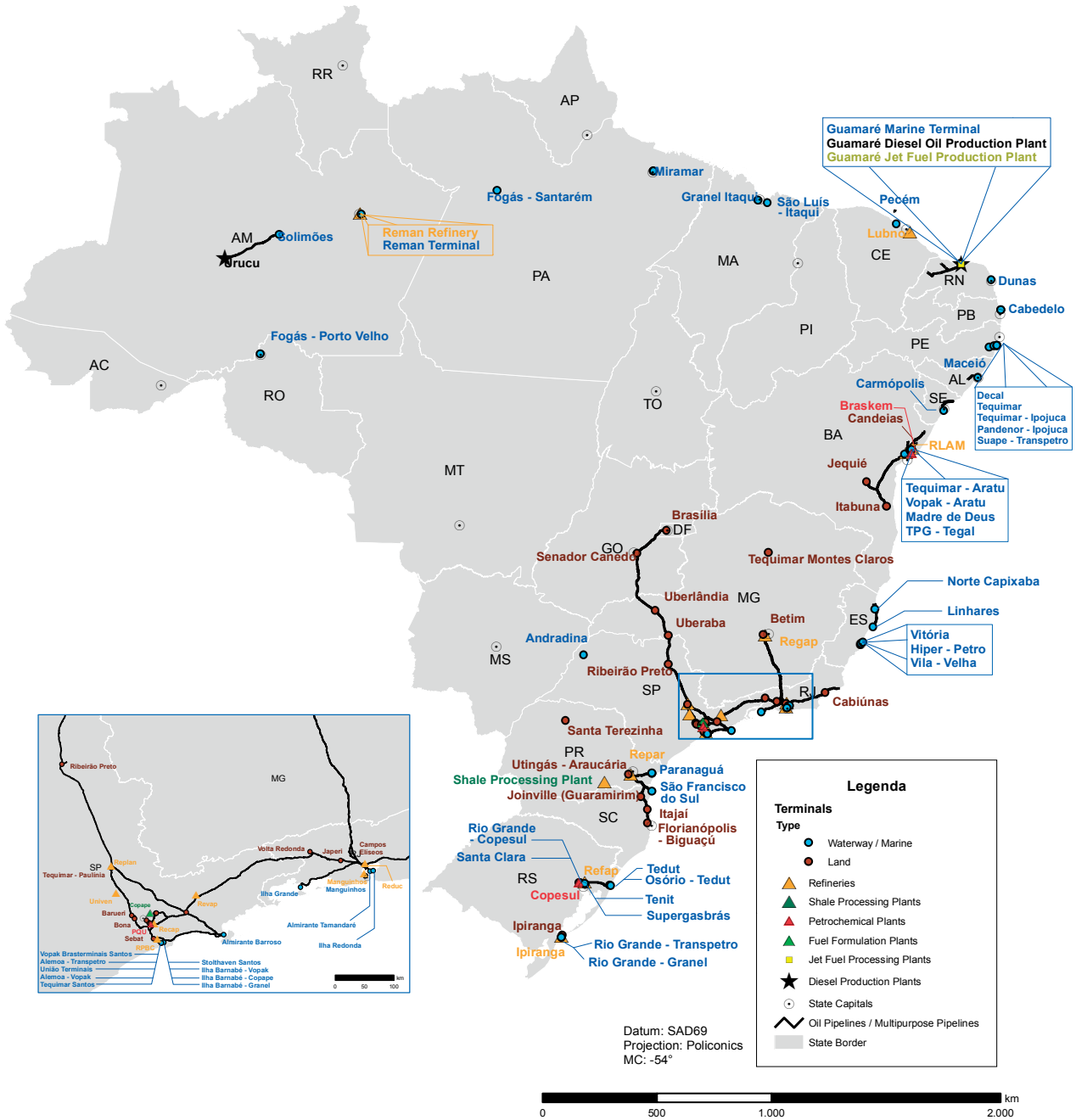
Type, location and operator (State)	Storage capacity of oil, oil products and ethanol				
	Number of tanks	Nominal capacity (m <sup>3</sup> )			
		Oil	Oil products (excluding LPG)	LPG	Total
Suape (PE) - Tequimar	33	-	118,545	5,000	123,545
Suape (PE) - Transpetro	10	-	55,031	15,940	70,971
TPG-Tegal (BA) - Braskem <sup>7</sup>	-	-	-	-	-
Vila Velha (ES) - CPVV	3	-	1,504	-	1,504
Vila Velha (ES) - Hiper Petro	2	-	3,200	-	3,200
Vitória (ES) - Transpetro	2	-	11,000	-	11,000
<b>Land terminals</b>	<b>377</b>	<b>1,460,464</b>	<b>1,942,483</b>	<b>87,540</b>	<b>3,490,487</b>
Araucária (PR) - Utingás	18	-	-	2,117	2,117
Barueri (SP) - Transpetro	25	-	199,978	9,571	209,549
Betim (MG) - Betingás	22	-	-	2,584	2,584
Brasília (DF) - Transpetro	10	-	70,475	9,516	79,991
Cabiúnas (RJ) - Transpetro	12	485,198	-	4,770	489,968
Candeias (BA) - Condomínio PHL	-	-	-	-	-
Campos Elísios (RJ) - Transpetro	10	483,928	68,364	-	552,292
Candeias (BA) - Transpetro	12	-	36,417	-	36,417
Cubatão (SP) - Transpetro	15	70,514	93,886	-	164,400
Florianópolis (Biguaçu) (SC) - Transpetro	8	-	38,103	-	38,103
Guararema (SP) - Transpetro	12	420,824	589,630	-	1,010,454
Guarulhos (SP) - Copape	6	-	7,267	-	7,267
Guarulhos (SP) - Transpetro	19	-	165,146	-	165,146
Itabuna (BA) - Transpetro	11	-	20,758	4,816	25,574
Japeri (RJ) - Transpetro	7	-	38,588	-	38,588
Jequié (BA) - Transpetro	12	-	18,632	4,462	23,094
Joinville (Guaramirim) (SC) - Transpetro	7	-	18,153	-	18,153
Maringá (PR) - Sta. Terezinha	2	-	2,800	-	2,800
Montes Claros (MG) - Tequimar	6	-	4,400	-	4,400
Osasco (SP) - Bona	43	-	6,947	-	6,947
Paulínia (SP) - Tequimar	4	-	6,703	-	6,703
Ribeirão Preto (SP) - Transpetro	6	-	51,791	6,368	58,159
Rio Grande (RS) - Refinaria Ipiranga	18	-	7,500	900	8,400
São Paulo (SP) - Diamond	14	-	1,235	-	1,235
Santo André (SP) - Utingás	4	-	-	12,568	12,568
Senador Canedo - (GO) - Transpetro	16	-	137,083	20,319	157,402
Triunfo (RS) - Copesul	5	-	19,000	-	19,000
Utinga (SP) - Transpetro	19	-	222,592	-	222,592
Uberaba (MG) - Transpetro	10	-	42,925	-	42,925
Uberlândia (MG) - Transpetro	15	-	45,973	9,549	55,522
Volta Redonda (RJ) - Transpetro	9	-	28,137	-	28,137

Source: ANP/SCM, as per Ordinance ANP nº 170/1998.

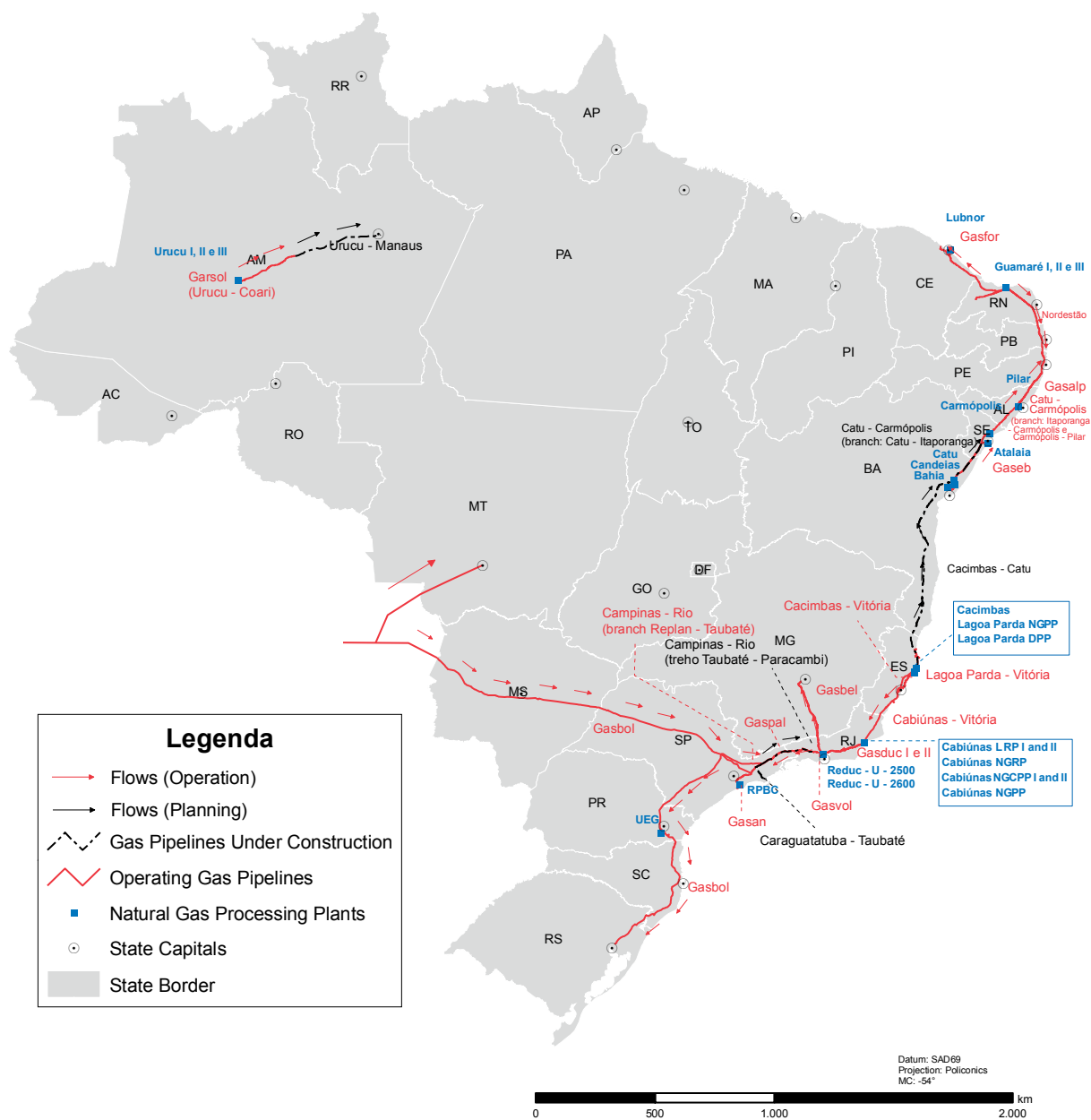
<sup>1</sup>Storage area includes only mooring piers and pipelines. <sup>2</sup>Storage capacity belongs to Refinaria de Manaus. <sup>3</sup>LPG Storage area in Fogas base. <sup>4</sup>The mooring system is interconnected with the tank park of Refinaria de Manguihos'. <sup>5</sup>Receives oil to be processed in Refinaria Ipiranga. <sup>6</sup>A Copesul petrochemical plant is directly connected to the mooring pier through pipelines. Storage tanks for raw materials in this terminal are located within its area. <sup>7</sup>Braskem petrochemical plant is directly connected to the mooring pier through pipelines storage tanks for raw materials are located within its area.

### 1.9 Pipelines

Map 1.1 - Infrastructure for transportation of oil and its products – 2008



Map 1.2 - Infrastructure for natural gas production and transportation - 2008



## COMMERCIALIZATION OF OIL, ITS PRODUCTS AND NATURAL GAS

## 1.10 Commercialization of Oil, its Products and Natural Gas

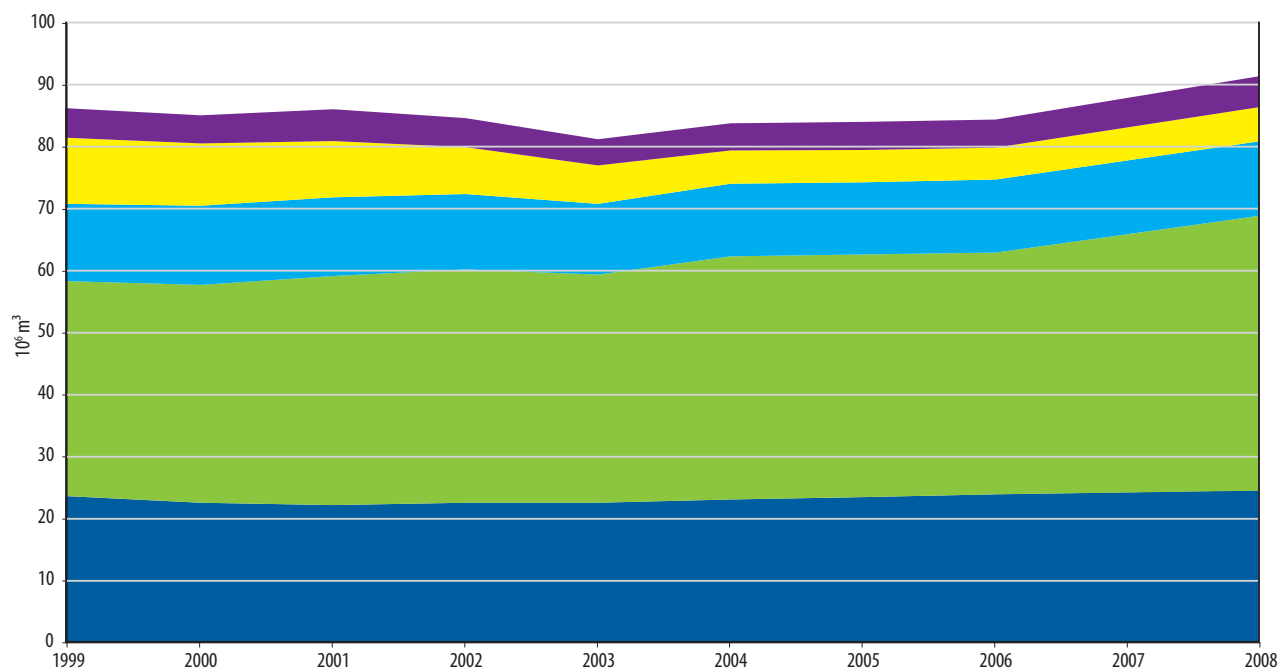
Table 1.13 - Domestic sales of main oil products, per distributor – 1999-2008

Oil products	Domestic sales at distribution level (10 <sup>3</sup> m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>86,317</b>	<b>85,204</b>	<b>86,123</b>	<b>84,705</b>	<b>81,309</b>	<b>83,907</b>	<b>84,140</b>	<b>84,486</b>	<b>88,419</b>	<b>92,682</b>	<b>4.82</b>
Gasoline C	23,681	22,630	22,211	22,610	22,610	23,174	23,553	24,008	24,325	25,175	3.49
Aviation gasoline	76	76	71	63	59	61	55	52	55	61	11.45
LPG	12,461	12,783	12,703	12,165	11,436	11,708	11,639	11,783	12,034	12,259	1.87
Fuel oil	10,714	10,086	9,093	7,561	6,200	5,413	5,237	5,127	5,525	5,172	-6.40
Diesel oil	34,720	35,151	37,025	37,668	36,853	39,226	39,167	39,008	41,558	44,764	7.71
Jet fuel	4,566	4,333	4,818	4,436	3,972	4,209	4,429	4,466	4,891	5,227	6.89
Lamp oil	100	145	202	201	177	116	59	42	31	24	-20.83

Source: ANP/SAB. Up to 2006, as per Ordinance CNP n° 221/1981. Since 2007 data as per Ordinance ANP n° 17/2004.

Note: Up to 2006, data include distributors sales and their own consumption. From 2007, data include solely distributors sales.

Figure 1.9 - Domestic sales of main oil products, per distributor – 1999-2008



Source: ANP/SAB (Table 1.13).

<sup>1</sup>Aviation gasoline, jet fuel and lamp oil included.

Gasoline C      LPG      Others<sup>1</sup>  
 Diesel Oil      Fuel Oil

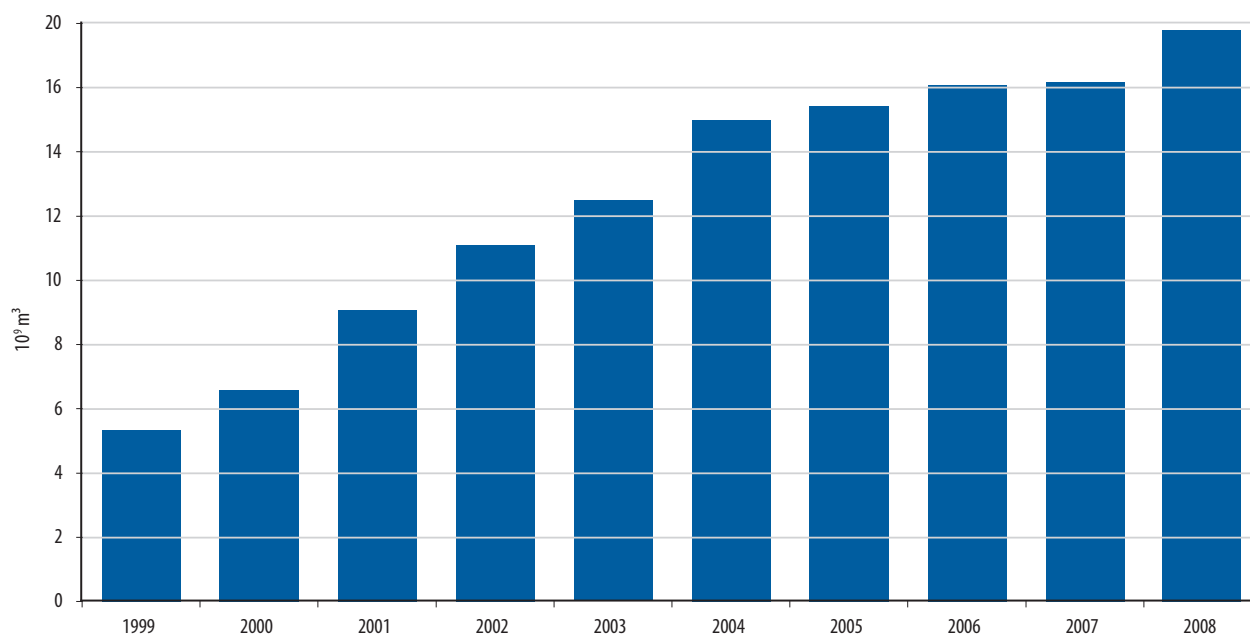


**Table 1.14 - Brazilian natural gas balance – 1999-2008**

Specification	Brazilian natural gas balance (10 <sup>6</sup> m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Imports</b>	<b>400</b>	<b>2,211</b>	<b>4,603</b>	<b>5,269</b>	<b>5,947</b>	<b>8,086</b>	<b>8,998</b>	<b>9,789</b>	<b>10,333</b>	<b>11,313</b>	<b>9.48</b>
<b>Production</b>	<b>11,855</b>	<b>13,283</b>	<b>13,999</b>	<b>15,525</b>	<b>15,792</b>	<b>16,971</b>	<b>17,699</b>	<b>17,706</b>	<b>18,152</b>	<b>21,593</b>	<b>18.96</b>
Reinjection	1,600	2,729	3,027	3,383	3,291	3,616	2,986	3,170	3,494	3,894	11.44
Flaring gas and losses	2,276	2,371	2,621	2,136	1,626	1,469	2,474	1,852	1,947	2,187	12.30
Total own consumption	2,333	2,990	3,032	3,219	3,539	4,019	4,324	4,929	6,167	5,496	-10.88
Production <sup>1</sup>	1,514	1,738	1,734	1,876	2,048	2,215	2,473	2,805	2,879	2,892	0.46
Refining, NPGPs and transfers <sup>2</sup>	819	1,252	1,297	1,343	1,491	1,804	1,851	2,124	3,288	2,604	-20.80
LGN <sup>3</sup>	431	579	584	622	681	675	1,022	1,166	1,254	1,274	1.53
Sales <sup>4</sup>	5,349	6,583	9,088	11,100	12,488	14,997	15,426	16,085	16,317	19,720	20.85
Adjustments	-	267	243	334	114	281	465	293	-696	335	-148.16

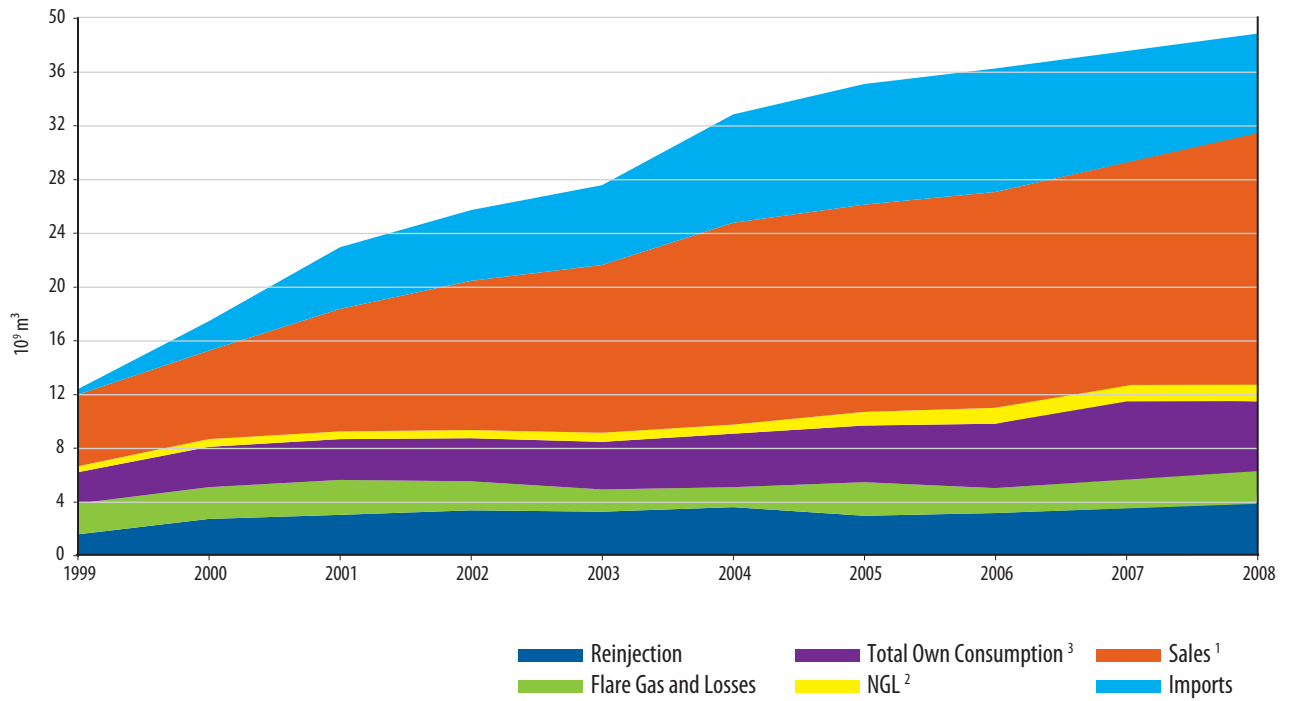
**Sources:** ANP/SCM, as per Ordinance ANP n° 43/98, for data on imports; ANP/SDP, as per Decree n° 2705/98, for data on production, reinjection, flaring gas and losses; Petrobras/Unidade de Negócios Gás Natural, for data on own consumption, NGL and sales.

<sup>1</sup>Refers to Petrobras own consumption in production areas and in Urucu I, II and III, Guamaré I, II and III, Pilar, Atalaia, Carmópolis, Candeias, Catu, Bahia and Lagoa Parda NGPPs. <sup>2</sup>Refers to Petrobras own consumption in refining and gas transfer areas as well as in Lubnor, Cabiúnas plants, Reduc I and II NGPPs and RPBC NGPP. <sup>3</sup>Volume as in gaseous state. <sup>4</sup>Includes sales for Nitrofertillizers Plants (Fafen) owned by Petrobras.

**Figure 1.10 - Natural gas domestic sales, at production level – 1999-2008**

**Source:** Petrobras/Unidade de Negócios Gás Natural (Table 1.14).

**Note:** Sales to nitrofertillizers plants (Fafen) owned by Petrobras included.

**Figure 1.11** - Brazilian natural gas balance – 1999-2008

Sources: ANP/SDP; ANP/SCM; Petrobras/Unidade de Negócios Gás Natural (Table 1.14).

<sup>1</sup>Sales to Nitrofertilizers Plants (Fafen) owned by Petrobras included. <sup>2</sup>Volume in gaseous state. <sup>3</sup>Refers to Petrobras' own consumption in production, refining, processing and natural gas transfer areas.

## 1.11 Foreign Trade

Table 1.15 - Oil imports, by region and country of origin - 1999-2008

Regions and countries of origin	Oil imports (10 <sup>3</sup> barris)										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>169,242</b>	<b>145,301</b>	<b>152,182</b>	<b>138,726</b>	<b>125,535</b>	<b>169,275</b>	<b>138,213</b>	<b>131,508</b>	<b>159,634</b>	<b>149,208</b>	<b>-6.53</b>
<b>Not specified</b>	-	-	-	-	-	-	-	-	-	<b>572</b>	-
<b>North America</b>	-	<b>0</b>	<b>2,076</b>	<b>1,863</b>	-	<b>0</b>	<b>5,130</b>	<b>3,445</b>	<b>7,998</b>	<b>654</b>	<b>-91.83</b>
United States of America	-	0	2,076	1,863	-	0	5,130	3,445	7,998	654	-91.83
<b>Central and South America</b>	<b>44,073</b>	<b>59,139</b>	<b>34,740</b>	<b>19,671</b>	<b>8,476</b>	<b>8,636</b>	<b>6,423</b>	<b>3,510</b>	<b>2,429</b>	<b>3,537</b>	<b>45.63</b>
Argentina	23,014	34,452	20,335	12,813	4,939	2,821	1,922	230	226	-	-100.00
Barbados	-	-	-	-	-	604	-	-	-	-	-
Bermuda	-	-	-	-	-	-	-	954	238	1,022	329.72
Bolivia	-	502	2,798	2,272	3,089	2,768	2,907	2,094	781	832	6.60
Colombia	2,990	7,860	723	-	-	558	-	109	1,184	1,684	42.17
Ecuador	-	-	-	-	-	1,696	1,595	123	-	-	-
Cayman Islands	-	-	56	-	252	-	-	-	-	-	-
Trinidad and Tobago	-	-	-	-	-	-	-	-	-	-	-
Venezuela	18,070	16,325	10,828	4,587	197	190	-	-	-	-	-
<b>Europe and Former Soviet Union</b>	-	-	<b>2,042</b>	<b>5,890</b>	<b>6,296</b>	-	<b>0</b>	<b>994</b>	<b>5,157</b>	<b>1,402</b>	<b>-72.81</b>
Germany	-	-	703	1,031	-	-	-	-	411	-	-
Azerbaijan	-	-	-	-	-	-	-	994	4,152	-	-100.00
Kazakhstan	-	-	-	917	-	-	-	-	-	-	-
Italy	-	-	-	-	2,059	-	-	-	-	-	-
France	-	-	-	-	-	-	0	-	-	-	-
Norway	-	-	-	-	1,425	-	-	-	-	-	-
Portugal	-	-	-	-	-	-	-	-	-	872	-
United Kingdom <sup>1</sup>	-	-	-	1,937	2,812	-	-	-	-	479	-
Russia	-	-	-	1,035	-	-	-	-	-	-	-
Switzerland	-	-	1,339	970	-	-	-	-	595	52	-
<b>Middle East</b>	<b>42,182</b>	<b>31,647</b>	<b>27,666</b>	<b>38,694</b>	<b>36,250</b>	<b>37,830</b>	<b>35,248</b>	<b>32,669</b>	<b>26,612</b>	<b>35,103</b>	<b>31.91</b>
Saudi Arabia	31,655	20,696	24,921	24,097	26,162	24,192	24,641	22,906	22,531	22,893	1.61
United Arab Emirates	-	1,200	-	-	-	-	-	-	-	-	-
Oman	-	1,266	1,304	-	-	-	-	-	-	-	-
Iran	4,124	-	-	233	251	-	-	-	-	-	-
Iraq	6,011	8,486	1,441	14,364	9,838	13,639	10,607	9,764	4,082	12,211	199.16
Syria	392	-	-	-	-	-	-	-	-	-	-
<b>Africa</b>	<b>82,986</b>	<b>53,936</b>	<b>85,658</b>	<b>72,608</b>	<b>73,634</b>	<b>122,809</b>	<b>91,412</b>	<b>90,890</b>	<b>117,438</b>	<b>107,939</b>	<b>-8.09</b>
Angola	878	-	5,988	-	-	-	-	6,814	12,220	18,798	53.83
Algeria	39,468	33,315	29,349	30,621	25,886	38,466	38,603	21,830	20,626	13,379	-35.13
Congo (Democratic Republic)	-	-	-	-	-	-	-	3,835	2,503	-	-100.00
Congo (Brazzaville)	-	1,875	2,860	1,494	1,790	-	956	1,825	1,830	-	-100.00
Egypt	-	-	-	-	-	-	-	-	-	-	-
Gabon	-	-	2,247	1,960	-	-	-	-	-	-	-
Ghana	-	-	-	879	-	-	-	-	-	-	-
Ecuadorial Guinea	-	-	-	-	-	284	4,362	1,390	2,462	3,617	46.89
Libya	959	-	-	-	-	-	-	2,621	11,783	11,955	1.46
Nigeria	41,682	18,746	45,215	37,654	45,958	84,059	47,491	52,575	66,014	60,191	-8.82
<b>Asia-Pacific</b>	-	<b>578</b>	-	-	<b>879</b>	-	-	-	-	-	-
Australia	-	578	-	-	879	-	-	-	-	-	-
Indonesia	-	-	-	-	-	-	-	-	-	-	-

Source: MDIC/Secex.

Note: Condensate included. Condensate imported by petrochemical plants included.

<sup>1</sup>For year 2002, Virgin Islands included (382 thousand barrels).

**Table 1.16** - Oil exports, by region and country of destination – 1999–2008

Region and country of destination	Oil exports (10 <sup>3</sup> barris)										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>204</b>	<b>6,819</b>	<b>40,434</b>	<b>85,761</b>	<b>88,246</b>	<b>84,252</b>	<b>100,190</b>	<b>134,336</b>	<b>153,813</b>	<b>158,110</b>	<b>2.79</b>
<b>North America</b>	<b>0</b>	<b>1,535</b>	<b>1,306</b>	<b>9,168</b>	<b>13,168</b>	<b>10,866</b>	<b>15,928</b>	<b>38,674</b>	<b>54,414</b>	<b>49,617</b>	<b>-8.82</b>
United States of America	0	1,535	1,306	9,168	13,168	10,866	15,928	38,674	54,414	49,617	-8.82
<b>Central and South America</b>	<b>204</b>	<b>2,943</b>	<b>20,621</b>	<b>23,875</b>	<b>28,276</b>	<b>39,394</b>	<b>47,254</b>	<b>47,590</b>	<b>48,806</b>	<b>64,697</b>	<b>32.56</b>
Argentina	-	417	4,948	1,059	0	-	-	-	-	18	-
Netherlands Antilles	-	522	999	-	-	-	-	-	-	-	-
Aruba	-	-	-	-	1,023	5,375	8,125	3,605	1,013	-	-100.00
Bahamas	204	-	-	3,996	14,250	10,489	15,215	12,705	-	-	-
Chile	-	-	4,552	4,258	8,588	10,887	11,987	20,865	23,471	17,252	-26.49
Colombia	-	-	-	-	-	891	-	366	-	-	-
Cuba	0	0	-	-	-	-	-	-	-	-	-
Peru	-	-	-	-	891	883	2,722	6,217	5,038	3,751	-25.55
Puerto Rico	-	-	-	-	-	886	564	-	-	-	-
Santa Lucia	-	2,004	10,122	12,506	-	-	-	-	15,955	41,711	161.42
Trinidad and Tobago	-	-	-	2,057	3,524	9,056	8,640	3,831	3,329	1,608	-51.70
Uruguay	-	-	-	-	-	926	-	-	-	-	-
Cayman Islands	-	-	-	-	-	-	-	-	-	357	-
<b>Europe</b>	<b>0</b>	<b>731</b>	<b>9,406</b>	<b>19,930</b>	<b>22,539</b>	<b>19,323</b>	<b>18,063</b>	<b>21,734</b>	<b>32,704</b>	<b>22,513</b>	<b>-31.16</b>
Germany	-	-	-	-	-	-	0	-	3,392	2,091	-38.35
Spain <sup>1</sup>	-	209	210	542	1,942	1,010	-	992	1,339	3,620	170.28
France	0	521	4,219	2,687	4,181	4,719	2,369	3,032	3,644	1,906	-47.69
Netherlands	-	-	332	9,044	4,312	2,110	6,607	3,093	10,586	6,567	-37.97
Italy	-	-	1,216	591	-	341	-	-	-	0	-
Norway	-	-	-	-	0	0	0	0	-	-	-
Portugal	-	-	2,067	6,170	6,258	8,255	8,397	12,435	11,301	6,984	-38.20
United Kingdom <sup>2</sup>	-	-	1,363	896	5,845	2,888	690	2,183	2,442	1,345	-44.93
<b>Middle East</b>	<b>-</b>	<b>-</b>	<b>6,493</b>	<b>15,608</b>	<b>5,698</b>	<b>3,114</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
United Arab Emirates	-	-	6,493	15,608	5,698	3,114	-	-	-	-	-
<b>Africa</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>328</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Ivory Coast	-	-	-	328	-	-	-	-	-	-	-
<b>Asia-Pacific</b>	<b>-</b>	<b>1,610</b>	<b>2,608</b>	<b>16,851</b>	<b>18,565</b>	<b>11,555</b>	<b>18,945</b>	<b>26,338</b>	<b>17,889</b>	<b>21,283</b>	<b>18.98</b>
China	-	1,610	1,609	-	868	6,577	13,016	16,333	15,295	20,302	32.73
North Korea	-	-	998	-	-	988	-	-	-	0	-
South Korea	-	-	-	-	5,886	3,990	3,887	5,011	2,593	-	-100.00
India	-	-	-	16,851	11,811	0	2,042	4,993	-	982	-
Singapore	-	-	-	-	-	-	0	-	-	-	-

Source: MDIC/Secex.

<sup>1</sup>For years 2002 and 2003, Canary Islands included. <sup>2</sup>Virgin Islands included.

**Table 1.17** - Imports of oil products, by region and country of origin – 2008

Region and country of origin	Oil products imports (10 <sup>3</sup> m <sup>3</sup> )							
	Total	Naphtha	Diesel oil	Coke	LPG <sup>1</sup>	Lubricating oil	Solvent	Others <sup>2</sup>
<b>Total</b>	<b>17,875.8</b>	<b>3,593.7</b>	<b>5,829.3</b>	<b>3,535.5</b>	<b>2,150.9</b>	<b>565.3</b>	<b>451.2</b>	<b>1,749.9</b>
<b>North America</b>	<b>3,585.7</b>	-	<b>909.8</b>	<b>2,230.2</b>	<b>40.3</b>	<b>198.8</b>	<b>44.6</b>	<b>162.1</b>
United States of America	3,513.7	-	909.8	2,161.7	40.3	196.7	43.4	161.8
Others <sup>3</sup>	72.0	-	-	68.5	-	2.0	1.1	0.4
<b>Central and South America</b>	<b>4,920.0</b>	<b>2,163.2</b>	<b>160.0</b>	<b>1,117.4</b>	<b>766.8</b>	<b>113.6</b>	<b>296.5</b>	<b>302.6</b>
Argentina	3,163.1	2,072.4	-	2.4	723.1	34.4	266.4	64.5
Aruba	362.0	49.5	160.0	25.0	-	-	-	127.5
Uruguay	29.6	-	-	-	3.6	-	25.8	0.1
Venezuela	917.6	41.2	-	810.0	40.0	25.1	0.2	1.1
Others <sup>4</sup>	447.7	-	-	280.0	-	54.2	4.1	109.5
<b>Europe and Former Soviet Union</b>	<b>2,303.6</b>	<b>76.3</b>	<b>1,134.2</b>	<b>187.3</b>	<b>226.5</b>	<b>219.6</b>	<b>110.0</b>	<b>349.6</b>
Spain	131.0	-	-	-	0.1	23.3	107.1	0.6
Netherlands	449.1	-	150.1	-	0.0	7.4	1.3	290.3
Italy	258.9	76.3	-	79.2	8.1	94.5	0.1	0.8
Russia	859.8	-	854.1	-	-	5.7	-	-
Switzerland	83.5	-	45.8	29.0	-	0.1	0.0	8.6
Others <sup>5</sup>	521.3	-	84.2	79.2	218.4	88.6	1.6	49.3
<b>Middle East</b>	<b>1,104.5</b>	<b>130.7</b>	<b>73.7</b>	-	<b>272.6</b>	<b>21.6</b>	<b>0.1</b>	<b>605.8</b>
Saudi Arabia	361.6	79.9	-	-	181.7	-	-	100.1
United Arab Emirates	596.0	-	40.5	-	83.2	-	-	472.3
Israel	23.7	-	-	-	-	21.6	0.0	2.1
Others <sup>6</sup>	123.2	50.9	33.2	-	7.7	-	0.1	31.3
<b>Africa</b>	<b>2,068.0</b>	<b>1,223.5</b>	-	-	<b>844.5</b>	-	-	-
Algeria	1,573.7	911.9	-	-	661.8	-	-	-
Libya	39.1	39.1	-	-	-	-	-	-
Nigeria	196.9	138.7	-	-	58.2	-	-	-
Others <sup>7</sup>	258.3	133.8	-	-	124.5	-	-	-
<b>Asia-Pacific</b>	<b>3,894.0</b>	-	<b>3,551.7</b>	<b>0.6</b>	<b>0.2</b>	<b>11.7</b>	<b>0.0</b>	<b>329.7</b>
India	1,885.8	-	1,800.3	-	-	6.8	-	78.7
Others <sup>8</sup>	2,008.2	-	1,751.5	0.6	0.2	5.0	0.0	251.0

Source: MDIC/Secex.

<sup>1</sup>Propane and butane included. <sup>2</sup>Asphalt, gasoline A, aviation gasoline, fuel oil, paraffin, jet fuel and other non-energy products included. <sup>3</sup>Canada and Mexico included. <sup>4</sup>Netherlands Antilles, Barbados, Bolivia, Chile, Colombia and Panama. <sup>5</sup>Includes Germany, Austria, Belarus, Belgium, Denmark, Spain, Finland, France, Greece, Italy, Ireland, Liechtenstein, Norway, Poland, Portugal, Czech Republic, United Kingdom, Sweden and Turkey included. <sup>6</sup>Bahrain, Iraq, Qatar and Syria <sup>7</sup>Includes South Africa, Angola, Equatorial Guinea, Egypt, Morocco and Zambia included. <sup>8</sup>Australia, China, Singapore, Hong Kong, Indonesia, Japan, Malaysia, South Korea, North Korea, Thailand and Taiwan included.

**Table 1.18** - Imports of energy and non-energy oil products - 1999-2008

Oil products	Imports (10 <sup>3</sup> m <sup>3</sup> )										08/07 %
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
<b>Total</b>	<b>18,856.5</b>	<b>18,256.5</b>	<b>18,276.4</b>	<b>16,828.7</b>	<b>13,139.4</b>	<b>11,744.4</b>	<b>10,921.6</b>	<b>13,501.3</b>	<b>15,959.5</b>	<b>17,913.7</b>	<b>12.25</b>
<b>Energy</b>	<b>12,521.5</b>	<b>11,948.5</b>	<b>11,632.0</b>	<b>10,944.2</b>	<b>6,488.8</b>	<b>4,870.8</b>	<b>3,767.4</b>	<b>6,111.3</b>	<b>7,912.1</b>	<b>9,713.5</b>	<b>22.77</b>
Gasoline A	224.5	60.7	0.0	164.1	181.7	55.4	71.2	28.2	10.0	0.2	-98.50
Aviation Gasoline	0.1	-	-	-	3.9	1.7	-	-	-	-	-
LPG <sup>1</sup>	5,117.7	5,096.8	3,851.1	3,355.4	2,039.9	1,880.1	947.6	1,585.5	1,794.6	2,188.8	21.97
Fuel oil	222.2	87.4	13.3	59.2	93.0	130.4	52.9	251.7	116.9	198.3	69.67
Diesel oil	5,830.2	5,800.9	6,585.3	6,369.9	3,818.4	2,694.7	2,371.3	3,545.1	5,099.4	5,829.3	14.31
Jet fuel	1,126.7	902.8	1,182.3	995.6	352.0	108.5	324.5	700.8	891.2	1,496.9	67.96
<b>Non-energy</b>	<b>6,335.0</b>	<b>6,308.0</b>	<b>6,644.4</b>	<b>5,884.5</b>	<b>6,650.6</b>	<b>6,873.6</b>	<b>7,154.2</b>	<b>7,390.0</b>	<b>8,047.4</b>	<b>8,200.2</b>	<b>1.90</b>
Asphalt	0.6	1.4	0.9	0.9	1.2	4.4	6.5	8.0	7.8	4.8	-38.10
Coke	1,957.2	2,222.8	2,826.5	2,172.7	2,488.8	2,465.7	2,284.2	2,577.5	3,131.4	3,536.0	12.92
Naphtha	3,657.1	3,779.5	3,307.1	3,253.0	3,196.1	3,235.3	4,275.2	4,278.2	4,176.7	3,593.7	-13.96
Lubricating oil	110.5	151.9	213.8	245.2	225.0	270.5	340.0	289.9	435.5	565.3	29.80
Paraffin	6.2	9.9	35.5	19.9	18.8	9.3	5.3	12.0	21.4	23.3	8.56
Solvent	239.2	138.8	255.5	187.5	712.9	878.1	216.4	208.8	256.8	451.2	75.71
Others <sup>2</sup>	364.3	3.7	5.1	5.4	7.8	10.3	26.6	15.6	17.7	25.9	46.70

Source: MDIC/Secex.

<sup>1</sup>Propane and butane included. <sup>2</sup>Products of lesser importance included.

**Table 1.19** - Exports of energy and non-energy oil products, by region and country of destination - 2008

Region and country of destination	Oil products exports (10 <sup>3</sup> m <sup>3</sup> )										
	Total	Fuel oil	Marine fuels (bunkers) <sup>1</sup>	Gasoline A	Solvent	Coke	Lubricating oil	Fuel and lubricating oil for aircrafts <sup>2</sup>	Diesel Oil	LPG	Others <sup>3</sup>
<b>Total</b>	<b>15,986.4</b>	<b>5,159.7</b>	<b>4,522.3</b>	<b>2,590.6</b>	<b>574.1</b>	<b>319.8</b>	<b>39.8</b>	<b>1,938.7</b>	<b>652.3</b>	<b>7.3</b>	<b>181.9</b>
<b>Unknown destination</b>	<b>6,418.3</b>	-	<b>4,513.1</b>					<b>1,905.2</b>			
<b>North America</b>	<b>1,504.0</b>	<b>784.9</b>	<b>1.3</b>	<b>137.4</b>	<b>392.7</b>	<b>152.2</b>	<b>0.0</b>	<b>17.5</b>	<b>14.7</b>	-	<b>3.2</b>
Canada	22.8	-	-	-	-	22.7	-	-	-	-	0.0
United States of America	1,480.6	784.9	1.3	137.4	392.7	129.1	-	17.5	14.7	-	3.0
Mexico	0.7	-	-	-	0.0	0.4	0.0	-	-	-	0.2
<b>Central and South America</b>	<b>3,387.9</b>	<b>1,236.3</b>	<b>1.3</b>	<b>1,179.0</b>	<b>124.7</b>	<b>18.0</b>	<b>38.2</b>	<b>2.6</b>	<b>609.1</b>	<b>7.3</b>	<b>171.4</b>
Netherlands Antilles	1,251.8	153.4	-	1,005.1	-	-	-	-	-	-	93.3
Argentina	1,197.4	811.0	1.2	36.5	93.9	0.4	5.0	1.0	239.4	-	9.0
Bolivia	60.9	-	-	-	-	-	4.5	-	42.9	-	13.5
Chile	3.9	-	-	-	2.9	0.1	0.9	0.0	-	-	0.0
Colombia	0.8	-	-	-	0.0	0.1	0.6	-	-	-	0.1
Costa Rica	51.1	-	-	50.7	0.0	-	0.0	-	-	-	0.4
Ecuador	0.3	-	-	-	0.0	-	0.3	-	-	-	0.1
Guatemala	1.6	-	-	-	0.0	-	0.5	-	-	-	1.0
Jamaica	0.0	-	-	-	-	-	0.0	-	-	-	-
Paraguay	371.0	0.0	-	2.1	1.5	-	17.2	0.0	313.3	0.9	36.0
Peru	34.8	-	-	33.1	0.0	0.0	1.2	-	-	-	0.3
Puerto Rico	41.0	-	-	41.0	-	-	-	-	-	-	0.0
Dominican Republic	0.1	-	-	-	-	-	0.1	-	-	-	0.0
Uruguay	348.3	271.8	0.0	10.5	21.7	1.2	7.5	0.0	13.5	6.3	15.7
Venezuela	0.9	-	-	-	-	-	0.1	-	-	-	0.8
Others <sup>4</sup>	23.9	-	0.1	-	4.6	16.1	0.3	1.6	-	-	1.2
<b>Europe</b>	<b>1,625.2</b>	<b>1,484.9</b>	<b>6.6</b>	<b>9.5</b>	<b>55.2</b>	<b>24.1</b>	<b>0.3</b>	<b>13.1</b>	<b>28.5</b>	-	<b>3.2</b>
Germany	0.4	-	0.0	0.1	-	-	-	0.1	-	-	0.2
Belgium	41.8	40.8	-	-	0.9	-	0.0	-	-	-	0.1
Spain	3.4	-	-	-	2.8	-	0.0	0.0	-	-	0.6
France	0.1	-	0.0	0.0	-	-	0.0	0.1	-	-	0.0
Netherlands	966.3	883.3	-	2.6	51.5	-	0.0	-	28.5	-	0.3
Italy	61.0	60.4	0.1	-	-	-	0.0	-	-	-	0.4
Portugal	17.1	-	4.1	-	0.0	-	0.0	12.7	-	-	0.3
United Kingdom	9.1	-	0.2	6.8	-	0.7	0.2	0.1	0.0	-	1.2
Others <sup>5</sup>	526.1	500.3	2.1	-	0.0	23.4	0.0	0.2	-	-	0.0
<b>Middle East</b>	<b>102.5</b>	<b>41.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>60.7</b>	<b>0.0</b>	<b>0.0</b>	-	-	<b>0.0</b>
Bahrein	45.9	-	-	0.0	-	45.9	-	-	-	-	-
United Arab Emirates	14.9	-	-	-	-	14.8	-	0.0	-	-	0.0
Others <sup>6</sup>	41.7	41.7	0.0	-	0.0	-	0.0	-	-	-	-
<b>Africa</b>	<b>1,300.0</b>	-	-	<b>1,264.7</b>	<b>0.8</b>	<b>29.6</b>	<b>1.1</b>	-	-	-	<b>3.8</b>
South Africa	29.9	-	-	-	-	29.6	0.0	-	-	-	0.3
Angola	91.4	-	-	88.3	0.8	-	0.8	-	-	-	1.5
Gaban	1.1	-	-	-	-	-	-	-	-	-	1.1
Nigeria	1,095.5	-	-	1,095.4	-	-	0.0	-	-	-	0.1
Others <sup>7</sup>	82.1	-	-	81.0	0.0	-	0.3	-	-	-	0.9
<b>Asia-Pacific</b>	<b>1,648.4</b>	<b>1,611.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.7</b>	<b>35.3</b>	<b>0.2</b>	<b>0.1</b>	<b>0.0</b>	-	<b>0.2</b>
China	0.8	-	-	0.0	0.7	-	0.0	-	-	-	0.1
Singapore	1,611.8	1,611.8	0.0	0.0	-	-	-	-	-	-	-
India	35.3	-	-	-	0.0	35.2	0.0	-	-	-	0.0
Others <sup>8</sup>	0.4	0.0	-	0.0	0.0	0.0	0.2	0.1	0.0	-	0.0

Sources: MDIC/Secex, excluding marine fuel oil; for marine fuel oil, Petrobras/Abast.

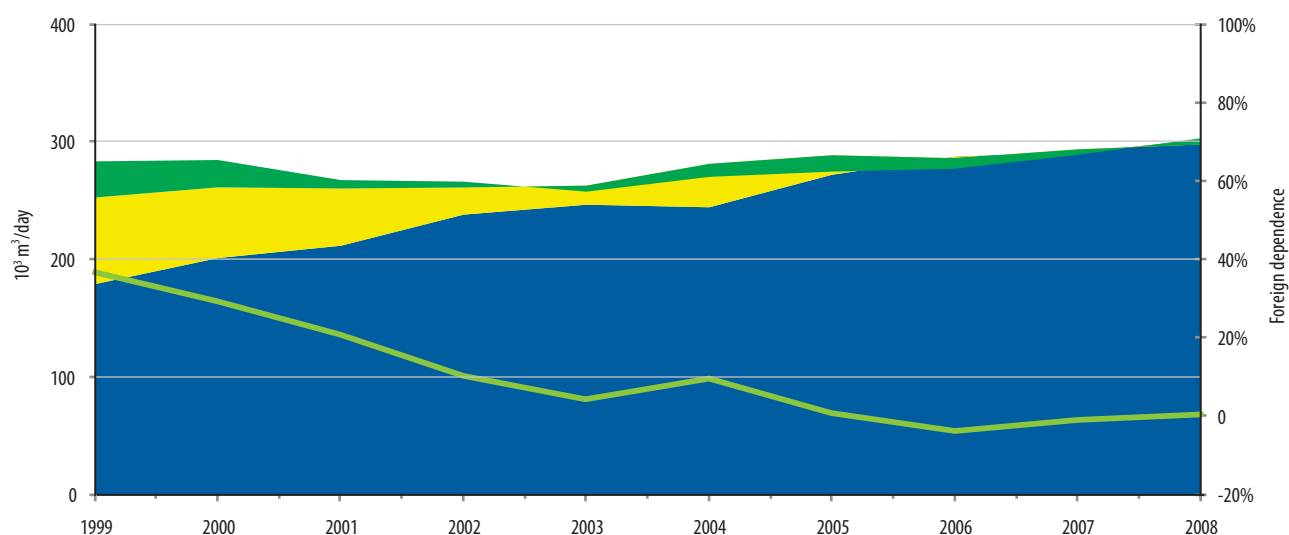
<sup>1</sup>Fuel oil, diesel oil and lubricating oil sales for foreign ships in transit included. <sup>2</sup>Jet fuel and lubricating oil sales for foreign aircrafts in transit included. <sup>3</sup>Asphalt, aviation gasoline, naphtha, other non-energy products, paraffin and jet fuel included. <sup>4</sup>Cuba, El Salvador, Guiana, French Guiana, Honduras, Nicaragua, Panama, Santa Lucia, Suriname, and Trinidad and Tobago included. <sup>5</sup>Austria, Bulgaria, Cyprus, Denmark, Iceland, Greece, Norway, Poland, Russia, Sweden, Switzerland, Turkey and Ukraine included. <sup>6</sup>Iran, Israel, Lebanon and Oman included. <sup>7</sup>Algeria, Congo, Gambia, Gana, Guinea, Bissau Guinea, Equatorial Guinea, Lebanon, Morocco, Mauritius Islands and Liberia included. <sup>8</sup>Australia, Phillipines, Hong Kong, Indonesia, Japan, New Zealand, Thailand and Vietnam included.

**Table 1.20** - Exports of energy and non-energy oil products - 1999-2008

Oil products	Exports (10 <sup>3</sup> m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>7,641.1</b>	<b>9,771.0</b>	<b>15,602.7</b>	<b>14,893.2</b>	<b>14,660.4</b>	<b>15,299.2</b>	<b>15,640.8</b>	<b>16,777.3</b>	<b>17,647.9</b>	<b>15,986.4</b>	<b>-9.41</b>
<b>Energy</b>	<b>6,739.0</b>	<b>8,884.1</b>	<b>14,940.4</b>	<b>14,011.8</b>	<b>13,765.4</b>	<b>14,467.0</b>	<b>14,407.4</b>	<b>15,807.8</b>	<b>16,550.4</b>	<b>14,906.4</b>	<b>-9.93</b>
Gasoline A	1,529.6	2,022.0	2,965.3	3,389.6	2,678.8	2,015.1	2,831.5	2,696.6	3,698.1	2,590.8	-29.94
Aviation gasoline	37.1	21.4	20.8	17.8	13.9	12.5	18.7	4.4	8.1	8.0	-0.73
LPG <sup>1</sup>	4.6	9.9	8.1	175.1	130.9	63.7	152.2	34.1	23.2	7.5	-67.86
Fuel oil	2,376.5	1,782.5	6,333.6	4,915.0	5,988.3	7,463.0	5,756.2	6,792.3	5,403.9	5,159.7	-4.52
Marine fuel oil <sup>2</sup>	2,728.0	3,091.0	3,486.0	3,868.8	3,402.6	3,419.9	3,579.9	3,840.2	4,431.0	4,522.3	2.06
Diesel oil	61.4	60.6	73.5	16.3	122.2	64.5	301.0	601.8	1,046.1	652.3	-37.64
Jet fuel	1.8	3.4	24.1	4.2	7.0	16.1	0.4	2.5	1.0	26.5	2,436.99
Aircraft fuels <sup>3</sup>	nd	1,893.4	2,029.1	1,625.0	1,421.6	1,412.2	1,767.7	1,835.9	1,939.0	1,939.4	0.02
Lamp oil	-	-	-	-	-	-	-	-	-	-	..
<b>Non-energy</b>	<b>902.1</b>	<b>886.9</b>	<b>662.3</b>	<b>881.5</b>	<b>895.0</b>	<b>832.2</b>	<b>1,233.4</b>	<b>969.5</b>	<b>1,097.5</b>	<b>1,080.0</b>	<b>-1.60</b>
Asphalt	24.4	22.5	14.6	17.6	21.3	20.4	10.5	19.0	17.8	30.8	73.35
Naphtha	4.8	0.0	-	49.6	0.0	17.1	69.7	31.9	26.5	103.4	290.76
Lubricating oil and lubricating grease	36.1	84.9	58.4	85.7	105.6	71.0	72.2	110.1	71.7	40.9	-42.92
Paraffin	7.6	39.4	8.2	25.0	21.6	6.7	9.1	14.6	8.6	8.7	0.66
Solvent	704.4	534.6	419.1	418.8	473.7	443.1	618.5	555.6	649.7	574.2	-11.62
Others <sup>4</sup>	124.7	205.5	162.0	284.8	272.7	273.9	453.4	238.3	323.3	322.0	-0.39

Sources: MDIC/Secex, excluding marine fuel oil. For marine fuel oil, Petrobras/Abast.

<sup>1</sup>Propane and butane included. <sup>2</sup>Fuel oil and diesel oil sales for ships in transit included. <sup>3</sup>Jet fuel sales for aircrafts in transit included. <sup>4</sup>Coke and other products of lesser importance included.

**Figure 1.12** - Foreign dependence on oil and oil products – 1999-2008

Sources: ANP/SDP; MDIC/Secex; Petrobras/Abast.

Note: Generated by ANP/SPP from primary data.

<sup>1</sup>Condensate and NGL included. <sup>2</sup>Condensate included.

Oil Production <sup>1</sup>      Net Oil Products Imports  
 Net Oil Imports <sup>2</sup>      Foreign Dependence

**Table 1.21** - Natural gas imports, by country of origin – 1999-2008

Country	Natural gas imports (10 <sup>6</sup> m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>400</b>	<b>2,211</b>	<b>4,603</b>	<b>5,269</b>	<b>5,947</b>	<b>8,086</b>	<b>8,998</b>	<b>9,789</b>	<b>10,334</b>	<b>11,348</b>	<b>9.81</b>
Argentina	-	106	753	492	350	451	349	475	166	135	-18.50
Bolivia	400	2,105	3,850	4,777	5,597	7,635	8,648	9,314	10,168	11,178	9.93
Trinidad e Tobago <sup>1</sup>	-	-	-	-	-	-	-	-	-	35	-

Source: ANP/SCM, as per Ordinance ANP n° 43/1998.

Note: Brazilian natural gas imports started in July, 1999.

<sup>1</sup> Refers to the imported NGL considering its volume in gaseous state.





SECTION 2

# BIOFUELS



## 2.1 Etanol

Table 2.1 - Production of anhydrous and hydrated ethanol, by region and by state - 1999-2008

Brazilian Regions and States	Production of anhydrous and hydrated ethanol (10 <sup>3</sup> m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>12,981.92</b>	<b>10,700.25</b>	<b>11,465.97</b>	<b>12,588.62</b>	<b>14,469.95</b>	<b>14,647.25</b>	<b>16,039.89</b>	<b>17,764.26</b>	<b>22,556.90</b>	<b>27,133.19</b>	<b>20.29</b>
<b>North</b>	<b>19.83</b>	<b>35.81</b>	<b>28.79</b>	<b>30.32</b>	<b>39.39</b>	<b>47.53</b>	<b>47.51</b>	<b>75.88</b>	<b>47.66</b>	<b>55.67</b>	<b>16.82</b>
Amazonas	-	3.71	2.81	3.89	4.38	4.67	6.01	5.65	8.26	7.96	-3.64
Pará	19.83	32.11	25.98	26.43	35.01	42.86	37.28	58.66	39.39	44.91	14.00
Tocantins	-	-	-	-	-	-	4.22	11.57	-	2.80	--
<b>Northeast</b>	<b>1,315.27</b>	<b>1,528.52</b>	<b>1,401.64</b>	<b>1,518.28</b>	<b>1,505.23</b>	<b>1,675.49</b>	<b>1,695.56</b>	<b>1,572.56</b>	<b>1,901.72</b>	<b>2,371.62</b>	<b>24.71</b>
Maranhão	54.79	49.65	75.10	83.58	89.87	95.91	48.92	113.56	192.30	181.56	-5.58
Piauí	15.44	16.62	18.68	22.83	22.37	19.45	19.93	65.66	36.17	44.55	23.18
Ceará	2.44	0.78	1.19	0.98	0.32	0.15	1.02	1.00	0.57	7.52	1,216.64
Rio Grande do Norte	95.37	74.03	47.64	133.34	85.47	64.21	99.35	95.56	55.60	87.40	57.19
Paraíba	230.31	200.75	237.94	219.71	267.67	243.80	353.50	255.94	363.50	401.48	10.45
Pernambuco	358.38	332.86	284.87	300.27	339.20	397.02	380.18	311.95	395.39	558.92	41.36
Alagoas	453.69	733.00	629.31	639.22	589.83	729.65	620.27	572.32	681.45	892.64	30.99
Sergipe	49.19	55.53	52.36	59.18	61.49	62.47	67.64	62.79	35.49	57.56	62.20
Bahia	55.67	65.30	54.56	59.18	49.00	62.83	104.75	93.77	141.25	139.98	-0.89
<b>Southeast</b>	<b>9,372.23</b>	<b>7,202.72</b>	<b>7,753.90</b>	<b>8,551.82</b>	<b>9,786.64</b>	<b>9,948.40</b>	<b>11,154.24</b>	<b>12,478.67</b>	<b>15,782.23</b>	<b>19,212.33</b>	<b>21.73</b>
Minas Gerais	645.35	488.27	522.15	558.41	785.23	758.25	918.80	1,270.58	1,790.91	2,200.92	22.89
Espírito Santo	126.39	150.90	131.03	152.30	151.77	167.83	217.39	159.46	281.79	250.32	-11.17
Rio de Janeiro	118.01	90.97	62.95	106.59	104.74	161.25	164.29	90.24	120.27	125.98	4.75
São Paulo	8,482.49	6,472.57	7,037.78	7,734.52	8,744.90	8,861.07	9,853.77	10,958.39	13,589.27	16,635.12	22.41
<b>South</b>	<b>1,049.85</b>	<b>829.07</b>	<b>937.42</b>	<b>974.95</b>	<b>1,209.45</b>	<b>1,178.31</b>	<b>995.67</b>	<b>1,308.24</b>	<b>1,923.23</b>	<b>1,906.00</b>	<b>-0.90</b>
Paraná	1,045.82	826.07	932.12	968.54	1,203.40	1,173.49	992.33	1,302.74	1,916.23	1,899.68	-0.86
Rio Grande do Sul	4.03	3.00	5.31	6.41	6.05	4.82	3.34	5.50	7.00	6.32	-9.74
<b>Central-West</b>	<b>1,224.74</b>	<b>1,104.12</b>	<b>1,344.21</b>	<b>1,513.27</b>	<b>1,929.26</b>	<b>1,797.52</b>	<b>2,146.91</b>	<b>2,328.92</b>	<b>2,902.06</b>	<b>3,587.57</b>	<b>23.62</b>
Mato Grosso do Sul	369.26	320.81	384.65	422.64	472.11	413.61	619.92	644.55	873.64	945.27	8.20
Mato Grosso	541.13	466.38	580.13	657.82	795.38	792.63	723.78	811.80	863.59	898.52	4.04
Goiás	314.34	316.94	379.43	432.80	661.77	591.28	803.21	872.57	1,164.83	1,743.78	49.70

Source: MAPA/SPA/DAE.

**Table 2.2** - Production of hydrated ethanol, by region and by state –1999-2008

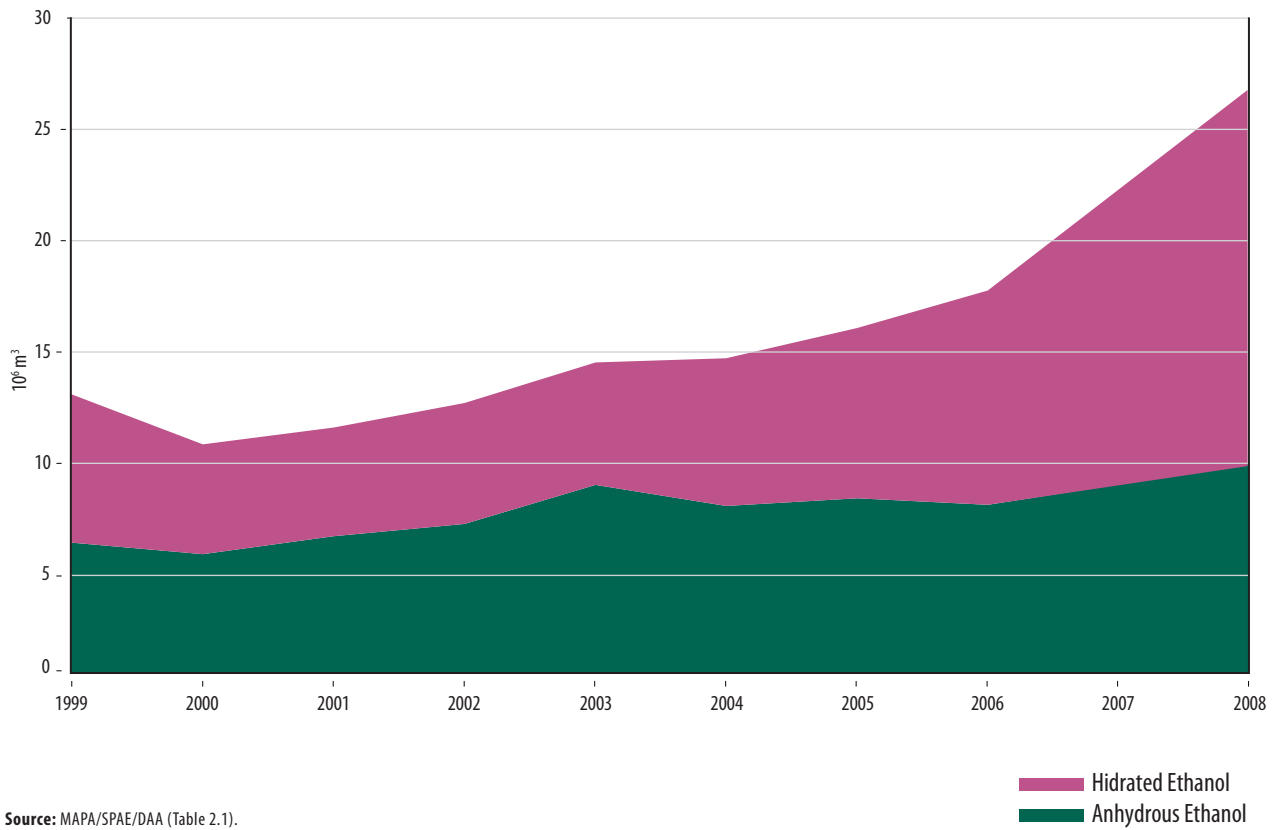
Brazilian Regions and states	Hydrated ethanol production (10 <sup>3</sup> m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>6,812.56</b>	<b>5,056.06</b>	<b>4,985.14</b>	<b>5,548.63</b>	<b>5,638.29</b>	<b>6,788.47</b>	<b>7,832.15</b>	<b>9,851.38</b>	<b>14,302.66</b>	<b>17,556.28</b>	<b>22.75</b>
<b>North</b>	<b>5.67</b>	<b>24.59</b>	<b>12.81</b>	<b>13.64</b>	<b>8.69</b>	<b>9.24</b>	<b>13.61</b>	<b>19.09</b>	<b>17.91</b>	<b>34.90</b>	<b>94.86</b>
Amazonas	-	3.71	1.85	3.89	4.38	4.67	6.01	5.65	8.26	7.96	-3.64
Pará	5.67	20.89	10.96	9.75	4.32	4.57	7.49	11.32	9.64	25.26	161.89
Tocantins	-	-	-	-	-	-	0.11	2.13	-	1.68	..
<b>Northeast</b>	<b>604.86</b>	<b>677.84</b>	<b>640.04</b>	<b>763.15</b>	<b>737.61</b>	<b>861.09</b>	<b>775.80</b>	<b>711.40</b>	<b>987.60</b>	<b>1,211.57</b>	<b>22.68</b>
Maranhão	12.11	10.73	9.38	6.22	5.61	8.72	11.08	20.26	50.15	60.44	20.51
Piauí	8.96	8.20	13.17	11.60	4.35	4.33	5.83	13.95	9.53	11.42	19.86
Ceará	2.44	0.78	1.19	0.98	0.32	0.15	1.02	1.00	0.57	6.90	1,108.76
Rio Grande do Norte	58.39	42.43	29.82	66.25	31.71	37.44	39.14	28.60	35.44	46.77	31.96
Paraíba	135.85	81.78	136.59	135.88	131.75	158.66	171.71	147.47	212.88	213.15	0.13
Pernambuco	176.79	187.89	123.33	152.07	165.27	151.66	128.22	112.28	212.07	297.94	40.49
Alagoas	159.59	282.28	278.63	344.89	351.10	447.87	361.04	328.90	399.25	494.34	23.82
Sergipe	25.79	36.91	25.27	28.86	29.47	33.78	39.05	30.48	12.46	29.09	133.49
Bahia	24.95	26.85	22.68	16.40	18.04	18.49	18.72	28.45	55.26	51.53	-6.75
<b>Southeast</b>	<b>5,059.41</b>	<b>3,185.66</b>	<b>3,102.00</b>	<b>3,441.03</b>	<b>3,320.67</b>	<b>4,279.67</b>	<b>5,115.17</b>	<b>6,877.56</b>	<b>9,875.79</b>	<b>12,347.86</b>	<b>25.03</b>
Minas Gerais	264.03	208.35	193.43	261.14	400.27	429.32	525.88	691.18	1,167.92	1,634.03	39.91
Espírito Santo	42.04	49.21	57.02	59.79	48.55	46.67	46.27	47.48	88.72	125.43	41.38
Rio de Janeiro	47.21	37.97	38.91	62.19	65.17	101.65	84.08	59.52	93.32	89.20	-4.42
São Paulo	4,706.13	2,890.12	2,812.64	3,057.92	2,806.68	3,702.04	4,458.95	6,079.38	8,525.84	10,499.20	23.15
<b>South</b>	<b>575.80</b>	<b>614.29</b>	<b>581.65</b>	<b>578.33</b>	<b>729.49</b>	<b>760.64</b>	<b>656.29</b>	<b>864.81</b>	<b>1,563.79</b>	<b>1,471.32</b>	<b>-5.91</b>
Paraná	571.77	611.29	576.34	571.92	723.44	755.82	652.95	859.31	1,556.79	1,465.00	-5.90
Rio Grande do Sul	4.03	3.00	5.31	6.41	6.05	4.82	3.34	5.50	7.00	6.32	-9.74
<b>Central-West</b>	<b>566.81</b>	<b>553.69</b>	<b>648.64</b>	<b>752.48</b>	<b>841.82</b>	<b>877.83</b>	<b>1,271.28</b>	<b>1,378.51</b>	<b>1,857.57</b>	<b>2,490.64</b>	<b>34.08</b>
Mato Grosso do Sul	195.10	168.21	168.67	211.58	252.44	239.99	401.83	437.40	659.43	709.03	7.52
Mato Grosso	205.81	197.76	304.12	334.30	313.08	364.17	436.01	485.88	486.18	546.22	12.35
Goiás	165.90	187.71	175.85	206.60	276.31	273.67	433.43	455.24	711.96	1,235.39	73.52

Source: MAPA/SPA/DA/DA.

**Table 2.3 - Ethanol exports, by region and by country of destination – 1999-2008**

Region and country of destination	Ethanol exports (m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>411,333</b>	<b>229,553</b>	<b>349,167</b>	<b>797,124</b>	<b>765,025</b>	<b>2,432,618</b>	<b>2,592,293</b>	<b>3,428,863</b>	<b>3,532,668</b>	<b>5,123,820</b>	<b>45.04</b>
<b>North America</b>	<b>4</b>	<b>35,185</b>	<b>35,576</b>	<b>89,568</b>	<b>85,893</b>	<b>545,613</b>	<b>387,652</b>	<b>1,836,156</b>	<b>972,212</b>	<b>1,776,481</b>	<b>82.73</b>
Canada	-	-	-	-	-	26,334	26,839	18,855	4,250	37,467	781.58
United States	4	33,291	19,866	35,054	44,958	428,863	260,715	1,767,060	918,752	1,709,084	86.02
Mexico	-	1,894	15,709	54,515	40,935	90,417	100,098	50,241	49,210	29,930	-39.18
<b>Central and South America</b>	<b>102,121</b>	<b>40,682</b>	<b>95,489</b>	<b>163,962</b>	<b>172,779</b>	<b>305,537</b>	<b>552,374</b>	<b>609,211</b>	<b>898,737</b>	<b>1,160,263</b>	<b>29.10</b>
Chile	-	-	30	-	5	1,131	1,287	1,324	2,006	2,843	41.70
Colombia	-	-	-	10,102	1,555	-	-	10,320	5,390	8,187	51.89
Costa Rica	28,674	15,152	10,638	29,607	32,491	117,893	126,693	91,265	170,367	109,504	-35.72
El Salvador	14,957	-	-	-	15,679	29,154	157,851	181,143	224,397	356,238	58.75
Ecuador	-	-	-	-	-	-	-	1,646	7,072	3,965	-43.93
Jamaica	56,185	25,419	69,155	118,695	104,077	135,759	133,288	131,543	308,968	436,503	41.28
Paraguay	-	-	-	1,024	79	977	-	-	-	5,068	-
Puerto Rico	-	-	-	-	-	5,243	10,261	10,371	13,993	10,246	-26.78
Trinidad and Tobago	-	-	-	-	14,965	7,155	36,116	71,579	158,869	224,510	41.32
Venezuela	-	-	4,520	51	117	2,903	49,478	104,605	-	-	-
Others	2,304	111	11,146	4,483	3,810	5,323	37,400	5,415	7,675	3,199	-58.31
<b>Europe</b>	<b>38,711</b>	<b>52,149</b>	<b>38,629</b>	<b>126,997</b>	<b>213,938</b>	<b>434,673</b>	<b>569,937</b>	<b>600,167</b>	<b>1,007,913</b>	<b>1,498,807</b>	<b>48.70</b>
Germany	-	24	-	-	-	-	-	-	-	4,486	-
Belgium	1,261	-	2,595	2,529	4,818	3,625	1,400	-	1,611	6,277	289.64
Spain	-	-	437	2,860	568	375	-	173	4,698	4,911	4.53
Finland	-	-	-	-	5,737	12,429	-	-	19,986	41,477	107.53
France	-	-	0	26	-	7,106	-	8,900	5,064	10,213	101.68
Netherlands	23,875	37,053	25,980	60,416	85,680	168,573	259,403	346,615	808,557	1,332,756	64.83
United Kingdom	-	-	1,689	72	4	-	13,662	27,008	47,784	81,972	71.55
Sweden	-	-	-	44,917	100,395	195,337	245,891	204,614	116,466	5,142	-95.59
Switzerland	4,744	10,124	2,047	5,037	10,853	22,401	9,896	-	-	11,572	-
Turkey	6,874	4,948	4,144	5,087	5,701	23,181	29,313	12,856	3,747	-	-
Others	1,958	-	1,736	6,053	184	1,647	10,372	1	-	1	-
<b>Middle East</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>48</b>	<b>43,849</b>	<b>5,191.3</b>	<b>-88.16</b>
United Arab Emirates	-	-	-	-	-	-	-	-	43,749	5,162	-88.20
Others	-	-	-	-	-	-	-	48	100	29	-70.74
<b>Africa</b>	<b>8,459</b>	<b>3,311</b>	<b>46,440</b>	<b>82,383</b>	<b>81,652</b>	<b>124,766</b>	<b>131,723</b>	<b>55,531</b>	<b>172,578</b>	<b>137,676</b>	<b>-20.22</b>
South Africa	-	-	9,719	4,447	4,097	-	-	2,008	-	5,563	-
Angola	151	0	1	522	413	5,848	6,577	3,178	11,661	9,871	-15.35
Ghana	442	-	1,794	13,456	28,170	7,849	3,861	6,075	33,172	19,759	-40.43
Nigeria	2,273	3,310	34,926	58,425	48,248	109,096	118,441	42,680	122,879	97,888	-20.34
Sierra Leone	-	-	-	1,133	328	803	1,566	648	2,355	2,313	-1.78
Others	5,594	-	-	4,401	397	1,170	1,278	942	2,511	2,281	-9.16
<b>Asia-Pacific</b>	<b>262,038</b>	<b>98,226</b>	<b>133,033</b>	<b>334,213</b>	<b>210,763</b>	<b>1,022,029</b>	<b>950,607</b>	<b>327,750</b>	<b>437,379</b>	<b>545,403</b>	<b>24.70</b>
Australia	-	-	-	161	-	-	-	-	-	6,374	-
China	2,673	-	-	-	-	-	-	-	-	4,050	-
Singapore	-	-	-	9,629	15,761	29,595	3,603	-	-	10,706	-
North Korea	15,919	-	4,316	5,385	23,295	-	-	-	4,790	1,755	-63.36
South Korea	93,330	35,672	64,403	169,199	56,436	281,230	216,356	92,273	66,693	186,782	180.06
Philippines	25,354	5,035	-	5,477	-	2,021	4,499	-	1,564	4,522	189.16
India	-	-	-	9,412	23,991	441,050	410,757	10,074	-	66,510	-
Japan	124,762	57,520	64,314	120,359	91,281	225,437	315,392	225,403	364,003	263,473	-27.62
Others	-	-	-	14,590	-	42,695	-	-	329	1,230	273.72

Source: MDIC/Secex.

**Figure 2.1** - Production of anhydrous and hydrated ethanol - 1999-2008

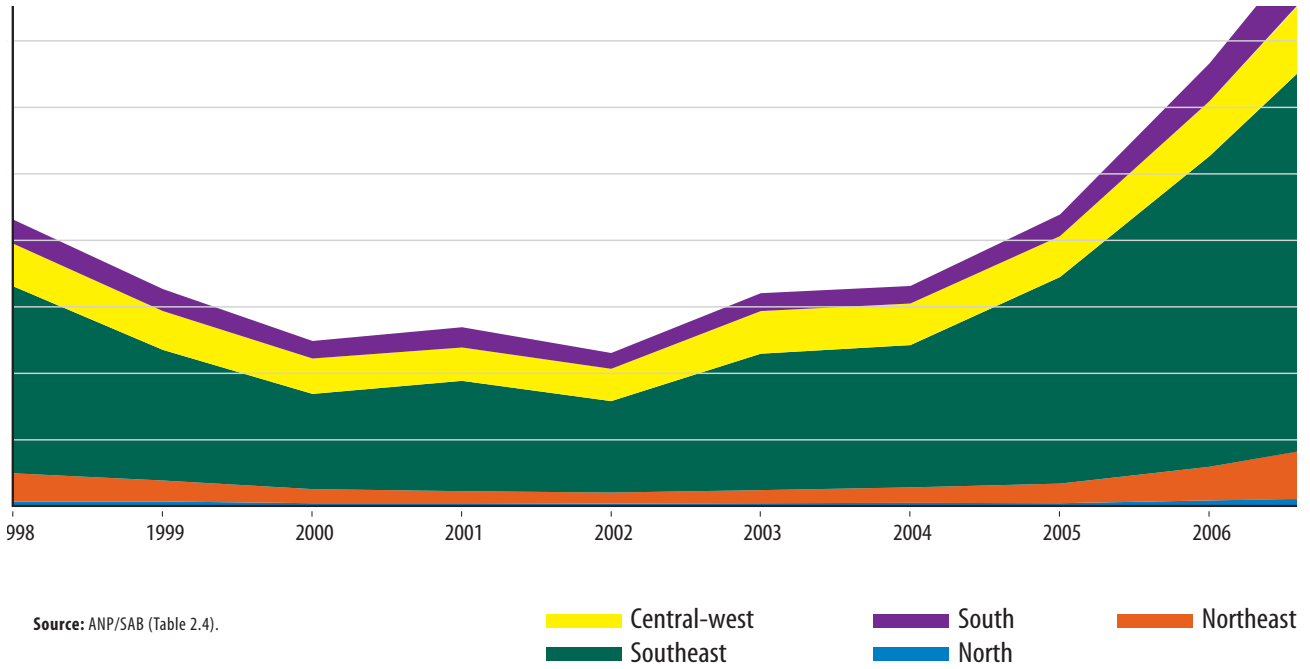
**Table 2.4 - Hydrated ethanol sales, by region and by state, at distribution level – 1999-2008**

Brazilian regions and states	Hydrated ethanol sales (10 <sup>3</sup> m <sup>3</sup> )										08/07 %
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Total</b>	<b>6,074.09</b>	<b>4,603.59</b>	<b>3,501.99</b>	<b>3,791.88</b>	<b>3,245.32</b>	<b>4,512.93</b>	<b>4,667.22</b>	<b>6,186.55</b>	<b>9,366.84</b>	<b>13,290.10</b>	<b>41.88</b>
<b>North</b>	<b>96.94</b>	<b>96.19</b>	<b>60.62</b>	<b>56.29</b>	<b>50.60</b>	<b>54.98</b>	<b>62.68</b>	<b>57.77</b>	<b>113.63</b>	<b>197.77</b>	<b>74.05</b>
Rondônia	16.34	23.62	12.35	14.54	11.94	12.74	13.63	10.62	21.53	40.58	88.46
Acre	6.10	7.15	4.77	4.43	3.65	3.75	4.00	4.14	6.37	9.51	49.23
Amazonas	19.17	16.75	13.53	12.27	12.56	13.53	19.02	16.27	32.50	54.70	68.29
Roraima	1.95	1.63	1.37	1.00	0.57	0.58	0.74	1.30	2.26	2.87	27.02
Pará	38.72	30.04	14.82	9.70	8.83	10.51	10.81	10.37	17.75	31.55	77.75
Amapá	1.94	1.52	1.23	1.30	0.88	0.77	0.89	0.93	1.45	2.77	90.82
Tocantins	12.72	15.48	12.55	13.04	12.17	13.09	13.60	14.16	31.76	55.78	75.65
<b>Northeast</b>	<b>597.36</b>	<b>445.71</b>	<b>300.23</b>	<b>255.50</b>	<b>233.85</b>	<b>282.56</b>	<b>328.33</b>	<b>417.41</b>	<b>712.96</b>	<b>1,235.70</b>	<b>73.32</b>
Maranhão	21.12	16.75	11.43	9.53	8.60	8.26	11.27	16.59	49.10	107.36	118.67
Piauí	29.15	25.76	20.98	18.31	15.45	16.22	14.97	14.04	19.44	28.27	45.45
Ceará	89.83	71.63	51.31	44.26	34.24	35.62	40.50	66.10	107.88	152.94	41.77
Rio Grande do Norte	52.19	37.58	25.67	22.23	18.01	23.36	26.50	33.37	67.38	94.71	40.55
Paraíba	53.94	37.88	23.63	22.63	30.45	32.05	34.03	36.60	63.59	89.66	41.00
Pernambuco	149.98	99.71	57.64	51.14	43.30	69.22	93.53	107.51	163.31	280.71	71.89
Alagoas	35.64	26.19	18.91	19.04	20.05	23.52	26.90	34.90	51.46	83.10	61.49
Sergipe	33.72	28.69	21.13	18.01	13.88	14.76	13.52	12.77	16.85	29.43	74.69
Bahia	131.78	101.52	69.53	50.35	49.87	59.55	67.11	95.53	173.95	369.51	112.42
<b>Southeast</b>	<b>3,964.06</b>	<b>2,769.65</b>	<b>2,014.07</b>	<b>2,339.58</b>	<b>1,941.27</b>	<b>2,893.98</b>	<b>3,023.31</b>	<b>4,381.77</b>	<b>6,578.10</b>	<b>9,022.76</b>	<b>37.16</b>
Minas Gerais	610.44	551.09	391.67	408.53	374.26	420.90	391.48	371.41	602.74	957.20	58.81
Espírito Santo	90.78	64.93	42.98	41.87	36.54	36.72	50.55	42.43	70.83	137.25	93.77
Rio de Janeiro	477.32	232.19	155.57	157.57	98.18	109.82	180.53	224.25	359.40	677.06	88.38
São Paulo	2,785.52	1,921.44	1,423.84	1,731.62	1,432.30	2,326.54	2,400.75	3,743.68	5,545.12	7,251.25	30.77
<b>South</b>	<b>909.24</b>	<b>824.39</b>	<b>752.73</b>	<b>713.56</b>	<b>683.83</b>	<b>904.65</b>	<b>883.41</b>	<b>872.40</b>	<b>1,163.95</b>	<b>1,605.38</b>	<b>37.93</b>
Paraná	477.38	445.21	430.83	370.42	377.08	538.76	518.24	520.58	701.25	904.33	28.96
Santa Catarina	208.94	178.18	156.64	164.03	155.00	173.87	175.27	193.06	242.40	376.16	55.18
Rio Grande do Sul	222.93	200.99	165.26	179.12	151.75	192.01	189.90	158.76	220.30	324.89	47.48
<b>Central-West</b>	<b>506.49</b>	<b>467.65</b>	<b>374.35</b>	<b>426.95</b>	<b>335.77</b>	<b>376.76</b>	<b>369.50</b>	<b>457.19</b>	<b>798.20</b>	<b>1,228.50</b>	<b>53.91</b>
Mato Grosso do Sul	72.89	69.10	58.51	64.16	61.18	71.21	71.59	65.29	105.47	166.28	57.65
Mato Grosso	48.46	61.17	44.99	84.20	40.02	59.25	70.98	72.47	107.20	276.85	158.25
Goiás	214.68	190.43	153.04	171.19	145.39	170.10	149.38	238.58	435.31	610.59	40.27
Distrito Federal	170.46	146.95	117.81	107.40	89.17	76.20	77.56	80.86	150.22	174.78	16.35

Source: ANP/SAB. Up to 2006, data as per Ordinance CNP n° 221/1981. Since 2007 data as per Ordinance ANP n° 17/2004.

Note: Up to 2006 data include distributors sales and their own consumption. Since 2007, data include solely distributors sales.

**Figure 2.2** - Hydrated ethanol sales, by region, at distribution level – 1999-2008





## 2.2 Biodiesel

Table 2.5 - Nominal capacity and production of biodiesel<sup>1</sup> - B100, by plant - 2008

Plant <sup>2</sup>	Location (State)	Nominal Capacity <sup>3</sup> (m <sup>3</sup> /year)	Production (m <sup>3</sup> )
<b>Total</b>		<b>3,315,339</b>	<b>1,167,128.1</b>
ADM	Rondonópolis (MT)	204,600	171,651.8
Agrenco	Alto Araguaia (MT)	198,000	2,045.5
Agropalma	Belém (PA)	24,000	2,625.2
Agrosoja	Sorriso (MT)	24,000	5,149.0
Amazonbio	Ji-Paraná (RO)	13,500	4.0
Ambra	Varginha (MG)	720	-
Araguassu	Porto Alegre do Norte (MT)	30,000	1.8
Barralcool	Barra do Bugres (MT)	57,138	22,370.1
Big Frango	Rolândia (PR)	12,000	16.5
Binatural	Formosa (GO)	25,200	1,118.1
Bio Óleo	Cuiabá (MT)	3,000	225.6
Biocamp	Campo Verde (MT)	46,200	11,838.4
Biocapital	Charqueada (SP)	247,200	69,665.3
Biocar	Dourados (MS)	9,000	-
Biolix	Rolândia (PR)	9,000	-
Biominas	Araxá (MG)	9,000	-
Bionorte	São Miguel do Araguaia (GO)	28,410	-
Biopar	Nova Marilândia (MT)	10,800	957.4
Biopar	Rolândia (PR)	36,000	7,277.9
Biotins	Paraíso Tocantins (TO)	8,100	2,833.0
Bioverde	Taubaté (SP)	80,232	30,356.6
Bracol	Lins (SP)	99,900	69,196.4
Brasil Ecodiesel	Cratêis (CE)	108,000	14,416.5
Brasil Ecodiesel	Florianópolis (PI)	81,000	4,547.6
Brasil Ecodiesel	Iraquara (BA)	108,000	36,264.3
Brasil Ecodiesel	Porto Nacional (TO)	108,000	10,301.5
Brasil Ecodiesel	Rosário do Sul (RS)	108,000	37,923.6
Brasil Ecodiesel	São Luís (MA)	108,000	36,172.3
Bsbios	Passo Fundo (RS)	103,500	87,342.1
Caramuru	São Simão (GO)	187,500	108,270.5
Cesbra	Volta Redonda (RJ)	18,000	-
CLV	Colider (MT)	30,000	60.9
Comanche	Simões Filho (BA)	100,500	20,097.9
Comandolli	Rondonópolis (MT)	3,000	-
Cooami	Sorriso (MT)	3,000	14.6
Coomisa	Sapezal (MT)	3,600	11.8
Cooperbio	Lucas do Rio Verde (MT)	3,000	153.4
Cooperfeliz	Feliz Natal (MT)	3,000	693.0
Dhaymers	Taboão da Serra (SP)	7,800	-
DVH	Tailândia (PA)	10,500	-
Fertibom	Catanduva (SP)	42,000	16,375.9
Fiagril	Lucas do Rio Verde (MT)	122,988	68,999.9
Frigol	Lençóis Paulista (SP)	12,000	-
Fusermann	Barbacena (MG)	9,000	-
Granol	Anápolis (GO)	183,900	131,975.4
Granol	Cachoeira do Sul (RS)	140,001	85,144.6
Granol	Campinas (SP)	90,000	-
Innovatti	Mairinque (SP)	9,000	-
KGB	Sinop (MT)	1,500	-
Nutec	Fortaleza (CE)	720	-
Oleoplan	Veranópolis (RS)	198,000	95,645.7
Ouro Verde	Rolim de Moura (RO)	5,100	223.6
Petrobras	Candeias (BA)	56,400	9,619.9
Petrobras	Montes Claros (MG)	56,400	-
Petrobras	Quixadá (CE)	56,400	4,791.0
Renobras	Dom Aquino (MT)	6,000	-
Soyminas	Cássia (MG)	12,000	-
SSIL	Rondonópolis (MT)	30	29.5
Tauá Biodiesel	Nova Mutum (MT)	30,000	-
Transportadora Caibiense	Rondonópolis (MT)	4,500	720.0
Usibio	Sinop (MT)	6,000	-
Vermohlen	Rondonópolis (MT)	3,000	-

Source: ANP/SRP, as per Ordinance ANP n° 54/2001.

<sup>1</sup>Pure biodiesel or B100, as per Ordinance ANP n° 42/2004. <sup>2</sup>Authorized plants installed until 12/31/2008.

<sup>3</sup>Considering 300 operating days.

**Map 2.1 - Infrastructure for biodiesel production - 2008**



# Conversion Factors

## Symbols of Units (International System)

(k) quilo =  $10^3$   
(M) mega =  $10^6$   
(G) giga =  $10^9$   
(T) tera =  $10^{12}$   
(P) peta =  $10^{15}$   
(E) exa =  $10^{18}$

## Conversion Factors

1 m<sup>3</sup> = 6.28981 barrels  
1 barril = 0.158987 m<sup>3</sup>  
1 joule (J) = 0.239 cal  
1 BTU = 252 cal  
1 boe = 1,390 Mcal  
1 toe = 10,000 Mcal

Source: OLADE, [www.olade.org.ec/sieehome/estadisticas.htm](http://www.olade.org.ec/sieehome/estadisticas.htm) (on 31/01/03)

# Glossary

**Anhydrous Ethanol:** obtained in Brazil through the fermentation of sugar cane molasses. It has an alcoholic content of 99.3° INPM (established by Ordinance ANP n° 45/2001). The anhydrous ethanol is used in mixtures with gasoline A specified by Ordinance n° 197/1999 for producing gasoline type C. The anhydrous ethanol content in gasoline is established by a Ministry of Agriculture Ordinance, conditioned to approval by the Interministerial Sugar and Alcohol Board, and it may vary between 20% and 25% (as determined by articles 9 of Law n° 8723/1993, amended by Provisional Measure n° 114/2003). In 2008, the percentage was 25% .

**Apparent Consumption:** the summation of parcels referring to production and imports, minus the exported volume.

**bbl/d:** barrels per day.

**Bidding Round:** denomination for the several international public bids promoted by ANP, aiming the granting of concessions to the winning bidders (previously qualified companies) for exploring and producing oil and natural gas in pre-defined areas (blocks).

**Biodiesel:** fuel composed by alkyl esters, derived from vegetal oils or animal fats, according to the specification of the Technical Rule n° 4/2004, which is part of Ordinance ANP n° 42/2004 or any legislation that would replace it in the future. This fuel should contain specific markers to allow its quantification and identification, according to Ordinance ANP n° 37/2005.

**boe:** "barrel of oil equivalent". A measurement unit for equivalent energy, per convention equal to 1,390 Mcal.

**Calorie:** this book adopts the calorie at 15°C (cal<sub>15</sub>). 1 cal<sub>15</sub> is the amount of thermal energy required to heat 1g of air-free water from 14.5°C to 15.5°C under a constant pressure of 101.325 kPa (quiloPascals). Conversion factor: 1 cal<sub>15</sub> = 4,1855 J.

**Concession:** an administrative contract through which ANP grants to companies that meet the technical, economic and legal requirements the right to explore and produce oil and natural gas in the Brazilian territory.

**Concessionaire:** a company incorporated under the Brazilian law, with main office and management located in Brazil, that was granted a concession contract by ANP for the exploration and production of oil and natural gas in a

sedimentary basin located in the Brazilian territory.

**Ethanol:** Composed of two carbon atoms, five hydrogen atoms and one hydroxyl group (C<sub>2</sub>H<sub>5</sub>OH), it is obtained in Brazil through the fermentation of sugar cane molasses. Used as a fuel in Otto cycle internal combustion engines, mainly on road transportation.

**Gasoline A:** gasoline produced in Brazil or imported by authorized economic agents, free from oxygenated components and marketed through distributors of oil liquid products.

**Gasoline C:** gasoline composed of a mixture of gasoline A and anhydrous ethanol. The mandatory proportion of alcohol in the mixture is established by an Ordinance of the Ministry of Agriculture, conditioned to approval by the Interministerial Sugar and Alcohol Board, and may vary between 20% and 25% (as determined by articles 9 of Law n° 8723/1993, amended by Provisional Measure n° 114/2003). In 2006, the percentage was 25% until 2/28, 20% between 3/1 and 11/19, and 23% as of 6/1.

**Hydrated Ethanol:** motor vehicle fuel obtained in Brazil through the fermentation of sugar cane molasses. When free from hydrocarbons, it has an alcoholic content between 92.6° and 93.8° INPM (established by Ordinance ANP n° 45/2001). Used in Otto cycle internal combustion engines, specifically on road transportation, in alcohol powered vehicles.

**INPM:** Represents the alcohol percentage in mass in the mixture (% m/m) used in Brazil. For the next year, volume percentage in the mixture shall be considered.

**Liquefied Petroleum Gas (LPG):** Natural gas cooled to temperatures below -160°C for transfer and storage in liquid state. Mainly composed by methane, although it may have minimum quantities of ethane, propane, nitrogen and other components generally found in natural gas.

**Natural Gas Processing Plant (NGPP):** plant designed to separate heavy components (propane and butane) from natural gas.

**Petroleum Law:** Law n° 9478, of August 6<sup>th</sup>, 1997.

**Refining capacity:** processing capacity for which an industrial plant was designed, measured in bbl/d or m<sup>3</sup>/d.

**Refining Capacity per Operation Day:** maximum load volume that the primary distillation plant(s) can process in a 24-hour period, when operating at full capacity, under optimal and stable conditions in terms of raw materials, products and downstream plants, without any maintenance interruptions scheduled in any of the components of the

refinery's production system. It is expressed in operation  $m^3/d$  or bbl/stream day.

**Refining Capacity per Calendar Day:** maximum load volume, expressed in a 24-hour period, that the primary distillation plant(s) can process, under average and normal operating conditions, during the complete cycle of plant maintenance activities. This capacity takes into account any reduction in capacity of all the refinery's plants in continuous operation resulting from limitations that may delay, interrupt or reduce production. It is expressed in  $m^3$ /calendar day or bbl/calendar day.

**Round Zero:** denominates the act of signing, under the provisions of the Petroleum Law, article 34, on August 6<sup>th</sup> 1998, of licensing contracts between ANP and Petrobras for 397 blocks that were already under exploration, development or production by the state-owned company at the time the Petroleum Law was enforced.

**toe:** "ton of oil equivalent". A measuring unit for equivalent energy, per convention, equal to 10,000 Mcal.

**Shale:** generally clay sedimentary rock, organic material (kerogen) –rich. When submitted to high temperatures, shale releases oil, water and gas, as well as a carbon solid residual.

# List of Sources

## **Abast – Abastecimento, Marketing e Comercialização**

**Petrobras – Petróleo Brasileiro S.A.**

**MME – Ministério de Minas e Energia**

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## **Anuário Estatístico Brasileiro do Petróleo, Gás Natural e Biocombustíveis 2009**

**ANP – Agência Nacional do Petróleo, Gás Natural e Biocombustíveis**

**MME – Ministério de Minas e Energia**

Av. Rio Branco, 65 – 12º ao 22º andar

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## **DAA – Departamento da Cana de Açúcar e Agroenergia**

**SPAÉ – Secretaria de Produção e Agroenergia**

**MAPA – Ministério da Agricultura, Pecuária e Abastecimento**

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## **Secex – Secretaria de Comércio Exterior**

**MDIC – Ministério do Desenvolvimento, Indústria e Comércio Exterior**

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Site: [www.desenvolvimento.gov.br/sitio/secex](http://www.desenvolvimento.gov.br/sitio/secex)

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## **Serplan – Serviço de Planejamento<sup>1</sup>**

**Petrobras – Petróleo Brasileiro S.A.**

**MME – Ministério de Minas e Energia**

## **SIX – Superintendência de Industrialização do Xisto**

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<sup>1</sup> Department extinguished in 2000. Currently, ABAST is the Department responsible for providing information to the Brazilian Oil and Natural Gas Statistical Yearbook.





**anp**

National Agency of  
Petroleum, Natural Gas and Biofuels