

2010



Oil, Natural Gas and Biofuels Statistical Yearbook



Oil, Natural Gas and Biofuels Statistical Yearbook
2010

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Oil, Natural Gas and Biofuels Statistical Yearbook 2010



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Presentation

The year 2009 was characterized by the severe recession, derived from the financial crisis started in 2008, which has affected mostly the developed economies, although some recovery signs were observed during the second half of the year. As a consequence, world oil demand remained flat. Its pace of growth, in the near future, should rely on the demand expansion of emerging economies. Brazil has also suffered the crisis effects, felt mainly in the reduction of exports. However, its economy displayed a vigorous recovery in the second half of 2009, with reflections in the performance of oil, natural gas and biofuels sectors.

Despite growing at a smaller pace if compared to 2008, fuel sales increased 2.7%. Ethanol attracted the spotlights, with a 24% raise in its consumption, due to the boom of flex-fuel vehicles sales. Biodiesel commercialization was boosted by the increase of biodiesel content in diesel-biodiesel mixture (from 3% to 4%), in July, 2009. That change was responsible for an increase of 39% in biodiesel sales, although the baseline for that growth remains small. The dissemination of ethanol and biodiesel consumption contributes to the strengthening of Brazil's leading position in the field of renewable energy use.

In the midstream, nominal capacity for biodiesel production as well as actual production have increased by 32.5% and 37.8%, respectively. However, the highlight fact of the year was the approval of the Natural Gas Law, which creates new perspectives for that industry. Among other measures, the law established the concession system for the construction of new pipelines. The Agency is supposed to promote the bidding process, as well as creating the contracts to be signed. The expansion of the pipeline grid, with the construction of more than 500 km of pipelines, helps to consolidate Brazilian's option for the development of its natural gas industry.

In upstream, preliminary estimates performed by Petrobras in the pre-salt area suggests that Tupi play possesses recoverable volumes between 5 and 8 billion barrels of oil equivalent (boe), while Guara play, which is also located at Santos Basin, has a potential between 1,1 and 2 billion barrels of light oil and natural gas. Pre-salt discoveries motivated the Government to propose a new E&P model for those areas, based on Production Sharing Contracts (PSC), which is currently being discussed at the Congress. As the new model – generally used for low risk and high potential areas – establishes the appropriation of the extracted oil by the State, it allows for a better adjustment between the oil production and the growth of the industry as a whole, thus preventing the so-called oil disease.

Government's proposal also determines the creation of a Social Fund, fed by the O&G activity revenues, which will provide massive investments in education and in regional development projects. Therefore, the new model should guarantee Brazilian's industrialization and higher participation of the society in the benefits of O&G revenues, as well as the utilization of that resource for improving country's social indicators.

Haroldo Borges Rodrigues Lima
Director-general

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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 criterium.

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, 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.

Brazilian Oil and Natural Gas Reserves

Oil and Natural Gas data series are subject to changes. Current values are available on ANP website (www.anp.gov.br/?pg=17639)

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 No. 17/2004. Data were last updated in April, 2010.

Foreign Trade

Data on imports and exports of oil and oil products were extracted from Ministério da Indústria e Comércio (MDIC)/Secretaria de Comércio Exterior (Secex) data system. Those data are subjected 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.

A large, horizontal, metallic industrial storage tank, likely for oil or gas, is the central focus of the image. It is supported by a yellow metal framework. In the foreground, there are various pipes, valves, and a blue metal structure. The background is a clear blue sky.

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 December 31st, 2009 (continue)

Blocks in the exploration phase on December 31 st , 2009					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Rounds	Concessionaries (%)
Alagoas	Onshore	SEAL-T-187_R10	SEAL-T-187	Round 10	Integral ¹ (100)
	Onshore	SEAL-T-240_R10	SEAL-T-240	Round 10	Petrobras ¹ (100)
	Onshore	SEAL-T-252_R10	SEAL-T-252	Round 10	Petrobras ¹ (100)
	Onshore	SEAL-T-253_R10	SEAL-T-253	Round 10	Petrobras ¹ (100)
Almada	Offshore	BM-CAL-5	BM-CAL-5	Round 3	Petrobras ¹ (45)/Queiroz Galvão (18.34)/El Paso (18.33)/Rio das Contas (18.33)
Amazonas	Onshore	AM-T-62_R10	AM-T-62	Round 10	Petrobras ¹ (60)/Petrogal Brasil (40)
	Onshore	AM-T-83_R10	AM-T-83	Round 10	STR ¹ (100)
	Onshore	AM-T-84_R10	AM-T-84	Round 10	Petrobras ¹ (60)/Petrogal Brasil (40)
	Onshore	AM-T-85_R10	AM-T-85	Round 10	Petrobras ¹ (60)/Petrogal Brasil (40)
Barreirinhas	Offshore	BM-BAR-1	BM-BAR-1	Round 3	Petrobras ¹ (50)/Devon (25)/ONCG Campos (25)
	Offshore	BM-BAR-3	BM-BAR-3	Round 4	Devon ¹ (45)/SK Brasil (30)/Petrobras (25)
	Offshore	BM-BAR-4	BM-BAR-377	Round 5	Petrobras ¹ (100)
	Offshore	BM-BAR-5	BM-BAR-175	Round 6	Petrobras ¹ (100)
Camamu	Offshore	BM-CAL-7	CAL-M-120	Round 6	Petrobras ¹ (60)/Statoil Brasil (40)
	Offshore	BM-CAL-7	CAL-M-186	Round 6	Petrobras ¹ (60)/Statoil Brasil (40)
	Offshore	BM-CAL-8	CAL-M-122	Round 6	Statoil Brasil ¹ (100)
	Offshore	BM-CAL-9	CAL-M-188	Round 6	Petrobras ¹ (100)
	Offshore	BM-CAL-10	CAL-M-3	Round 6	Statoil Brasil ¹ (60)/Petrobras(40)
	Offshore	BM-CAL-10	CAL-M-58	Round 6	Statoil Brasil ¹ (60)/Petrobras(40)
	Offshore	BM-CAL-10	CAL-M-60	Round 6	Statoil Brasil ¹ (60)/Petrobras(40)
	Offshore	BM-CAL-11	CAL-M-248	Round 6	Petrobras ¹ (100)
	Offshore	BM-CAL-12	CAL-M-312	Round 6	Petrobras ¹ (60)/El Paso (20)/Queiroz Galvão (20)
	Offshore	BM-CAL-12	CAL-M-372	Round 6	Petrobras ¹ (60)/El Paso (20)/Queiroz Galvão (20)
	Offshore	BM-CAL-13	CAL-M-314	Round 7	Devon ¹ (100)
	Offshore	BM-CAL-14	CAL-M-374	Round 7	Eni Oil ¹ (100)
Campos	Offshore	BM-C-14	BM-C-14	Round 3	Petrobras ¹ (50)/Total E&P Brasil (50)
	Offshore	BM-C-25	BM-C-25	Round 4	Petrobras ¹ (100)
	Offshore	BM-C-26	C-M-78	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-26	C-M-98	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-27	C-M-119	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-27	C-M-120	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-27	C-M-122	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-27	C-M-145	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-27	C-M-146	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-27	C-M-95	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-27	C-M-96	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-28	C-M-333	Round 5	Petrobras ¹ (100)
	Offshore	BM-C-29	C-M-202	Round 6	Anadarko ¹ (50)/Ecopetrol Óleo e Gás (50)
	Offshore	BM-C-30	C-M-101	Round 6	Anadarko ¹ (30)/Devon (25)/IBV Brasil Petróleo (25)/SK Brasil (20)
	Offshore	BM-C-31	C-M-103	Round 6	Petrobras ¹ (60)/Shell (20)/Inpex (20)
	Offshore	BM-C-31	C-M-151	Round 6	Petrobras ¹ (60)/Shell (20)/Inpex (20)
	Offshore	BM-C-32	C-M-61	Round 6	Devon ¹ (40)/Anadarko (33)/SK Brasil (27)
	Offshore	BM-C-33	C-M-539	Round 7	Repsol ¹ (50)/Statoil Brasil (50)
	Offshore	BM-C-34	C-M-471	Round 7	Devon ¹ (50)/Petrobras (50)
	Offshore	BM-C-34	C-M-473	Round 7	Devon ¹ (50)/Petrobras (50)
	Offshore	BM-C-35	C-M-535	Round 7	Petrobras ¹ (65)/Devon (35)
	Offshore	BM-C-36	C-M-401	Round 7	Petrobras ¹ (100)
	Offshore	BM-C-36	C-M-403	Round 7	Petrobras ¹ (100)
	Offshore	BM-C-37	C-M-560	Round 9	Maersk ¹ (50)/OGX(50)
	Offshore	BM-C-38	C-M-591	Round 9	Maersk ¹ (50)/OGX(50)
	Offshore	BM-C-39	C-M-466	Round 9	OGX ¹ (100)
	Offshore	BM-C-40	C-M-499	Round 9	OGX ¹ (100)
	Offshore	BM-C-41	C-M-592	Round 9	OGX ¹ (100)
	Offshore	BM-C-42	C-M-620	Round 9	OGX ¹ (100)
	Offshore	BM-C-43	C-M-621	Round 9	OGX ¹ (100)
	Offshore	BM-C-44	C-M-593	Round 9	Petrobras ¹ (47.5)/ Petrogal Brasil (37.5)/ Ecopetrol Óleo e Gás (15)
	Offshore	BM-C-45	C-M-498	Round 9	Starfish ¹ (30)/Sonangol P&P (70)
	Offshore	BM-C-46	C-M-462	Round 9	Starfish ¹ (30)/Sonangol P&P (70)
	Offshore	BM-C-47	C-M-529	Round 9	StatoilHydro Brasil ¹ (50)/Statoil Brasil (50)
	Offshore	BM-C-47	C-M-530	Round 9	StatoilHydro Brasil ¹ (50)/Statoil Brasil (50)

Frame 1.1 – Blocks in the exploration phase on December 31st, 2009 (continue)

Blocks in the exploration phase on December 31 st , 2009					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Rounds	Concessionaries (%)
Ceará	Offshore	BM-CE-1	BM-CE-1	Round 3	Petrobras ¹ (100)
	Offshore	BM-CE-2	BM-CE-2	Round 3	Petrobras ¹ (100)
Espírito Santo	Offshore	BM-ES-5	BM-ES-5	Round 3	Petrobras ¹ (65)/El Paso (35)
	Onshore/Offshore	BM-ES-20	BM-ES-20	Round 4	Newfield ¹ (100)
	Onshore	BT-ES-14	BT-ES-14	Round 4	Petrobras ¹ (50)/Partex Brasil (50)
	Onshore	BT-ES-15	BT-ES-15	Round 4	Petrobras ¹ (100)
	Offshore	BM-ES-21	ES-M-414	Round 6	Petrobras ¹ (80)/CVRD (10)/Repsol (10)
	Offshore	BM-ES-22	ES-M-466	Round 6	Petrobras ¹ (100)
	Offshore	BM-ES-22	ES-M-468	Round 6	Petrobras ¹ (100)
	Offshore	BM-ES-22	ES-M-523	Round 6	Petrobras ¹ (100)
	Offshore	BM-ES-22	ES-M-527	Round 6	Petrobras ¹ (100)
	Offshore	BM-ES-23	ES-M-525	Round 6	Petrobras ¹ (65)/Shell (35)
	Offshore	BM-ES-24	ES-M-588	Round 6	Petrobras ¹ (40)/Anadarko (30)/IBV Brasil Petróleo (30)
	Offshore	BM-ES-24	ES-M-661	Round 6	Petrobras ¹ (40)/Anadarko (30)/IBV Brasil Petróleo (30)
	Offshore	BM-ES-24	ES-M-663	Round 6	Petrobras ¹ (40)/Anadarko (30)/IBV Brasil Petróleo (30)
	Offshore	BM-ES-25	ES-M-590	Round 6	Petrobras ¹ (80)/Anadarko (20)
	Onshore	BT-ES-25	ES-T-364	Round 6	Petrobras ¹ (100)
	Onshore	BT-ES-25	ES-T-373	Round 6	Petrobras ¹ (100)
	Onshore	BT-ES-25	ES-T-381	Round 6	Petrobras ¹ (100)
	Onshore	BT-ES-25	ES-T-390	Round 6	Petrobras ¹ (100)
	Offshore	BM-ES-26	ES-M-413	Round 7	Petrobras ¹ (100)
	Offshore	BM-ES-27	ES-M-411	Round 7	Petrobras ¹ (65)/ Shell (17.5)/CVRD (17.5)
	Offshore	BM-ES-27	ES-M-436	Round 7	Petrobras ¹ (65)/ Shell (17.5)/CVRD (17.5)
	Offshore	BM-ES-27	ES-M-437	Round 7	Petrobras ¹ (65)/ Shell (17.5)/CVRD (17.5)
	Offshore	BM-ES-28	ES-M-438	Round 7	Shell ¹ (82.50)/CVRD (17.5)
	Offshore	BM-ES-29	ES-M-737	Round 7	Repsol ¹ (100)
	Offshore	BM-ES-30	ES-M-665	Round 7	Hess Brasil ¹ (60)/Repsol (40)
	Offshore	BM-ES-31	ES-M-592	Round 7	Petrobras ¹ (80)/Petrogal Brasil (20)
	Offshore	BM-ES-32	ES-M-594	Round 7	Petrobras ¹ (60)/Statoil Brasil (40)
	Onshore	BT-ES-32	ES-T-383	Round 7	Petrobras ¹ (100)
	Offshore	BM-ES-32	ES-T-418	Round 7	Petrobras ¹ (100)
	Onshore	BT-ES-33	ES-T-466	Round 7	Vipetro ¹ (100)
	Onshore	BT-ES-36	ES-T-442	Round 7	Petrosynergy ¹ (100)
	Offshore	BM-ES-37	ES-M-416	Round 9	Perenco Brasil ¹ (50)/OGX (50)
	Offshore	BM-ES-38	ES-M-418	Round 9	Perenco Brasil ¹ (50)/OGX (50)
	Offshore	BM-ES-39	ES-M-472	Round 9	Perenco Brasil ¹ (50)/OGX (50)
	Offshore	BM-ES-40	ES-M-529	Round 9	Perenco Brasil ¹ (50)/OGX (50)
	Offshore	BM-ES-41	ES-M-531	Round 9	Perenco Brasil ¹ (50)/OGX (50)
	Offshore	BM-ES-42	ES-M-470	Round 9	ONGC Campos ¹ (100)
	Onshore	BT-ES-37	ES-T-410	Round 9	Starfish ¹ (50)/Petrobras (50)
	Onshore	BT-ES-38	ES-T-391	Round 9	Vipetro ¹ (100)
	Onshore	BT-ES-38	ES-T-392	Round 9	Vipetro ¹ (100)
	Onshore	BT-ES-39	ES-T-318	Round 9	BrazAlta Brasil ¹ (100)
	Onshore	BT-ES-41	ES-T-400	Round 9	Cowan Petróleo e Gás ¹ (90)/Lábrea (10)
	Onshore	BT-ES-42	ES-T-401	Round 9	Starfish ¹ (50)/Petrobras (50)
Foz do Amazonas	Offshore	BM-FZA-4	FZA-M-217	Round 5	Petrobras ¹ (100)
	Offshore	BM-FZA-4	FZA-M-252	Round 5	Petrobras ¹ (100)
Jequitinhonha	Offshore	BM-J-1	BM-J-1	Round 3	Petrobras ¹ (100)
	Offshore	BM-J-2	BM-J-2	Round 4	Queiroz Galvão ¹ (100)
	Offshore	BM-J-3	BM-J-3	Round 4	Petrobras ¹ (60)/ Statoil (40)
	Offshore	BM-J-4	J-M-115	Round 5	Petrobras ¹ (100)
	Offshore	BM-J-4	J-M-165	Round 5	Petrobras ¹ (100)
	Offshore	BM-J-4	J-M-3	Round 5	Petrobras ¹ (100)
	Offshore	BM-J-4	J-M-63	Round 5	Petrobras ¹ (100)
	Offshore	BM-J-5	J-M-59	Round 6	Petrobras ¹ (100)
	Offshore	BM-J-5	J-M-61	Round 6	Petrobras ¹ (100)
Mucuri	Onshore	BT-ES-29	ES-T-227	Round 7	Petrogal Brasil ¹ (50)/Petrobras (50)
Pará – Maranhão	Offshore	BM-PAMA-3	BM-PAMA-3	Round 3	Petrobras ¹ (100)
	Offshore	BM-PAMA-8	PAMA-M-135	Round 6	Petrobras ¹ (100)
	Offshore	BM-PAMA-8	PAMA-M-192	Round 6	Petrobras ¹ (100)
	Offshore	BM-PAMA-8	PAMA-M-194	Round 6	Petrobras ¹ (100)
	Offshore	BM-PAMA-9	PAMA-M-187	Round 9	Petrobras ¹ (40)/ CVRD (30)/ Ecopetrol Óleo e Gás (30)
	Offshore	BM-PAMA-10	PAMA-M-188	Round 9	Petrobras ¹ (40)/ CVRD (30)/ Ecopetrol Óleo e Gás (30)
	Offshore	BM-PAMA-11	PAMA-M-222	Round 9	Petrobras ¹ (40)/ CVRD (30)/ Ecopetrol Óleo e Gás (30)
	Offshore	BM-PAMA-12	PAMA-M-223	Round 9	Petrobras ¹ (40)/ CVRD (30)/ Ecopetrol Óleo e Gás (30)
	Offshore	BM-PAMA-13	PAMA-M-407	Round 9	OGX ¹ (100)
	Offshore	BM-PAMA-14	PAMA-M-408	Round 9	OGX ¹ (100)
	Offshore	BM-PAMA-15	PAMA-M-443	Round 9	OGX ¹ (100)

Frame 1.1 – Blocks in the exploration phase on December 31st, 2009 (continue)

Blocks in the exploration phase on December 31 st , 2009					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Rounds	Concessionaries (%)
Pará – Maranhão	Offshore	BM-PAMA-16	PAMA-M-591	Round 9	OGX ¹ (100)
	Offshore	BM-PAMA-17	PAMA-M-624	Round 9	OGX ¹ (100)
Parecis – Alto Xingu	Onshore	PRC-T-104_R10	PRC-T-104	Round 10	Petrobras ¹ (100)
	Onshore	PRC-T-105_R10	PRC-T-105	Round 10	Petrobras ¹ (100)
	Onshore	PRC-T-106_R10	PRC-T-106	Round 10	Petrobras ¹ (100)
	Onshore	PRC-T-121_R10	PRC-T-121	Round 10	Petrobras ¹ (100)
	Onshore	PRC-T-122_R10	PRC-T-122	Round 10	Petrobras ¹ (100)
	Onshore	PRC-T-123_R10	PRC-T-123	Round 10	Petrobras ¹ (100)
Parnaíba	Onshore	BT-PN-1	PN-T-102	Round 9	Imetame ¹ (33.34)/Orteng (33.33)/Delp (33.33)
	Onshore	BT-PN-2	PN-T-66	Round 9	Devon ¹ (40)/ Petrobras (40)/ CVRD (20)
	Onshore	BT-PN-3	PN-T-86	Round 9	Petrobras ¹ (40)/ Devon (40)/ CVRD (20)
	Onshore	BT-PN-4	PN-T-48	Round 9	OGX ¹ (70)/Petra Energia (30)
	Onshore	BT-PN-5	PN-T-49	Round 9	OGX ¹ (70)/Petra Energia (30)
	Onshore	BT-PN-6	PN-T-50	Round 9	OGX ¹ (70)/Petra Energia (30)
	Onshore	BT-PN-7	PN-T-67	Round 9	OGX ¹ (70)/Petra Energia (30)
	Onshore	BT-PN-8	PN-T-68	Round 9	OGX ¹ (70)/Petra Energia (30)
	Onshore	BT-PN-9	PN-T-84	Round 9	OGX ¹ (70)/Petra Energia (30)
	Onshore	BT-PN-10	PN-T-85	Round 9	OGX ¹ (70)/Petra Energia (30)
Pelotas	Offshore	BM-P-2	P-M-1267	Round 6	Petrobras ¹ (100)
	Offshore	BM-P-2	P-M-1269	Round 6	Petrobras ¹ (100)
	Offshore	BM-P-2	P-M-1271	Round 6	Petrobras ¹ (100)
	Offshore	BM-P-2	P-M-1349	Round 6	Petrobras ¹ (100)
	Offshore	BM-P-2	P-M-1351	Round 6	Petrobras ¹ (100)
	Offshore	BM-P-2	P-M-1353	Round 6	Petrobras ¹ (100)
Pernambuco – Paraíba	Offshore	BM-PEPB-1	PEPB-M-783	Round 9	Petrobras ¹ (80)/Petrogal Brasil (20)
	Offshore	BM-PEPB-2	PEPB-M-837	Round 9	Petrobras ¹ (80)/Petrogal Brasil (20)
	Offshore	BM-PEPB-3	PEPB-M-839	Round 9	Petrobras ¹ (80)/Petrogal Brasil (20)
Potiguar	Onshore	BT-POT-3	BT-POT-3	Round 2	Petrosynergy ¹ (100)
	Onshore	BT-POT-4	BT-POT-4	Round 2	Petrobras ¹ (100)
	Onshore	BT-POT-5	BT-POT-5	Round 3	Petrosynergy ¹ (100)
	Onshore/Offshore	BM-POT-11	BM-POT-11	Round 4	Petrobras ¹ (100)
	Onshore/Offshore	BM-POT-13	BM-POT-13	Round 4	Petrobras ¹ (100)
	Onshore	BT-POT-8	BT-POT-8	Round 4	Petrobras ¹ (100)
	Onshore	BT-POT-9	BT-POT-9	Round 4	Petrobras ¹ (50)/Partex Brasil (50)
	Onshore	BT-POT-10	BT-POT-10	Round 4	Potóleo ¹ (100)
	Onshore	BT-POT-19	POT-T-353	Round 5	Petrosynergy ¹ (100)
	Onshore	BT-POT-29	POT-T-355	Round 6	Petrogal Brasil ¹ (50)/Petrobras (50)
	Onshore	BT-POT-29	POT-T-394	Round 6	Petrogal Brasil ¹ (50)/Petrobras (50)
	Onshore	BT-POT-29	POT-T-395	Round 6	Petrogal Brasil ¹ (50)/Petrobras (50)
	Onshore	BT-POT-35	POT-T-700	Round 6	Petrobras ¹ (100)
	Offshore	BM-POT-16	POT-M-663	Round 7	Petrobras ¹ (60)/ Petrogal Brasil (20)/ IBV Brasil Petróleo (20)
	Offshore	BM-POT-16	POT-M-760	Round 7	Petrobras ¹ (60)/ Petrogal Brasil (20)/ IBV Brasil Petróleo (20)
	Offshore	BM-POT-17	POT-M-665	Round 7	Petrobras ¹ (80)/ Petrogal Brasil (20)
	Offshore	BM-POT-17	POT-M-853	Round 7	Petrobras ¹ (80)/ Petrogal Brasil (20)
	Offshore	BM-POT-17	POT-M-855	Round 7	Petrobras ¹ (80)/ Petrogal Brasil (20)
	Onshore	BT-POT-50	POT-T-445	Round 7	Petrobras ¹ (100)
	Onshore	BT-POT-50	POT-T-488	Round 7	Petrobras ¹ (100)
	Onshore	BT-POT-51	POT-T-354	Round 7	Petrogal Brasil ¹ (50)/Petrobras (50)
	Onshore	BT-POT-51	POT-T-440	Round 7	Petrogal Brasil ¹ (50)/Petrobras (50)
	Onshore	BT-POT-51	POT-T-484	Round 7	Petrogal Brasil ¹ (50)/Petrobras (50)
	Onshore	BT-POT-53	POT-T-481	Round 7	Petrosynergy ¹ (100)
	Onshore	BT-POT-55	POT-T-748	Round 7	Petrobras (70)/ Starfish ¹ (30)
	Onshore	BT-POT-55	POT-T-749	Round 7	Petrobras (70)/ Starfish ¹ (30)
	Onshore	BT-POT-55	POT-T-794	Round 7	Petrobras (70)/ Starfish ¹ (30)
	Onshore	BT-POT-57	POT-T-744	Round 7	Petrobras ¹ (100)
	Onshore	BT-POT-57	POT-T-745	Round 7	Petrobras ¹ (100)
	Onshore	BT-POT-60	POT-T-747	Round 7	Petrosynergy ¹ (100)
	Onshore	BT-POT-61	POT-T-565	Round 7	Quantra ¹ (50)/ Phoenix (50)
	Onshore	BT-POT-61	POT-T-792	Round 7	Quantra ¹ (50)/ Phoenix (50)
	Onshore	BT-POT-62	POT-T-706	Round 7	Petrobras ¹ (100)
	Onshore	BT-POT-63	POT-T-573	Round 7	Aurizônia Petróleo ¹ (50)/Phoenix (50)
	Onshore	BT-POT-65	POT-T-191	Round 9	RM ¹ (100)
	Onshore	BT-POT-65	POT-T-192	Round 9	RM ¹ (100)
	Onshore	BT-POT-69	POT-T-208	Round 9	Imetame ¹ (100)
	Onshore	POT-T-515_R10	POT-T-515	Round 10	Petrobras ¹ (100)
	Onshore	POT-T-556_R10	POT-T-556	Round 10	Partex Brasil ¹ (50)/Petrobras (50)
	Onshore	POT-T-560_R10	POT-T-560	Round 10	Petrobras ¹ (100)
	Onshore	POT-T-563_R10	POT-T-563	Round 10	Petrogal Brasil ¹ (50)/Petrobras (50)

Frame 1.1 – Blocks in the exploration phase on December 31st, 2009 (continue)

Blocks in the exploration phase on December 31 st , 2009					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Rounds	Concessionaries (%)
Potiguar	Onshore	POT-T-564_R10	POT-T-564	Round 10	Petrobras ¹ (50)/ Petrogal Brasil (50)
	Onshore	POT-T-600_R10	POT-T-600	Round 10	Petrobras ¹ (100)
	Onshore	POT-T-601_R10	POT-T-601	Round 10	Partex Brasil ¹ (50)/Petrobras (50)
	Onshore	POT-T-602_R10	POT-T-602	Round 10	Petrobras ¹ (100)
	Onshore	POT-T-603_R10	POT-T-603	Round 10	Sipet ¹ (30)/Cemig(24.5)/Codemig (24.5)/Orteng (11)/Imetame(10)
	Onshore	POT-T-608_R10	POT-T-608	Round 10	Petrogal Brasil ¹ (50)/Petrobras (50)
	Onshore	POT-T-609_R10	POT-T-609	Round 10	Petrobras ¹ (100)
	Onshore	POT-T-610_R10	POT-T-610	Round 10	Petrobras ¹ (100)
	Onshore	POT-T-699_R10	POT-T-699	Round 10	Petrobras ¹ (50)/ Petrogal Brasil (50)
	Onshore	POT-T-743_R10	POT-T-743	Round 10	Petrogal Brasil ¹ (50)/Petrobras (50)
Recôncavo	Onshore	BT-REC-7	BT-REC-7	Round 4	Petrobras ¹ (75)/ Starfish (25)
	Onshore	BT-REC-26	REC-T-61	Round 7	Petrosynergy ¹ (100)
	Onshore	BT-REC-28	REC-T-59	Round 7	Silver Offshorelin ¹ (50)/ Mercury (50)
	Onshore	BT-REC-29	REC-T-265	Round 7	Petrobras ¹ (100)
	Onshore	BT-REC-33	REC-T-138	Round 7	Silver Offshorelin ¹ (50)/Mercury (50)
	Onshore	BT-REC-34	REC-T-226	Round 9	Brasoil ¹ (100)
	Onshore	BT-REC-35	REC-T-210	Round 9	Imetame ¹ (33.34)/ Delp (33.33)/Orteng (33.33)
	Onshore	BT-REC-36	REC-T-211	Round 9	Imetame ¹ (33.34)/ Delp (33.33)/Orteng (33.33)
	Onshore	BT-REC-37	REC-T-158	Round 9	Cowan Petróleo e Gás ¹ (90)/Lábrea (10)
	Onshore	BT-REC-38	REC-T-240	Round 9	Cowan Petróleo e Gás ¹ (90)/Lábrea (10)
	Onshore	BT-REC-39	REC-T-129	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-40	REC-T-131	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-41	REC-T-132	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-42	REC-T-142	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-43	REC-T-157	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-44	REC-T-196	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-45	REC-T-197	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-46	REC-T-224	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-47	REC-T-144	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-47	REC-T-155	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-47	REC-T-182	Round 9	Alvorada ¹ (100)
	Onshore	BT-REC-48	REC-T-168	Round 9	Petrobras ¹ (100)
	Onshore	BT-REC-49	REC-T-181	Round 9	Petrobras ¹ (100)
	Onshore	BT-REC-50	REC-T-195	Round 9	Petrobras ¹ (100)
	Onshore	BT-REC-51	REC-T-209	Round 9	Petrobras ¹ (100)
	Onshore	BT-REC-52	REC-T-225	Round 9	Recôncavo E&P ¹ (100)
	Onshore	BT-REC-54	REC-T-169	Round 9	W Washington ¹ (37.5)/BrazAlta (37.5)/Petro Vista (25)
	Onshore	BT-REC-56	REC-T-166	Round 9	Starfish ¹ (40)/Eaglestar (30)/Somoil (30)
	Onshore	BT-REC-57	REC-T-130	Round 9	Starfish ¹ (50)/Petrobras (50)
	Onshore	BT-REC-58	REC-T-183	Round 9	Petrosynergy ¹ (100)
	Onshore	BT-REC-59	REC-T-153	Round 9	Petrosynergy ¹ (70)/Silver Offshorelin (30)
	Onshore	BT-REC-60	REC-T-170	Round 9	W Washington ¹ (37.5)/BrazAlta (37.5)/Petro Vista (25)
	Onshore	REC-T-163_R10	REC-T-163	Round 10	Imetame ¹ (100)
	Onshore	REC-T-220_R10	REC-T-220	Round 10	Petrobras ¹ (100)
	Onshore	REC-T-235_R10	REC-T-235	Round 10	Petrobras ¹ (100)
Rio do Peixe	Onshore	BT-RIOP-1	RIOP-T-75	Round 9	Cowan Petróleo e Gás ¹ (90)/Lábrea (100)
	Onshore	BT-RIOP-2	RIOP-T-41	Round 9	Petrobras ¹ (100)
	Onshore	BT-RIOP-3	RIOP-T-20	Round 9	UTC Engenharia ¹ (100)
	Onshore	BT-RIOP-4	RIOP-T-21	Round 9	Ral Engenharia ¹ (50)/Univen (50)
	Onshore	BT-RIOP-5	RIOP-T-30	Round 9	Ral Engenharia ¹ (50)/Univen (50)
	Onshore	BT-RIOP-6	RIOP-T-31	Round 9	Ral Engenharia ¹ (50)/Univen (50)
	Onshore	BT-RIOP-7	RIOP-T-55	Round 9	Ral Engenharia ¹ (50)/Univen (50)
	Onshore	BT-RIOP-8	RIOP-T-56	Round 9	Ral Engenharia ¹ (50)/Univen (50)
Santos	Offshore	BM-S-4	BM-S-4	Round 1	Eni Oil ¹ (50)/CVRD (50)
	Offshore	BM-S-8	BM-S-8	Round 2	Petrobras ¹ (66)/ Shell (20)/ Petrogal Brasil (14)
	Offshore	BM-S-9	BM-S-9	Round 2	Petrobras ¹ (45)/ BG Brasil (30)/ Repsol (25)
	Offshore	BM-S-10	BM-S-10	Round 2	Petrobras ¹ (65)/ BG Brasil (25)/ Partex (10)
	Offshore	BM-S-11	BM-S-11	Round 2	Petrobras ¹ (65)/ BG Brasil (25)/ Petrogal (10)
	Offshore	BM-S-12	BM-S-12	Round 3	Petrobras ¹ (70)/ Queiroz Galvão (30)
	Offshore	BM-S-17	BM-S-17	Round 3	Petrobras ¹ (100)
	Offshore	BM-S-21	BM-S-21	Round 3	Petrobras ¹ (80)/ Petrogal Brasil (20)
	Offshore	BM-S-22	BM-S-22	Round 3	Esso Santos ¹ (40)/ Hess Brasil (40)/ Petrobras (20)
	Offshore	BM-S-24	BM-S-24	Round 3	Petrobras ¹ (80)/ Petrogal Brasil (20)
	Offshore	BM-S-29	BM-S-29	Round 4	Maersk ¹ (35)/OGX (65)
	Offshore	BM-S-40	S-M-1288	Round 5	Petrobras ¹ (100)
	Offshore	BM-S-40	S-M-1289	Round 5	Petrobras ¹ (100)
	Offshore	BM-S-41	S-M-1352	Round 5	Petrobras ¹ (100)
	Offshore	BM-S-41	S-M-1354	Round 5	Petrobras ¹ (100)
	Offshore	BM-S-41	S-M-1356	Round 5	Petrobras ¹ (100)
	Offshore	BM-S-41	S-M-1358	Round 5	Petrobras ¹ (100)

Frame 1.1 – Blocks in the exploration phase on December 31st, 2009 (continue)

Blocks in the exploration phase on December 31 st , 2009					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Rounds	Concessionaries (%)
Santos	Offshore	BM-S-41	S-M-1480	Round 5	Petrobras ¹ (100)
	Offshore	BM-S-41	S-M-1482	Round 5	Petrobras ¹ (100)
	Offshore	BM-S-42	S-M-239	Round 6	Petrobras ¹ (100)
	Offshore	BM-S-42	S-M-324	Round 6	Petrobras ¹ (100)
	Offshore	BM-S-42	S-M-415	Round 6	Petrobras ¹ (100)
	Offshore	BM-S-42	S-M-417	Round 6	Petrobras ¹ (100)
	Offshore	BM-S-44	S-M-172	Round 6	Petrobras ¹ (75)/Repsol (25)
	Offshore	BM-S-44	S-M-330	Round 6	Petrobras ¹ (75)/Repsol (25)
	Offshore	BM-S-45	S-M-320	Round 6	Petrobras ¹ (60)/Shell (40)
	Offshore	BM-S-45	S-M-322	Round 6	Petrobras ¹ (60)/Shell (40)
	Offshore	BM-S-46	S-M-729	Round 7	Petrobras ¹ (100)
	Offshore	BM-S-46	S-M-790	Round 7	Petrobras ¹ (100)
	Offshore	BM-S-47	S-M-615	Round 7	BG Brasil ¹ (50)/Repsol (25)/CVRD (25)
	Offshore	BM-S-47	S-M-672	Round 7	BG Brasil ¹ (50)/Repsol (25)/CVRD (25)
	Offshore	BM-S-48	S-M-616	Round 7	Repsol ¹ (40)/Petrobras (35)/CVRD (12.5)/Woodside (12.5)
	Offshore	BM-S-48	S-M-617	Round 7	Repsol ¹ (40)/Petrobras (35)/CVRD (12.5)/Woodside (12.5)
	Offshore	BM-S-48	S-M-670	Round 7	Repsol ¹ (40)/Petrobras (35)/CVRD (12.5)/Woodside (12.5)
	Offshore	BM-S-48	S-M-673	Round 7	Repsol ¹ (40)/Petrobras (35)/CVRD (12.5)/Woodside (12.5)
	Offshore	BM-S-48	S-M-674	Round 7	Repsol ¹ (40)/Petrobras (35)/CVRD (12.5)/Woodside (12.5)
	Offshore	BM-S-48	S-M-675	Round 7	Repsol ¹ (40)/Petrobras (35)/CVRD (12.5)/Woodside (12.5)
	Offshore	BM-S-48	S-M-728	Round 7	Repsol ¹ (40)/Petrobras (35)/CVRD (12.5)/Woodside (12.5)
	Offshore	BM-S-48	S-M-789	Round 7	Repsol ¹ (40)/Petrobras (35)/CVRD (12.5)/Woodside (12.5)
	Offshore	BM-S-49	S-M-1226	Round 7	Petrobras ¹ (100)
	Offshore	BM-S-50	S-M-623	Round 7	Petrobras ¹ (60)/Repsol (20)/BG Brasil (20)
	Offshore	BM-S-51	S-M-619	Round 7	Petrobras ¹ (60)/Repsol (40)
	Offshore	BM-S-52	S-M-508	Round 7	Petrobras (60)/BG Brasil ¹ (40)
	Offshore	BM-S-53	S-M-405	Round 7	Petrobras ¹ (100)
	Offshore	BM-S-54	S-M-518	Round 7	Shell ¹ (100)
	Offshore	BM-S-55	S-M-506	Round 7	Repsol ¹ (40)/Petrobras (35)/CVRD (12.5)/Woodside (12.5)
	Offshore	BM-S-56	S-M-226	Round 9	OGX ¹ (100)
	Offshore	BM-S-57	S-M-268	Round 9	OGX ¹ (100)
	Offshore	BM-S-58	S-M-270	Round 9	OGX ¹ (100)
	Offshore	BM-S-59	S-M-314	Round 9	OGX ¹ (100)
	Offshore	BM-S-60	S-M-225	Round 9	Starfish ¹ (30)/Petrobras (40)/Sonangol (30)
	Offshore	BM-S-61	S-M-1037	Round 9	Karoon Petróleo e Gás ¹ (100)
	Offshore	BM-S-62	S-M-1102	Round 9	Karoon Petróleo e Gás ¹ (100)
	Offshore	BM-S-63	S-M-1036	Round 9	Norse Energy ¹ (50)/Brasãoil (50)
	Offshore	BM-S-64	S-M-613	Round 9	Petrobras ¹ (100)
	Offshore	BM-S-65	S-M-713	Round 9	Petrobras ¹ (60)/CVRD (40)
	Offshore	BM-S-66	S-M-791	Round 9	Petrobras ¹ (40)/CVRD (30)/Maersk (30)
	Offshore	BM-S-67	S-M-792	Round 9	Petrobras ¹ (40)/CVRD (30)/Maersk (30)
	Offshore	BM-S-68	S-M-1101	Round 9	Karoon Petróleo e Gás ¹ (100)
	Offshore	BM-S-69	S-M-1165	Round 9	Karoon Petróleo e Gás ¹ (100)
	Offshore	BM-S-70	S-M-1166	Round 9	Karoon Petróleo e Gás ¹ (100)
	Offshore	BM-S-71	S-M-1035	Round 9	Norse Energy ¹ (50)/Brasãoil (50)
	Offshore	BM-S-72	S-M-1100	Round 9	Norse Energy ¹ (50)/Brasãoil (50)
	Offshore	BM-S-73	S-M-1413	Round 9	ONCG Campos ¹ (100)
	Offshore	BM-S-74	S-M-1476	Round 9	Petrobras ¹ (70)/Ecopetrol Oleo e Gás (30)
	Offshore	BM-S-75	S-M-1162	Round 9	Petrobras ¹ (60)/Queiroz Galvão (20)/Petrogal Brasil (20)
	Offshore	BM-S-76	S-M-1163	Round 9	Petrobras ¹ (60)/Queiroz Galvão (20)/Petrogal Brasil (20)
	Offshore	BM-S-77	S-M-1227	Round 9	Petrobras ¹ (60)/Queiroz Galvão (20)/Petrogal Brasil (20)
São Francisco	Onshore	BT-SF-2	SF-T-101	Round 7	Petrobras ¹ (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-102	Round 7	Petrobras ¹ (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-103	Round 7	Petrobras ¹ (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-111	Round 7	Petrobras ¹ (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-112	Round 7	Petrobras ¹ (50)/BG Brasil (50)
	Onshore	BT-SF-2	SF-T-113	Round 7	Petrobras ¹ (50)/BG Brasil (50)
	Onshore	BT-SF-3	SF-T-118	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-124	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-125	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-130	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-131	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-137	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-139	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-143	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-144	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-145	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-85	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-86	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-94	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-95	Round 7	Oil M&S ¹ (100)
	Onshore	BT-SF-3	SF-T-96	Round 7	Oil M&S ¹ (100)

Frame 1.1 – Blocks in the exploration phase on December 31st, 2009

Blocks in the exploration phase on December 31 st , 2009					
Sedimentary basins	Onshore/Offshore	Contracts	Blocks	Rounds	Concessionaries (%)
São Francisco	Onshore	BT-SF-3A	SF-T-105	Round 7	Petra Energia ¹ (100)
	Onshore	BT-SF-3A	SF-T-106	Round 7	Petra Energia ¹ (100)
	Onshore	BT-SF-3A	SF-T-115	Round 7	Petra Energia ¹ (100)
	Onshore	BT-SF-3A	SF-T-121	Round 7	Petra Energia ¹ (100)
	Onshore	BT-SF-3A	SF-T-128	Round 7	Petra Energia ¹ (100)
	Onshore	BT-SF-3A	SF-T-134	Round 7	Petra Energia ¹ (100)
	Onshore	BT-SF-3A	SF-T-138	Round 7	Petra Energia ¹ (100)
	Onshore	BT-SF-5	SF-T-132	Round 7	Orteng ¹ (30)/Codemig (49)/Delp (11)/Imetame (10)
	Onshore	BT-SF-6	SF-T-133	Round 7	Cisco Oil and Gas ¹ (100)
	Onshore	BT-SF-7	SF-T-92	Round 7	Petra Energia ¹ (100)
	Onshore	BT-SF-8	SF-T-119	Round 7	Petra Energia ¹ (100)
	Onshore	BT-SF-9	SF-T-126	Round 7	Petra Energia ¹ (100)
	Onshore	SF-T-104_R10	SF-T-104	Round 10	Imetame ¹ (100)
	Onshore	SF-T-114_R10	SF-T-114	Round 10	Imetame ¹ (100)
	Onshore	SF-T-120_R10	SF-T-120	Round 10	Imetame ¹ (30)/Cemig (24.5)/Codemig (24.5)/Orteng (11)/Sipet (10)
	Onshore	SF-T-127_R10	SF-T-127	Round 10	Orteng ¹ (30)/Cemig (24.5)/Codemig (24.5)/Imetame (11)/Sipet (10)
	Onshore	SF-T-80_R10	SF-T-80	Round 10	Shell ¹ (100)
	Onshore	SF-T-81_R10	SF-T-81	Round 10	Shell ¹ (100)
	Onshore	SF-T-82_R10	SF-T-82	Round 10	Shell ¹ (100)
	Onshore	SF-T-83_R10	SF-T-83	Round 10	Shell ¹ (100)
	Onshore	SF-T-93_R10	SF-T-93	Round 10	Shell ¹ (100)
Sergipe	Offshore	BM-SEAL-4	BM-SEAL-4	Round 2	Petrobras ¹ (75)/ONGC Campos (25)
	Offshore	BM-SEAL-9	BM-SEAL-9	Round 4	Petrobras ¹ (85)/Partex Brasil (15)
	Offshore	BM-SEAL-10	SEAL-M-347	Round 6	Petrobras ¹ (100)
	Offshore	BM-SEAL-10	SEAL-M-424	Round 6	Petrobras ¹ (100)
	Offshore	BM-SEAL-10	SEAL-M-495	Round 6	Petrobras ¹ (100)
	Offshore	BM-SEAL-10	SEAL-M-499	Round 6	Petrobras ¹ (100)
	Offshore	BM-SEAL-11	SEAL-M-349	Round 6	Petrobras ¹ (60)/IBV Brasil Petróleo (40)
	Offshore	BM-SEAL-11	SEAL-M-426	Round 6	Petrobras ¹ (60)/IBV Brasil Petróleo (40)
	Offshore	BM-SEAL-11	SEAL-M-497	Round 6	Petrobras ¹ (60)/IBV Brasil Petróleo (40)
	Offshore	BM-SEAL-11	SEAL-M-569	Round 6	Petrobras ¹ (60)/IBV Brasil Petróleo (40)
	Onshore	BT-SEAL-12	SEAL-T-390	Round 7	Petrobras ¹ (100)
	Onshore	BT-SEAL-12	SEAL-T-391	Round 7	Petrobras ¹ (100)
	Onshore	BT-SEAL-12	SEAL-T-410	Round 7	Petrobras ¹ (100)
	Onshore	BT-SEAL-13	SEAL-T-412	Round 7	Petrogal Brasil ¹ (50)/Petrobras (50)
	Onshore	BT-SEAL-13	SEAL-T-429	Round 7	Petrogal Brasil ¹ (50)/Petrobras (50)
	Onshore	BT-SEAL-16	SEAL-T-460	Round 7	Silver Offshorelin ¹ (100)
	Onshore	BT-SEAL-16	SEAL-T-467	Round 7	Silver Offshorelin ¹ (100)
	Onshore	BT-SEAL-20	SEAL-T-430	Round 7	Nord Oil ¹ (60)/Mercury (40)
	Onshore	BT-SEAL-22	SEAL-T-418	Round 7	Aurizônia Petróleo ¹ (50)/Phoenix (50)
Solimões	Onshore	BT-SOL-1	BT-SOL-1	Round 4	Petrobras ¹ (100)
	Onshore	BT-SOL-3	SOL-T-150	Round 7	Petrobras ¹ (100)
	Onshore	BT-SOL-3	SOL-T-171	Round 7	Petrobras ¹ (100)
	Onshore	BT-SOL-3	SOL-T-173	Round 7	Petrobras ¹ (100)
	Onshore	BT-SOL-3	SOL-T-193	Round 7	Petrobras ¹ (100)
	Onshore	BT-SOL-4	SOL-T-151	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4	SOL-T-172	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4	SOL-T-174	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4	SOL-T-194	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4	SOL-T-195	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4	SOL-T-196	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4	SOL-T-197	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4	SOL-T-218	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4	SOL-T-219	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4	SOL-T-220	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-148	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-149	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-168	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-169	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-170	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-191	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-192	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-214	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-215	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-216	Round 7	HRT O&G ¹ (51)/Petra Energia (49)
	Onshore	BT-SOL-4A	SOL-T-217	Round 7	HRT O&G ¹ (51)/Petra Energia (49)

Source: ANP/SEP.

¹Operator.

Frame 1.2 – Fields under development on December 31st, 2009

Fields under development on December 31 st , 2009				
Sedimentary basins	States	Onshore/Offshore	Fields	Concessionaries (%)
Amazonas	Amazonas	Onshore	Azulão	Petrobras ¹ (100)
	Amazonas	Onshore	Japiim	Petrobras ¹ (100)
Camamu	Bahia	Offshore	Camarão	El Paso Óleo e Gás ¹ (100)
	Bahia	Offshore	Camarão Norte	Petrobras ¹ (35) / Manati (45) / Rio das Contas (10) / Brasoil Manati (10)
	Bahia	Offshore	Pinaúna	El Paso Óleo e Gás ¹ (100)
	Bahia	Offshore	Sardinha	Petrobras (40) / El Paso Óleo e Gás ¹ (40) / Norse (20)
Campos	Espírito Santo	Offshore	Baleia Anã	Petrobras ¹ (100)
	Espírito Santo	Offshore	Baleia Azul	Petrobras ¹ (100)
	Espírito Santo	Offshore	Baleia Franca	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Carapicu	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Carataí	Petrobras ¹ (100)
	Espírito Santo	Offshore	Catuá	Petrobras ¹ (100)
	Espírito Santo	Offshore	Caxaréu	Petrobras ¹ (100)
	Espírito Santo	Offshore	Mangangá	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Offshoreomba	Petrobras ¹ (62.5) / Chevron Brasil (37.5)
	Espírito Santo	Offshore	Nautilus	Shell Ltda ¹ (35) / Petrobras (35) / ONGC Campos (30)
	Rio de Janeiro	Offshore	Papa-Terra	Petrobras ¹ (62.5) / Chevron Brasil (37.5)
	Rio de Janeiro	Offshore	Peregrino	Hydro Brasil(50) / StatoilHydro Brasil ¹ (50)
	Espírito Santo	Offshore	Pirambu	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Xerelete	Petrobras ¹ (41.2) / Devon Energy (17.6) / Total E&P do Brasil (41.2)
Espírito Santo	Espírito Santo	Onshore	Albatroz	Petrosynergy ¹ (100)
	Espírito Santo	Offshore	Canapu	Petrobras ¹ (100)
	Espírito Santo	Offshore	Carapó	Petrobras ¹ (100)
	Espírito Santo	Onshore	Corruíra	Petrobras ¹ (100)
	Espírito Santo	Onshore	Jacupemba	Petrobras ¹ (100)
	Espírito Santo	Onshore	Saíra	Petrobras ¹ (100)
Paraná	Paraná	Onshore	Barra Bonita	Petrobras ¹ (100)
Potiguar	Rio Grande do Norte	Onshore	Andorinha	Petrogal Brasil ¹ (50) / Petrobras (50)
	Rio Grande do Norte	Onshore	Chopim	Petrogal Brasil ¹ (50) / Petrobras (50)
	Rio Grande do Norte	Offshore	Guaiuba	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Guajá	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Iraúna	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Pardal	Potióleo S/A ¹ (100)
	Rio Grande do Norte	Offshore	Salema Branca	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Sanhaçu	Petrogal Brasil (50) / Petrobras ¹ (50)
Recôncavo	Bahia	Onshore	Joá ²	Queiroz Galvão ¹ (50) / Brasoil Manati (50)
	Bahia	Onshore	Maritaca	Starfish ¹ (50) / Somoil (50)
Santos	Rio de Janeiro	Offshore	Atlanta	Shell ¹ (40) / Chevron Brasil (20) / Petrobras (40)
	Rio de Janeiro	Offshore	Carapiá	Petrobras ¹ (100)
	Santa Catarina	Offshore	Cavalo-Marinho	Petrobras ¹ (35) / Norse Energy (50) / Brasoil Cavalo Offshoreinho (15)
	Paraná	Offshore	Estrela-do-Mar	Petrobras ¹ (35) / Norse Energy (65)
	São Paulo	Offshore	Guaiamá	Petrobras ¹ (100)
	São Paulo	Offshore	Mexilhão	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Oliva	Shell ¹ (40) / Chevron Brasil (20) / Petrobras (40)
	São Paulo	Offshore	Piracucá	Petrobras ¹ (63) / Repsol (37)
	Rio de Janeiro	Offshore	Pirapitanga	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Tambauí	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Tambuatá	Petrobras ¹ (100)
	Santa Catarina	Offshore	Tubarão	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Uruguá	Petrobras ¹ (100)
Sergipe-Alagoas	Sergipe	Onshore	Aracua	Starfish ¹ (30) / Petrobras (70)
	Alagoas	Onshore	Fazenda Guindaste	Petrosynergy ¹ (100)
	Alagoas	Onshore	Lagoa Pacas	Petrosynergy ¹ (100)
	Alagoas	Onshore	Mutum	Petrobras ¹ (100)
	Alagoas	Onshore	Sebastião Ferreira	Petrosynergy ¹ (100)
Solimões	Amazonas	Onshore	Aracanga	Petrobras ¹ (100)
	Amazonas	Onshore	Carapanaúba	Petrobras ¹ (100)
	Amazonas	Onshore	Cupiúba	Petrobras ¹ (100)
	Amazonas	Onshore	Juruá	Petrobras ¹ (100)
Tucano Sul	Bahia	Onshore	Iraí	Petrobras ¹ (100)
	Bahia	Onshore	Lagoa Branca	Petrobras ¹ (100)

Source: ANP/SDP.

¹Operator company. ²Fields to be returned by concessionaire(s)

Frame 1.3 – Producing fields on December 31st, 2009 (continue)

Producing fields on Dec 31 st , 2009				
Sedimentary basins	States	Onshore/Offshore	Fields	Concessionaries (%)
Camamu	Bahia	Onshore	Jiribatuba ²	Alvorada ¹ (100)
	Bahia	Offshore	Manati	Petrobras ¹ (35) / Manati (45) / Rio das Contas (10) / Brasoil Manati (10)
	Bahia	Onshore	Morro do Barro ²	Panergy ¹ (30) / ERG (70)
Campos	Espírito Santo	Offshore	Abalone	Shell Ltda ¹ (35) / Petrobras (35) / ONGC Campos (30)
	Rio de Janeiro	Offshore	Albacora	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Albacora Leste	Petrobras ¹ (90) / Repsol (10)
	Rio de Janeiro	Offshore	Anequim	Petrobras ¹ (100)
	Espírito Santo	Offshore	Argonauta	Shell Ltda ¹ (35) / Petrobras (35) / ONGC Campos (30)
	Rio de Janeiro	Offshore	Badejo	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Bagre	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Barracuda	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Bicudo	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Bijupirá	Shell Ltda ¹ (80) / Petrobras (20)
	Rio de Janeiro	Offshore	Bonito	Petrobras ¹ (100)
	Espírito Santo	Offshore	Cachalote	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Carapeba	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Caratinga	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Cherne	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Congro	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Corvina	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Enchova	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Enchova Oeste	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Espadarte	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Frade	Chevron Frade ¹ (42.5) / Petrobras (42.5) / Frade Japão (15)
	Rio de Janeiro	Offshore	Garoupa	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Garoupinha	Petrobras ¹ (100)
	Espírito Santo	Offshore	Jubarte	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Linguado	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Malhado	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Marimbá	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Marlim	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Marlim Leste	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Marlim Sul	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Moréia	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Namorado	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Nordeste de Namorado	Petrobras ¹ (100)
	Espírito Santo	Offshore	Ostra	Shell Ltda ¹ (35) / Petrobras (35) / ONGC Campos (30)
	Rio de Janeiro	Offshore	Pampo	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Parati	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Pargo	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Piraúna	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Polvo	Devon Energy ¹ (60) / SK Brasil (40)
	Rio de Janeiro	Offshore	Roncador	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Salema	Shell Ltda ¹ (80) / Petrobras (20)
	Rio de Janeiro	Offshore	Trilha	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Vermelho	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Viola	Petrobras ¹ (100)
	Rio de Janeiro	Offshore	Voador	Petrobras ¹ (100)
Ceará	Ceará	Offshore	Atum	Petrobras ¹ (100)
	Ceará	Offshore	Curimã	Petrobras ¹ (100)
	Ceará	Offshore	Espada	Petrobras ¹ (100)
	Ceará	Offshore	Xaréu	Petrobras ¹ (100)
Espírito Santo	Espírito Santo	Onshore	Barra do Ipiranga	Petrobras ¹ (100)
	Espírito Santo	Onshore	Biguá	Petrobras ¹ (100)
	Espírito Santo	Offshore	Cação	Petrobras ¹ (100)
	Espírito Santo	Onshore	Cacimbas	Petrobras ¹ (100)
	Espírito Santo	Offshore	Camarupim	Petrobras ¹ (100)
	Espírito Santo	Offshore	Camarupim Norte	Petrobras ¹ (65) / El Paso Óleo e Gás (35)
	Espírito Santo	Onshore	Campo Grande	Petrobras ¹ (100)
	Espírito Santo	Onshore	Cancã	Petrobras ¹ (100)
	Espírito Santo	Offshore	Cangoá	Petrobras ¹ (100)
	Espírito Santo	Onshore	Córrego Cedro Norte	Petrobras ¹ (100)
	Espírito Santo	Onshore	Córrego das Pedras	Petrobras ¹ (100)
	Espírito Santo	Onshore	Córrego Dourado	Petrobras ¹ (100)
	Espírito Santo	Onshore	Crejoá ²	Koch Petróleo ¹ (100)
	Espírito Santo	Onshore	Fazenda Alegre	Petrobras ¹ (100)

Frame 1.3 – Producing fields on December 31st, 2009 (continue)

Producing fields on Dec 31 st , 2009				
Sedimentary basins	States	Onshore/Offshore	Fields	Concessionaries (%)
Espirito Santo	Espirito Santo	Onshore	Fazenda Cedro	Petrobras ¹ (100)
	Espirito Santo	Onshore	Fazenda Cedro Norte	Petrobras ¹ (100)
	Espirito Santo	Onshore	Fazenda Queimadas	Petrobras ¹ (100)
	Espirito Santo	Onshore	Fazenda Santa Luzia	Petrobras ¹ (100)
	Espirito Santo	Onshore	Fazenda São Jorge	Petrobras ¹ (100)
	Espirito Santo	Onshore	Fazenda São Rafael	Petrobras ¹ (100)
	Espirito Santo	Onshore	Garça Branca	Koch Petróleo ¹ (100)
	Espirito Santo	Offshore	Golfinho	Petrobras ¹ (100)
	Espirito Santo	Onshore	Guriri	Petrobras ¹ (100)
	Espirito Santo	Onshore	Inhambu	Petrobras ¹ (100)
	Espirito Santo	Onshore	Jacutinga	Petrobras ¹ (100)
	Espirito Santo	Onshore	Lagoa Bonita	Petrobras ¹ (100)
	Espirito Santo	Onshore	Lagoa Parda	Petrobras ¹ (100)
	Espirito Santo	Onshore	Lagoa Parda Norte	Petrobras ¹ (100)
	Espirito Santo	Onshore	Lagoa Parda Sul	Petrobras ¹ (100)
	Espirito Santo	Onshore	Lagoa Piabanha	Petrobras ¹ (100)
	Espirito Santo	Onshore	Lagoa Suruaca	Petrobras ¹ (100)
	Espirito Santo	Onshore	Mariricu	Petrobras ¹ (100)
	Espirito Santo	Onshore	Mariricu Norte	Petrobras ¹ (100)
	Espirito Santo	Onshore	Mariricu Oeste	Petrobras ¹ (100)
	Espirito Santo	Onshore	Mosquito	Petrobras ¹ (100)
	Espirito Santo	Onshore	Nativo Oeste	Petrobras ¹ (100)
	Espirito Santo	Offshore	Peroá	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio Barra Seca	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio Doce ³	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio Ibiribas ³	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio Ipiranga ²	Cheim ¹ (100)
	Espirito Santo	Onshore	Rio Itaúnas	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio Itaúnas Leste	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio Mariricu	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio Preto	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio Preto Oeste	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio Preto Sul	Petrobras ¹ (100)
	Espirito Santo	Onshore	Rio São Mateus	Petrobras ¹ (100)
	Espirito Santo	Onshore	São Mateus	Petrobras ¹ (100)
	Espirito Santo	Onshore	Seriema	Petrobras ¹ (100)
	Espirito Santo	Onshore	Tabuaiaá	Petrobras ¹ (100)
Potiguar	Rio Grande do Norte	Onshore	Acauã	Petrobras ¹ (100)
	Rio Grande do Norte	Offshore	Agulha	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Alto do Rodrigues	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Angico	Petrobras ¹ (100)
	Rio Grande do Norte	Offshore	Arabaiana	Petrobras ¹ (21) / Unopaso (79)
	Rio Grande do Norte	Onshore	Araçari	Petrosynergy ¹ (100)
	Rio Grande do Norte	Offshore	Aratum	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Asa Branca	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Baixa do Algodão	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Baixa do Juazeiro	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Barrinha	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Benfica	Petrobras ¹ (100)
	Rio Grande do Norte	Offshore	Biquara	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Boa Esperança	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Boa Vista	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Brejinho	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Cachoeirinha	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Canto do Amaro	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Carcará	Odebrecht ¹ (50) / Koch Petróleo (50)
	Rio Grande do Norte	Onshore	Cardeal	Partex ¹ (50) / Petrobras (50)
	Rio Grande do Norte	Offshore	Cioba	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Colibri	Partex ¹ (50) / Petrobras (50)
	Rio Grande do Norte	Offshore	Dentão	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Estreito	Petrobras ¹ (100)
	Ceará	Onshore	Fazenda Belém	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Fazenda Canaan	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Fazenda Curral	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Fazenda Junco	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Fazenda Malaquias	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Fazenda Pocinho	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Guamaré	Petrobras ¹ (100)

Frame 1.3 – Producing fields on December 31st, 2009 (continue)

Producing fields on Dec 31 st , 2009				
Sedimentary basins	States	Onshore/Offshore	Fields	Concessionaries (%)
Potiguar	Ceará	Onshore	Icapuí	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Jaçanã	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Janduí	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	João de Barro	Aurizônia Petróleo ¹ (100)
	Rio Grande do Norte	Onshore	Juazeiro	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Lagoa Aroeira	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Leste de Poço Xavier	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Livramento	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Lorena	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Macau	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Monte Alegre	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Morrinho	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Mossoró	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Noroeste do Morro Rosado	Petrobras ¹ (100)
	Rio Grande do Norte	Offshore	Oeste de Ubarana	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Pajeú	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Pedra Sentada	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Periquito	Aurizônia Petróleo ¹ (75) / Phoenix (25)
	Rio Grande do Norte	Offshore	Pescada	Petrobras ¹ (21) / Unopaso (79)
	Rio Grande do Norte	Onshore	Pintassilgo	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Pitiguari	Petrosynergy ¹ (100)
	Rio Grande do Norte	Onshore	Poço Verde	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Poço Xavier	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Ponta do Mel	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Porto Carão	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Redonda	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Redonda Profundo	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Riacho da Forquilha	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Riacho Velho ²	Genesis 2000 ¹ (100)
	Rio Grande do Norte	Onshore	Rio Mossoró	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Rolinha	Potilóleo S/A ¹ (100)
	Rio Grande do Norte	Onshore	Sabiá	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Salina Cristal	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	São Manoel ²	Arclima ¹ (100)
	Rio Grande do Norte	Offshore	Serra	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Serra do Mel	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Serra Vermelha	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Serraria	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Siri	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Três Marias	Petrobras ¹ (100)
	Rio Grande do Norte	Offshore	Ubarana	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Upanema	Petrobras ¹ (100)
	Rio Grande do Norte	Onshore	Varginha	Petrobras ¹ (100)
Recôncavo	Bahia	Onshore	Acajá-Burizinho	Recôncavo E&P ¹ (100)
	Bahia	Onshore	Água Grande	Petrobras ¹ (100)
	Bahia	Onshore	Apraiús	Petrobras ¹ (100)
	Bahia	Onshore	Araçás	Petrobras ¹ (100)
	Bahia	Onshore	Araçás Leste ²	Egesa ¹ (100)
	Bahia	Onshore	Aratu	Petrobras ¹ (100)
	Bahia	Onshore	Biriba	Petrobras ¹ (100)
	Bahia	Onshore	Bom Lugar ²	Alvorada ¹ (100)
	Bahia	Onshore	Bonsucesso	Petrobras ¹ (100)
	Bahia	Onshore	Brejinho	Petrobras ¹ (100)
	Bahia	Onshore	Buracica	Petrobras ¹ (100)
	Bahia	Onshore	Camaçari	Petrobras ¹ (100)
	Bahia	Onshore	Canabrava	Petrobras ¹ (100)
	Bahia	Onshore	Canário	Petrosynergy ¹ (100)
	Bahia	Onshore	Candeias	Petrobras ¹ (100)
	Bahia	Onshore	Cantagalo	Petrobras ¹ (100)
	Bahia	Onshore	Cassarongongo	Petrobras ¹ (100)
	Bahia	Onshore	Cexis	Petrobras ¹ (100)
	Bahia	Onshore	Cidade entre Rios	Petrobras ¹ (100)
	Bahia	Onshore	Dom João	Petrobras ¹ (100)
	Bahia	Offshore	Dom João Mar	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Alto das Pedras	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Alvorada	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Azevedo	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Bálsamo	Petrobras ¹ (100)

Frame 1.3 – Producing fields on December 31st, 2009 (continue)

Producing fields on Dec 31 st , 2009				
Sedimentary basins	States	Onshore/Offshore	Fields	Concessionaries (%)
Recôncavo	Bahia	Onshore	Fazenda Belém	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Boa Esperança	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Imbé	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Onça	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Panelas	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Rio Branco	W. Washington – BA ¹ (52.5) / BrazAlta (47.5)
	Bahia	Onshore	Fazenda Santo Estevão	W. Washington – BA ¹ (52.5) / BrazAlta (47.5)
	Bahia	Onshore	Fazenda Sori ²	Petrobras ¹ (100)
	Bahia	Onshore	Gomo	Petrobras ¹ (100)
	Bahia	Onshore	Guanambi	Petrobras ¹ (80) / Guanambi (20)
	Bahia	Onshore	Ilha de Bimbarra	Petrobras ¹ (100)
	Bahia	Onshore	Itaparica	Petrobras ¹ (100)
	Bahia	Onshore	Jacupé	Petrobras ¹ (100)
	Bahia	Onshore	Jandaia	Petrobras ¹ (100)
	Bahia	Onshore	Juriti	Recôncavo E&P ¹ (100)
	Bahia	Onshore	Lagoa do Paulo	Recôncavo E&P ¹ (100)
	Bahia	Onshore	Lagoa do Paulo Norte	Recôncavo E&P ¹ (100)
	Bahia	Onshore	Lagoa do Paulo Sul	Recôncavo E&P ¹ (100)
	Bahia	Onshore	Lagoa Verde ³	Petrobras ¹ (100)
	Bahia	Onshore	Lamarão	Petrobras ¹ (100)
	Bahia	Onshore	Leodório	Petrobras ¹ (100)
	Bahia	Onshore	Malombê	Petrobras ¹ (100)
	Bahia	Onshore	Mandacaru	Petrobras ¹ (100)
	Bahia	Onshore	Mapele	Petrobras ¹ (100)
	Bahia	Onshore	Massapé	Petrobras ¹ (100)
	Bahia	Onshore	Massuí	Petrobras ¹ (100)
	Bahia	Onshore	Mata de São João	Petrobras ¹ (100)
	Bahia	Onshore	Miranga	Petrobras ¹ (100)
	Bahia	Onshore	Miranga Norte	Petrobras ¹ (100)
	Bahia	Onshore	Norte Fazenda Caruaçu	Petrobras ¹ (100)
	Bahia	Onshore	Paramirim do Vencimento ²	Petrobras ¹ (100)
	Bahia	Onshore	Pedrinhas	Petrobras ¹ (100)
	Bahia	Onshore	Pojuca	Petrobras ¹ (100)
	Bahia	Onshore	Pojuca Norte	Petrobras ¹ (100)
	Bahia	Onshore	Quiambina	UFBA ¹ (Campo Escola)
	Bahia	Onshore	Remanso	Petrobras ¹ (100)
	Bahia	Onshore	Riacho da Barra	Petrobras ¹ (100)
	Bahia	Onshore	Riacho Ouricuri	Petrobras ¹ (100)
	Bahia	Onshore	Riacho São Pedro	Petrobras ¹ (100)
	Bahia	Onshore	Rio da Serra	Petrobras ¹ (100)
	Bahia	Onshore	Rio do Bu	Petrobras ¹ (100)
	Bahia	Onshore	Rio dos Ovos	Petrobras ¹ (100)
	Bahia	Onshore	Rio Itariri	Petrobras ¹ (100)
	Bahia	Onshore	Rio Joanes	Petrobras ¹ (100)
	Bahia	Onshore	Rio Pipiri	Petrobras ¹ (100)
	Bahia	Onshore	Rio Pojuca	Petrobras ¹ (100)
	Bahia	Onshore	Rio Sauípe	Petrobras ¹ (100)
	Bahia	Onshore	Rio Subaúma	Petrobras ¹ (100)
	Bahia	Onshore	Santana	W. Washington – BA ¹ (52.5) / BrazAlta (47.5)
	Bahia	Onshore	São Domingos	Petrobras ¹ (100)
	Bahia	Onshore	São Pedro	Petrobras ¹ (100)
	Bahia	Onshore	Sauípe	W. Washington – BA ¹ (52.5) / BrazAlta (47.5)
	Bahia	Onshore	Sesmaria	Petrobras ¹ (100)
	Bahia	Onshore	Socorro	Petrobras ¹ (100)
	Bahia	Onshore	Socorro Extensão	Petrobras ¹ (100)
	Bahia	Onshore	Sussuarana	Petrobras ¹ (100)
	Bahia	Onshore	Tangará	Petrobras ¹ (100)
	Bahia	Onshore	Taquiipe	Petrobras ¹ (100)
	Bahia	Onshore	Tico-Tico	W. Washington – BA ¹ (52.5) / BrazAlta (47.5)
	Bahia	Onshore	Uirapuru	Petrosynergy ¹ (100)
Santos	Paraná	Offshore	Caravela	Petrobras ¹ (100)
	Paraná	Offshore	Coral	Petrobras ¹ (35) / Norse (7.5) / Coplex (27.5) / BS-3 (15) / Brasoil Coral (15)
	São Paulo	Offshore	Lagosta	Petrobras ¹ (100)
	São Paulo	Offshore	Merluza	Petrobras ¹ (100)
Sergipe-Alagoas	Sergipe	Onshore	Aguilhada	Petrobras ¹ (100)
	Alagoas	Onshore	Anambé	Petrobras ¹ (100)
	Sergipe	Onshore	Angelim	Petrobras ¹ (100)

Frame 1.3 – Producing fields on December 31st, 2009

Producing fields on Dec 31 st , 2009				
Sedimentary basins	States	Onshore/Offshore	Fields	Concessionaries (%)
Sergipe-Alagoas	Sergipe	Onshore	Aruari	Petrobras ¹ (100)
	Sergipe	Onshore	Atalaia Sul	Petrobras ¹ (100)
	Sergipe	Onshore	Brejo Grande	Petrobras ¹ (100)
	Sergipe	Offshore	Caioba	Petrobras ¹ (100)
	Sergipe	Offshore	Camorim	Petrobras ¹ (100)
	Sergipe	Onshore	Carapitanga ²	Silver Marlim ¹ (100)
	Sergipe	Onshore	Carmópolis	Petrobras ¹ (100)
	Sergipe	Onshore	Castanhal	Petrobras ¹ (100)
	Sergipe	Onshore	Cidade de Aracaju ²	Alvorada ¹ (100)
	Alagoas	Onshore	Cidade de São Miguel dos Campos	Petrobras ¹ (100)
	Alagoas	Onshore	Cidade de Sebastião Ferreira	Petrosynergy ¹ (100)
	Alagoas	Onshore	Coqueiro Seco	Petrosynergy ¹ (100)
	Sergipe	Offshore	Dourado	Petrobras ¹ (100)
	Alagoas	Onshore	Fazenda Pau Brasil	Petrosynergy ¹ (100)
	Sergipe	Onshore	Foz do Vaza Barris ²	Ral ¹ (100)
	Alagoas	Onshore	Furado	Petrobras ¹ (100)
	Sergipe	Offshore	Guaricema	Petrobras ¹ (100)
	Sergipe	Onshore	Harpia	Nord Oil ¹ (60) / Mercury (40)
	Sergipe	Onshore	Ilha Pequena	Petrobras ¹ (100)
	Alagoas	Onshore	Japuaçu	Petrobras ¹ (100)
	Alagoas	Onshore	Jequiá	Petrosynergy ¹ (100)
	Sergipe	Onshore	Mato Grosso	Petrobras ¹ (100)
	Alagoas	Offshore	Paru	Petrobras ¹ (100)
	Alagoas	Onshore	Pilar	Petrobras ¹ (100)
	Sergipe	Offshore	Piranema	Petrobras ¹ (100)
	Sergipe	Onshore	Riachuelo	Petrobras ¹ (100)
	Sergipe	Offshore	Salgo	Petrobras ¹ (100)
	Alagoas	Onshore	São Miguel dos Campos	Petrobras ¹ (100)
	Sergipe	Onshore	Siririzinho	Petrobras ¹ (100)
	Alagoas	Onshore	Sul de Conuripe	Petrosynergy ¹ (100)
	Alagoas	Onshore	Tabuleiro dos Martins	Petrosynergy ¹ (100)
	Sergipe	Offshore	Tartaruga	UP Petróleo ¹ (67.5) / Petrobras (25) / TDC (7.5)
	Sergipe	Offshore	Tatui	Petrobras ¹ (100)
	Sergipe	Onshore	Tigre ²	Severo Villares ¹ (100)
Solimões	Amazonas	Onshore	Leste de Urucu	Petrobras ¹ (100)
	Amazonas	Onshore	Rio Urucu	Petrobras ¹ (100)
	Amazonas	Onshore	Sudoeste Urucu	Petrobras ¹ (100)
Tucano Sul	Bahia	Onshore	Conceição	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Matinha	Petrobras ¹ (100)
	Bahia	Onshore	Fazenda Santa Rosa	Petrobras ¹ (100)
	Bahia	Onshore	Quererá	Petrobras ¹ (100)
	Bahia	Onshore	Sempre Viva ²	Orteng ¹ (34) / Delp Engenharia (33) / Logos Engenharia (33)

Source: ANP/SDP.
¹Operator company. ²Marginal fields. ³Fields to be returned by concessionaire(s).

1.2 Reserves

Table 1.1 – Proved oil reserves¹, per location (onshore and offshore), by State – 2000-2009

States	Location	Proved oil reserves (10 ⁶ barrels)										09/08 %
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total		8,464.7	8,495.8	9,804.6	10,601.9	11,243.3	11,772.6	12,181.6	12,623.8	12,801.4	12,857.0	0.43
Subtotal	Onshore	854.2	909.0	927.0	934.5	864.5	882.7	904.9	886.4	895.8	923.8	3.12
	Offshore	7,610.5	7,586.8	8,877.6	9,667.4	10,378.8	10,890.0	11,276.8	11,737.5	11,905.6	11,933.2	0.23
Amazonas	Onshore	128.8	131.8	114.5	110.6	100.0	91.9	96.7	102.7	107.6	114.0	5.88
Ceará	Onshore	2.6	6.6	6.2	5.7	6.8	6.3	5.5	8.4	10.4	15.3	46.82
	Offshore	90.7	64.7	70.0	67.1	70.1	71.3	69.5	57.5	58.9	58.9	-0.04
Rio Grande do Norte	Onshore	283.2	270.8	259.2	260.3	250.2	259.4	263.0	264.6	265.1	262.4	-1.02
	Offshore	65.4	68.7	69.8	71.6	67.4	80.7	79.6	98.1	98.1	102.2	4.09
Alagoas	Onshore	9.3	12.8	12.1	11.4	10.9	11.8	11.3	8.7	6.9	5.8	-15.64
	Offshore	2.1	1.4	1.3	1.4	1.6	1.2	0.9	0.7	0.6	0.7	1.31
Sergipe	Onshore	178.8	210.1	204.8	220.0	223.3	230.0	226.6	231.8	226.4	231.5	2.24
	Offshore	36.7	27.9	27.9	21.1	36.1	37.8	38.1	34.6	35	26.2	-25.13
Bahia	Onshore	190.9	208.1	212.3	211.6	214.8	228.6	241.1	216.1	228.6	241.8	5.78
	Offshore	19.7	12.0	2.9	2.2	2.3	2.3	3.5	37.8	59.6	69.4	16.44
Espírito Santo	Onshore	60.6	68.8	118	114.9	58.4	54.6	60.7	54.1	50.8	53.0	4.39
	Offshore	3.4	6.2	499.8	609.7	1,205.6	1,126.1	1,286.5	1,277.1	1,275.5	1,240.2	-2.77
Rio de Janeiro ²	Offshore	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	10,381.9	0.52
São Paulo	Offshore	5.8	5.2	4.5	4.0	39.9	19.2	23.8	27.6	23.9	24.2	1.22
Paraná ³	Onshore	-	-	-	-	-	-	-	-	-	0.0	-
	Offshore	20.7	25.0	26.9	23.7	14.8	10.7	6.2	21.3	20.7	24.4	17.83
Santa Catarina ⁴	Offshore	-	-	-	12.5	9.9	8.2	6.6	4.8	4.8	5.3	11.59

Source: ANP/SDP, as per Ordinance ANP No. 9/2000.

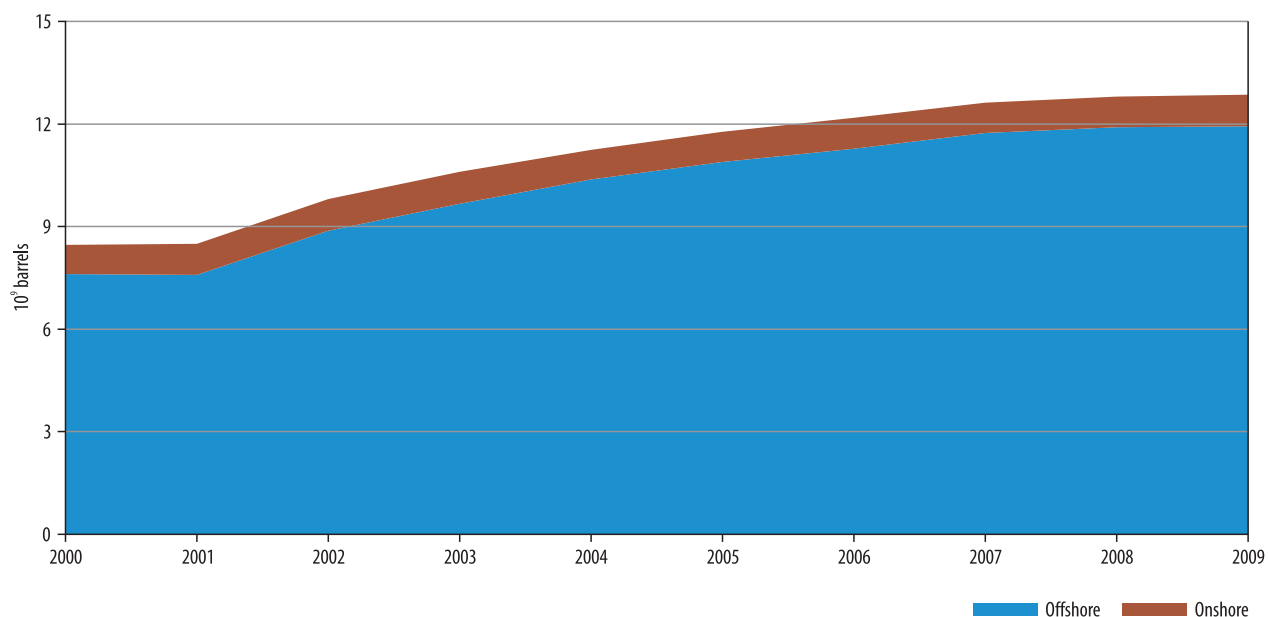
Notes: 1. Reserves on December 31st of reference years.

2. Condensates included.

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

¹Reserves related to fields whose developments plans are still under analysis by ANP included. ²Reserves related to Roncador and Frade fields were totally accounted to the State of Rio de Janeiro by means of simplification.

³Reserves related to Caravela field were totally accounted to the State of Paraná by means of simplification. ⁴Reserves related to Tubarão field are totally accounted to the State of Santa Catarina by means of simplification.

Figure 1.1 – Proved oil reserves, by location (onshore and offshore) – 2000-2009

Source: ANP/SDP (Table 1.1).

Notes: 1. Reserves on December 31st of reference years.

2. Condensates included.

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

Table 1.2 – Proved natural gas reserves¹, per location (onshore and offshore), by State – 2000-2009

States	Location	Proved natural gas reserves (10 ⁶ m ³)										09/08 %
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total		220,999	222,731	244,547	245,340	326,084	306,395	347,903	364,991	364,236	366,467	0.61
Subtotal	Onshore	78,601	77,159	76,070	76,597	73,730	71,752	74,522	68,131	66,305	65,475	-1.25
	Offshore	142,398	145,572	168,477	168,743	252,354	234,643	273,381	296,860	297,931	300,992	1.03
Amazonas	Onshore	44,402	44,549	47,893	49,075	49,448	51,465	53,232	52,774	52,143	52,397	0.49
Ceará	Offshore	1,595	1,186	1,462	1,139	1,066	995	825	825	1,028	784	-23.77
Rio Grande do Norte	Onshore	3,837	3,918	3,585	3,151	2,870	2,558	2,397	1,942	1,585	1,641	3.51
	Offshore	16,841	15,930	17,221	17,289	18,337	15,059	14,047	11,755	8,663	8,373	-3.35
Alagoas	Onshore	5,961	5,766	4,719	4,286	3,929	3,525	3,241	3,042	3,058	2,665	-12.84
	Offshore	1,272	1,154	1,118	980	1,198	1,084	815	850	730	825	12.90
Sergipe	Onshore	789	864	820	861	829	768	814	761	989	925	-6.51
	Offshore	4,861	4,132	3,860	2,525	3,286	2,751	2,978	2,842	2,678	2,523	-5.79
Bahia	Onshore	20,786	19,774	17,244	16,987	15,636	12,379	11,474	8,470	7,447	7,203	-3.29
	Offshore	4,126	3,083	10,101	8,681	9,625	9,388	14,269	26,423	24,671	28,169	14.18
Espírito Santo	Onshore	2,826	2,288	1,809	2,237	1,018	1,057	3,364	1,140	940	640	-31.95
	Offshore	5,477	9,499	14,467	15,258	21,286	31,271	37,385	37,594	38,004	47,052	23.81
Rio de Janeiro ²	Offshore	103,515	106,246	116,339	119,257	119,049	145,378	164,503	167,917	173,142	166,165	-4.03
São Paulo	Offshore	4,669	4,273	3,875	3,508	78,471	28,696	38,543	47,881	48,340	46,189	-4.45
Paraná ³	Onshore	-	-	-	-	-	-	-	1	142	4	-97.12
	Offshore	43	68	34	61	26	15	9	568	468	684	46.03
Santa Catarina ⁴	Offshore	-	-	-	44	11	7	7	206	205	230	12.09

Source: ANP/SDP, as per Ordinance ANP No. 9/2000.

Notes: 1. Reserves on December 31st of reference years.

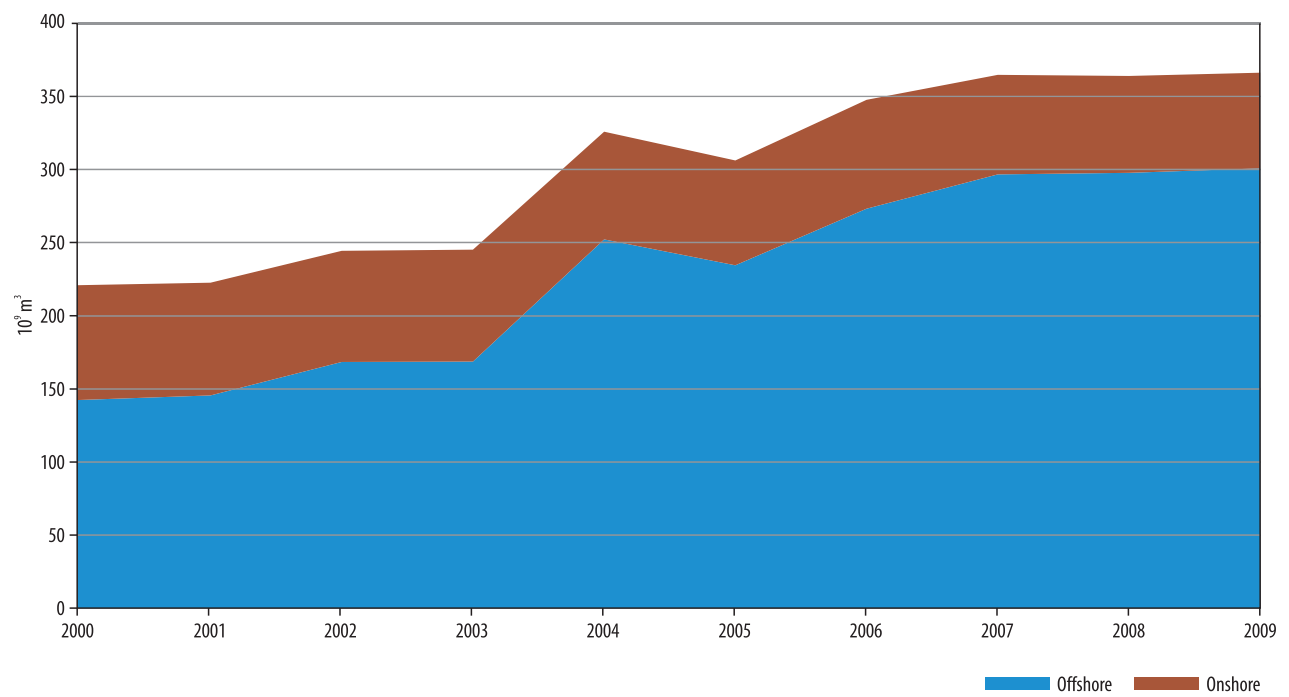
2. Condensates included.

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

¹Reserves related to fields whose developments plans are still under analysis by ANP included. ²Reserves related to Roncador and Frade fields were totally accounted to the State of Rio de Janeiro by means of simplification.

³Reserves related to Caravela field were totally accounted to the State of Paraná by means of simplification. ⁴Reserves related to Tubarão field are totally accounted to the State of Santa Catarina by means of simplification.

Figure 1.2 – Proved natural gas reserves, by location (onshore and offshore) – 2000-2009



Source: ANP/SDP (Table 1.2).
Notes: 1. Reserves on December 31st of reference years.
2. See General Notes item on “Brazilian Oil and Natural Gas Reserves”.

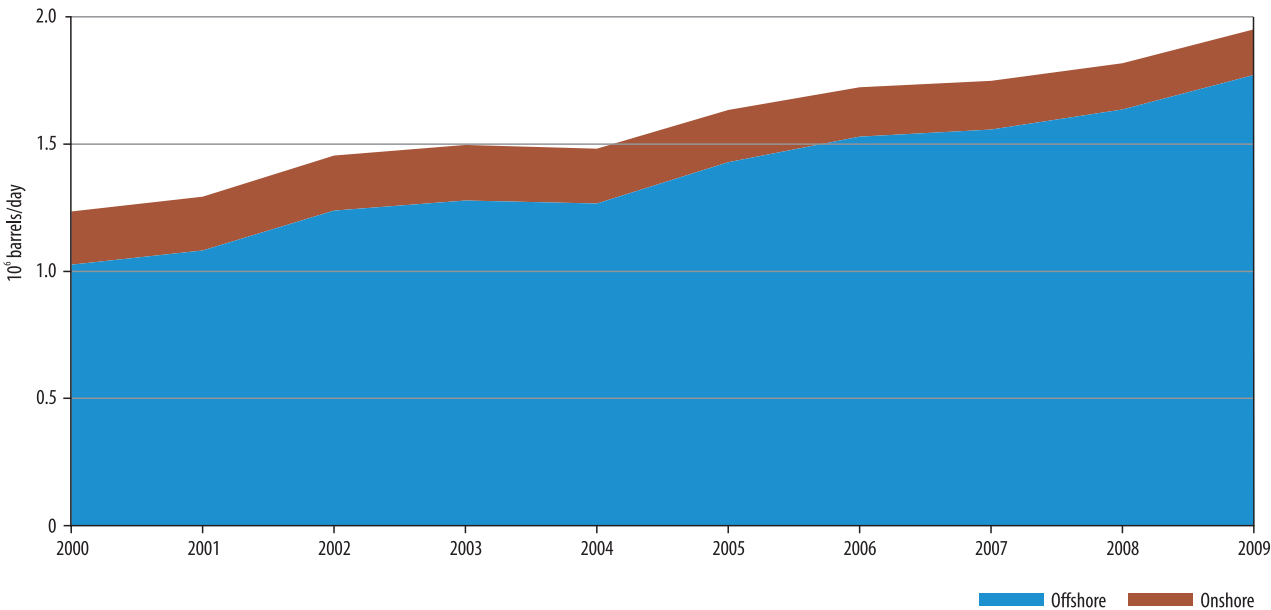
1.3 Production

Table 1.3 – Oil production, per location (onshore and offshore), by State – 2000-2009

States	Location	Oil production (10 ³ barrels)										09/08 %
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total		450,626	471,862	530,855	546,080	540,717	596,255	628,797	638,018	663,275	711,883	7.33
Subtotal	Onshore	76,316	77,170	78,952	79,738	78,632	74,962	70,841	69,893	66337	65,465	-1.32
	Offshore	374,310	394,692	451,902	466,342	462,085	521,292	557,957	568,126	596,938	646,418	8.29
Amazonas	Onshore	15,773	15,743	15,914	15,410	15,541	14,376	13,062	12,276	11,657	12,351	5.95
Ceará	Onshore	849	893	828	997	806	593	559	668	699	761	8.85
	Offshore	4,027	4,705	4,207	4,419	4,176	3,796	3,250	3,098	2,788	2,539	-8.93
Rio Grande do Norte	Onshore	27,340	25,817	25,038	24,658	24,774	23,031	20,435	19,676	19,208	18,295	-4.75
	Offshore	4,417	3,768	3,810	3,917	4,319	4,153	3,731	3,141	3,124	3,012	-3.58
Alagoas	Onshore	2,035	2,108	2,446	2,586	2,477	2,572	2,935	2,897	2,139	2,246	5.01
	Offshore	272	298	277	190	196	186	162	126	109	96	-11.78
Sergipe	Onshore	8,904	9,212	9,681	10,840	11,433	11,909	12,044	12,889	12,371	12,583	1.71
	Offshore	4,564	3,860	3,251	2,650	2,530	2,307	2,300	2,404	4,823	3,515	-27.11
Bahia	Onshore	16,848	16,310	16,061	16,064	16,324	16,144	15,703	15,525	15,156	14,642	-3.39
	Offshore	11	-	-	-	-	-	-	134	284	338	19.24
Espírito Santo	Onshore	4,568	7,087	8,984	9,183	7,278	6,338	6,103	5,963	5,108	4,587	-10.20
	Offshore	99	62	1,138	6,617	4,407	5,945	16,759	36,197	37,133	31,371	-15.52
Rio de Janeiro	Offshore	358,751	380,466	438,292	446,238	443,156	501,772	529,627	520,922	547,348	605,213	10.57
São Paulo	Offshore	566	559	578	534	509	514	457	724	302	333	10.54
Paraná	Offshore	1,603	974	349	1,777	2,793	2,619	1,670	1,380	1,029	-	-

Source: ANP/SDP, as per Decree No. 2.705/1998.
Note: Condensates included.

Figure 1.3 – Oil production, by location (onshore and offshore) – 2000-2009



Source: ANP/SDP (Table 1.3).
Note: Condensates included.

Table 1.4 – NGL production, by State – 2000-2009

States	NGL production (10 ³ barrels)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Brazil	13,115	14,666	16,422	20,549	22,457	28,943	31,532	30,903	31,628	28,717	-9.21
Amazonas	2,234	4,557	4,406	5,267	5,573	6,245	6,405	6,894	6,983	6,759	-3.22
Ceará	146	124	181	195	194	170	144	87	90	68	-24.41
Rio Grande do Norte	2,049	1,924	2,561	2,549	2,977	2,946	2,785	2,763	2,442	2,063	-15.52
Alagoas	-	-	-	320.88	795	857	768	682	612	598	-2.40
Sergipe	1,908	1,882	1,888	1,791	1,841	1,855	1,777	1,726	1,635	1,522	-6.95
Bahia	2,324	2,399	2,224	2,530	2,595	2,670	2,682	2,276	2,199	2,037	-7.37
Espírito Santo	77	74	65	64	87	87	59	71	253	185	-27.07
Rio de Janeiro	4,376	3,706	5,097	7,832	8,396	14,113	16,912	16,403	17,412	15,485	-11.07

Source: ANP/SDP, as per Decree No. 2.705/1998.

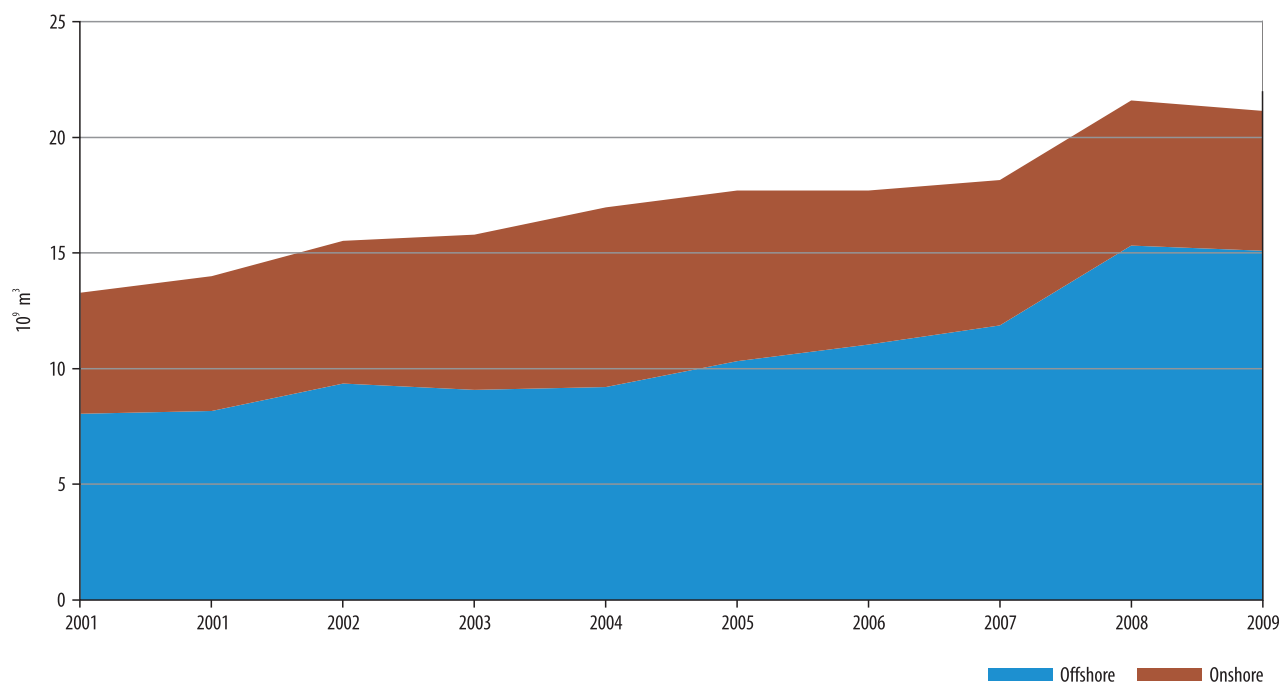
Note: Condensates not included. LPG and C₅⁺ included, as per Ordinance ANP No. 9/2000.

Table 1.5 – Natural gas production, per location (onshore and offshore), by State – 2000-2009

States	Location	Natural gas production (10 ⁶ m ³)										09/08 %
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total		13,282.9	13,998.8	15,525.2	15,792.1	16,971.2	17,699.2	17,699.2	18,151.7	21,592.7	21,141.5	-2.09
Subtotal	Onshore	5,232.6	5,827.5	6,168.6	6,708.6	7,765.5	7,375.3	6,656.9	6,282.9	6,273.1	6,045.2	-3.63
	Offshore	8,050.3	8,171.3	9,356.5	9,083.4	9,205.7	10,323.9	11,042.3	11,868.7	15,319.6	15,096.3	-1.46
Amazonas	Onshore	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	3,780.2	1.28
Ceará	Onshore	0.8	0.7	0.7	0.8	0.6	0.5	0.5	0.6	0.6	0.6	6.07
	Offshore	99.3	92.2	109.6	99.3	125.4	110.6	98.9	77.4	65.8	55.5	-15.58
Rio Grande do Norte	Onshore	390.3	394.5	356.8	301.6	333.5	296.0	266.1	313.9	317.8	273.0	-14.10
	Offshore	874.9	803.1	1,003.5	967.3	1,032.1	1,020.5	914.5	765.0	609.8	488.1	-19.95
Alagoas	Onshore	571.6	599.7	632.6	783.3	1,042.2	999.5	878.6	765.4	685.7	618.0	-9.87
	Offshore	166.7	163.2	149.2	134.6	144.9	169.1	144.1	141.0	128.2	124.4	-2.99
Sergipe	Onshore	58.6	59.3	59.6	66.2	76.3	79.0	84.2	93.2	91.2	92.5	1.43
	Offshore	815.0	752.5	741.9	666.3	601.2	538.7	525.2	453.9	766.5	863.6	12.66
Bahia	Onshore	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	1,172.3	-8.80
	Offshore	0.0	8.5	52.6	50.2	38.2	25.2	16.3	1,166.3	2,079.5	1,881.1	-9.54
Espírito Santo	Onshore	315.2	387.8	411.7	448.4	473.7	474.0	173.1	83.7	159.7	108.5	-32.07
	Offshore	2.0	1.1	9.8	60.9	36.1	45.1	736.6	881.7	2,642.4	967.9	-63.37
Rio de Janeiro	Offshore	5,721.0	5,968.3	6,886.3	6,660.2	6,779.1	7,967.2	8,210.8	8,025.1	8,763.3	10,497.2	19.79
São Paulo	Offshore	324.1	344.0	394.2	388.2	383.4	379.7	357.0	324.1	242.1	218.4	-9.78
Paraná	Offshore	47.2	38.3	9.4	56.4	65.2	67.7	39.0	34.3	21.9	-	-

Source: ANP/SDP, as per Decree No. 2.705/1998.

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

Figure 1.4 – Natural gas production, by location (onshore and offshore) – 2000-2009

Source: ANP/SDP (Table 1.5).

Note: Total production volume includes reinjection, gas flaring, losses, own consumption, as well as condensed gas in LNG form.

Table 1.6 – Production of associated and non-associated natural gas, by State –2000-2009

States	Type	Natural gas production (10 ⁶ m³)										09/08
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	%
Total		13,283	13,999	15,525	15,792	16,971	17,699	17,706	18,152	21,593	21,142	-2.09
Subtotal	Associated	10,775	11,131	12,091	12,135	12,981	13,778	13,661	13,506	14,519	16,976	16.93
	Non-associated	2,508	2,868	3,434	3,657	3,990	3,921	4,045	4,645	7,074	4,165	-41.12
Amazonas	Associated	2,000	2,388	2,718	2,942	3,562	3,533	3,367	3,523	3,699	3,723	0.66
	Non-associated	-	39	26	51	59	34	9	23	34	57	68.29
Ceará	Associated	95	92	110	100	126	111	99	78	66	56	-15.39
	Non-associated	5	1	-	-	-	-	-	-	-	-	-
Rio Grande do Norte	Associated	1,192	1,070	927	796	740	769	716	590	541	518	-4.30
	Non-associated	73	128	433	473	625	548	465	489	386	243	-37.08
Alagoas	Associated	269	270	278	366	409	369	249	219	218	319	46.32
	Non-associated	469	493	504	552	778	800	773	688	596	423	-28.99
Sergipe	Associated	666	615	507	481	420	304	300	292	590	819	38.77
	Non-associated	208	196	294	252	257	313	309	255	268	137	-48.70
Bahia	Associated	744	763	673	631	826	642	476	478	495	630	27.30
	Non-associated	1,152	1,204	1,343	1,535	1,430	1,343	1,419	2,168	2,870	2,423	-15.56
Espírito Santo	Associated	103	89	113	147	107	116	472	603	437	432	-1.16
	Non-associated	215	300	309	362	403	403	437	363	2,365	644	-72.76
Rio de Janeiro	Associated	5,659	5,805	6,756	6,617	6,725	7,867	7,943	7,689	8,450	10,479	24.01
	Non-associated	62	163	131	44	54	100	274	336	313	19	-94.04
São Paulo	Non-associated	324	344	394	388	383	380	8,218 357	324	242	218	-9.78
Paraná	Associated	47	38	9	56	65	68	39	34	22	-	-

Source: ANP/SDP, as per Decree No. 2.705/1998.

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

Refining and Processing

1.4 Oil Refining

Table 1.7 – Refining capacity, by refinery – 2000-2009

Refinery (States)	Refining capacity (m ³ /day)									
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total¹	311,228	311,228	311,928	322,278	322,278	324,978	324,978	328,078	330,153	332,703
Riograndense (RS)	2,000	2,000	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700
Lubnor (CE)	1,000	1,000	1,000	1,000	1,000	1,100	1,100	1,100	1,300	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)	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500	8,500
Reduc (RJ)	38,500	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)	7,300	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	32,000	35,000	35,000
Replan (SP)	56,000	56,000	56,000	58,000	58,000	58,000	58,000	58,000	61,000	66,000
Revap (SP)	36,000	36,000	36,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
RLAM (BA) ²	47,000	47,000	47,000	51,350	51,350	51,350	51,350	51,350	46,950	44,500
RPBC (SP)	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000
Polo de Guamaré (RN)	1,728	1,728	1,728	1,728	1,728	4,328	4,328	4,328	4,328	4,328
Univen (SP)	-	-	-	-	-	-	-	1,100	1,100	1,100
Dax Oil (BA)	-	-	-	-	-	-	-	-	275	275
Total³ (m³/day-calendar)	295,667	295,667	296,332	306,164	306,164	308,729	308,729	311,674	313,645	316,068
Utilization factor⁴ (%)	86.8	89.6	87.7	84.1	90.0	89.6	90.3	91.1	89.9	90.8

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

¹Nominal capacity in m³/day. ²RLAM has an asphalt production plant with 600 m³/day capacity. ³Calendar-day refining considering a 95% mean utilization factor. ⁴Refining utilization factor, considering the volume of processed oil within a year.

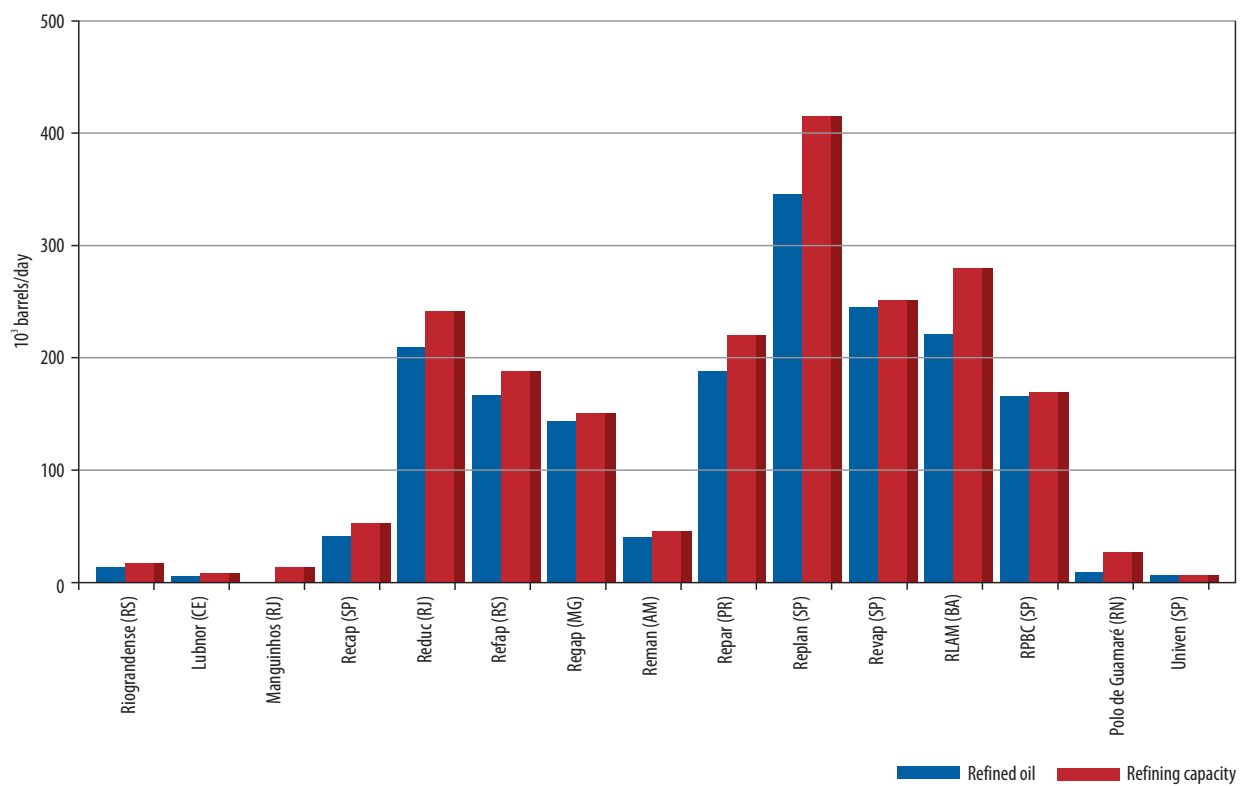
Table 1.8 – Volume of processed oil, per origin (domestic and imported), by refinery – 2009

Refinery (States)	Volume of oil processed (barrels/day)			
	Total	Oil		Other loads ³
		Domestic ¹	Imported ²	
Total	1,805,695	1,383,912	387,572	34,211
Riograndense (RS)	13,704	3,440	10,263	-
Lubnor (CE)	6,047	6,007	-	40
Manguinhos (RJ)	-	-	-	-
Recap (SP)	41,701	33,027	8,593	81
Reduc (RJ)	209,256	109,859	93,030	6,367
Refap (RS)	167,342	73,296	93,234	813
Regap (MG)	143,764	139,407	1,067	3,290
Reman (AM)	40,954	40,659	-	295
Repar (PR)	188,864	126,590	58,350	3,925
Replan (SP)	346,097	276,409	64,176	5,512
Revap (SP)	244,647	206,977	33,858	3,812
RLAM (BA)	221,137	207,149	7,313	6,675
RPBC (SP)	165,965	150,836	14,567	561
Polo de Guamaré (RN)	9,336	9,336	-	-
Univen (SP)	6,881	921	3,121	2,839

Sources: Riograndense; Manguinhos; Univen; Petrobras/Abast.

¹Oil, condensates and C₅⁺ included. ²Oil and condensates included. ³Include 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, by refinery – 2009



Sources: ANP/SRP; Riograndense; Manguinhos; Petrobras/Abast (Tables 1.7 and 1.8).

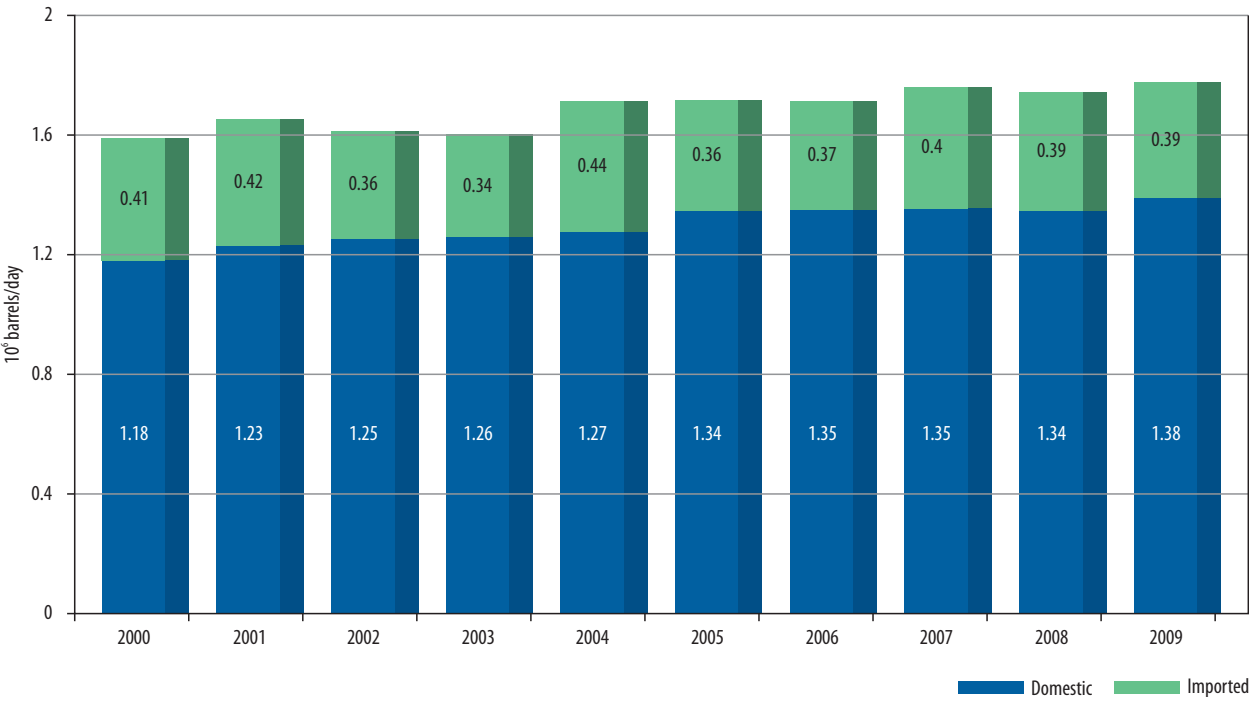
Table 1.9 – Volume of processed oil¹, per origin (domestic and imported), by Country – 2000-2009

Region and country	Volume of oil processed (barrels/day)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2008	
Total	1,614,903	1,666,953	1,635,417	1,620,152	1,734,095	1,740,720	1,752,692	1,786,809	1,773,469	1,805,695	1.82
Other loads²	23,021	17,764	24,656	18,927	24,603	31,210	38,445	30,574	35,277	34,211	-3.02
Oil¹	1,591,882	1,649,189	1,610,761	1,601,225	1,709,492	1,709,510	1,714,247	1,756,235	1,738,193	1,771,484	1.92
Domestic³	1,180,199	1,228,148	1,250,314	1,257,788	1,272,479	1,344,754	1,348,663	1,352,824	1,343,476	1,383,912	3.01
Imported⁴	411,683	421,041	360,447	343,437	437,013	364,756	365,584	403,411	394,717	387,572	-1.81
South and Central America	160,642	91,448	54,086	24,140	21,159	17,412	8,075	6,893	6,436	9,105	41.47
Argentina	106,933	52,871	36,168	14,012	8,985	4,602	875	787	0	8,357	..
Bolivia	1,202	9,977	6,652	9,547	6,176	8,726	6,678	2,231	2,974	-	-
Colombia	21,378	1,733	-	-	1,416	-	-	3,875	3,462	-	-
Ecuador	-	-	-	-	4,134	4,085	522	-	-	-	-
Venezuela	31,129	26,867	11,266	580	449	0	-	-	-	748	..
Europe	-	-	-	5,186	882	12,484	2,895	1,518	3,675	8,065	119.47
Norway	-	-	-	5,186	118	-	-	-	-	-	-
United Kingdom	-	-	-	-	764	12,484	2,895	1,518	3,675	8,065	119.47
Former Soviet Union	-	-	7,537	446	--	-	2,742	12,380	7	-	..
Azerbaijan	-	-	-	-	-	-	2,742	11,306	7	-	-
Kazakhstan	-	-	4,876	446	-	-	-	-	-	-	-
Russia	-	-	2,661	-	-	-	-	1,074	-	-	-
Middle East	90,569	91,455	92,573	100,438	97,633	100,756	94,179	89,337	91,153	94,592	3.77
Saudi Arabia	56,032	69,726	62,561	69,602	62,370	64,909	66,626	55,054	58,523	63,488	8.48
United Arab Emirates	3,626	-	-	-	-	-	-	-	-	-	-
Yemen	3,529	4,108	-	-	-	-	-	-	-	-	-
Iran	-	-	-	724	-	-	-	-	-	-	-
Iraq	27,370	17,621	30,011	30,112	35,263	35,848	27,553	34,283	32,630	31,104	-4.68
Syria	11	-	-	-	-	-	-	-	-	-	-
Africa	158,885	238,137	206,251	210,400	315,440	234,102	257,693	293,283	292,957	271,312	-7.39
South Africa	-	-	1,099	5	-	-	-	-	-	-	-
Angola	-	14,215	306	-	-	4,211	20,376	33,213	53,326	4,457	-91.64
Algeria	99,678	87,765	76,569	66,454	82,467	98,972	50,583	30,395	36,555	21,003	-42.54
Cameroon	-	-	-	-	-	-	-	-	-	-	-
Congo (Brazzaville)	5,418	6,315	4,765	5,011	-	2,768	17,731	11,521	3	-	-
Gabon	-	6,104	5,618	19	-	-	-	-	-	-	-
Gana	-	-	-	-	152	83	-	-	-	-	-
Equatorial Guinea	-	-	-	-	-	-	-	5,343	9,036	3,816	-57.77
Libya	2	-	-	-	-	-	7,305	36,152	33,029	36,576	10.74
Nigeria	53,787	123,738	117,894	138,911	232,821	128,069	161,698	176,660	161,008	205,460	27.61
Asia-Pacific	1,588	-	-	2,828	1,899	-	-	-	489	4,498	819.70
Australia	1,588	-	-	2,828	1,899	-	-	-	489	4,498	819.70

Sources: Riograndense; Manguinhos; Univen; Petrobras/Abast, from 2001; and ANP/SPP, as per Ordinance CNP No. 348/1982, for former years.

¹Refers to oil feed which is processed in primary distillation units. ²Oil and oil products residuals included, as well as residuals from terminals which are reprocessed together with oil and condensate feeds in atmospheric distillation units. ³Oil, condensates and C₅ included. ⁴Oil and condensates included.

Figure 1.6 – Volume of processed oil, per origin (domestic and imported) – 2000-2009



Sources: ANP/SPP; Riograndense; Univen; Manguinhos; Petrobras/Abast (Table 1.9).
¹Oil, condensate and C₅⁺ included. ²Oil and condensate included.

1.5 Production of Oil Products

Table 1.10 – Production of energy and non-energy oil products –2000-2009

Oil products	Production (m ³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	94,002,738	99,331,480	97,053,038	97,559,414	103,159,457	104,491,941	106,265,393	108,537,251	108,207,462	109,750,763	1.43
Energy	77,642,411	83,626,332	82,116,858	82,518,464	88,051,064	89,018,182	89,909,655	91,412,647	91,464,529	92,437,697	1.06
Gasoline A	18,576,362	19,930,401	19,406,616	18,536,773	18,582,826	19,979,562	21,330,106	21,598,969	21,041,901	20,874,989	-0.79
Aviation gasoline	85,480	93,357	71,202	71,731	79,829	70,199	64,598	62,159	67,966	52,746	-22.39
LPG ¹	7,903,019	8,753,545	9,089,532	9,627,820	9,986,520	10,819,555	10,270,901	10,456,250	10,277,504	10,019,046	-2.51
Fuel oil ^{2,3}	16,066,498	17,524,581	16,359,592	15,684,652	16,497,346	15,075,499	15,112,402	15,389,837	14,704,434	14,053,755	-4.43
Diesel oil ³	30,973,063	33,252,428	33,209,148	34,382,201	38,501,966	38,743,022	39,111,322	39,572,842	41,134,038	42,898,461	4.29
Jet fuel	3,744,299	3,714,404	3,625,255	3,792,358	4,142,460	4,150,003	3,823,671	4,102,676	3,871,687	4,380,983	13.15
Lightening kerosene	199,639	227,694	227,275	193,138	112,858	50,107	37,691	24,969	23,158	19,016	-17.88
Others ⁴	94,051	129,922	128,237	229,790	147,259	130,235	158,964	204,944	343,840	138,701	-59.66
Non-energy	16,360,327	15,705,148	14,936,180	15,040,950	15,108,393	15,473,759	16,355,738	17,124,605	16,742,933	17,313,066	3.41
Asphalt	1,764,207	1,628,223	1,664,213	1,135,327	1,415,212	1,419,621	1,864,970	1,680,039	2,125,959	2,089,926	-1.69
Coke ⁵	1,957,649	1,792,502	1,817,122	1,781,203	1,738,899	2,394,882	2,372,802	2,563,296	2,811,485	3,084,025	9.69
Naphtha ⁶	10,182,022	9,913,132	8,793,587	8,952,160	8,743,655	8,498,006	8,626,248	9,244,639	8,134,049	8,402,282	3.30
Lubricating oil	915,612	837,476	803,985	807,086	759,667	801,741	785,804	645,053	756,200	593,794	-21.48
Paraffin	151,594	120,153	136,311	132,619	143,729	140,457	134,417	129,638	130,069	105,594	-18.82
Solvent	514,635	618,094	685,329	990,771	1,081,036	827,175	612,561	580,186	478,709	454,896	-4.97
Others ⁷	874,608	795,568	1,035,634	1,241,785	1,226,196	1,391,877	1,958,935	2,281,754	2,306,463	2,582,549	11.97

Sources: Manguinhos; Riograndense; Univen; Petrobras/Abast for refineries since 2001. ANP/SPP, as per Ordinance CNP No. 348/1982, for year 2000. ANP/SRP, as per Ordinance No. 54/2001, for petrochemical plants since 2001.

Notes: 1. Refineries, petrochemical plants, NGPPs and other producers production included. Shale plants production (except naphtha) not included.

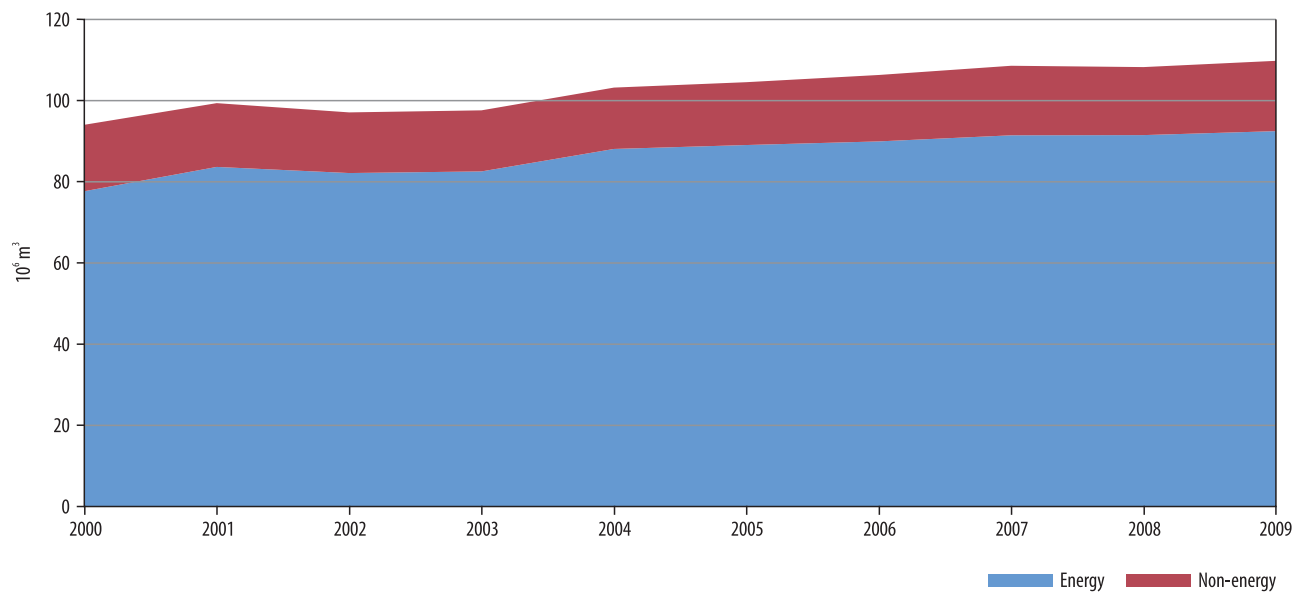
2. Shale plants production, except naphtha (see specific note 6) not included.

3. Oil products own consumption of production plants not included.

4. Fuel gas production of refineries not included.

¹Refers to propane/butane mixtures for household and industrial uses. ²Refinery fuel oil not included. ³Components intended to marine diesel oil production in some waterway/marine terminals included. ⁴Light oil for power generation included. ⁵Coke for energy use included. ⁶Naphtha produced from shale processing included. That naphtha is then used as raw material for oil products production at Repar. ⁷Diluents, non-energy residues, non-energy LPG and other on-energy products included.

Figure 1.7 – Production of energy and non-energy oil products – 2000-2009



Sources: ANP/SPP; ANP/SRP; Riograndense; Univen; Manguinhos; Petrobras/Abast (Table 1.10).

Notes: 1. Production of refineries and petrochemical plants included, as well the ones of NGPPs and other producers.
2. Production of shale processing plants not included.
3. Own consumption of producing plants not included.
4. Fuel gas from refineries and shale producing plants not included.

1.6 Natural Gas Processing

Table 1.11 – Natural gas processing capacity, by producing plants, on December 31st, 2009

Producing units	Location (State)	Start up	Nominal capacity (10 ³ m ³ /day) ¹
Total			64,336
NGPP Urucu I	Coari (AM)	1993	706
NGPP Urucu II	Coari (AM)	2000	6,000
NGPP Urucu III	Coari (AM)	2004	3,000
NGPP Lubnor	Fortaleza (CE)	1987	350
NGPP Guamaré I	Guamaré (RN)	1985	2,300
NGPP Guamaré II	Guamaré (RN)	2001	2,000
NGPP Guamaré III	Guamaré (RN)	2006	1,500
NGPP Pilar	Pilar (AL)	2003	1,800
NGPP Atalaia	Aracaju (SE)	1981	2,900
NGPP Carmópolis	Carmópolis (SE)	1989	350
NGPP Candeias	Candeias (BA)	1972	2,900
NGPP Catu	Pojuca (BA)	1962	1,900
NGRP-3 Bahia	Pojuca (BA)	2005	2,500
NGPP Lagoa Parda	Linhares (ES)	1983	450
DPP Lagoa Parda ²	Linhares (ES)	2004	1,500
NGPP-U-2500-Reduc	Duque de Caxias (RJ)	1983	2,500
NGPP-U-2600-Reduc	Duque de Caxias (RJ)	1987	2,000
LFP Reduc ²	Duque de Caxias (RJ)	2002	5.4
NGPP Cabiúnas	Macaé (RJ)	1997	2,800
NGCPP Cabiúnas I ³	Macaé (RJ)	1987	1.5
NGCPP Cabiúnas II ³	Macaé (RJ)	2007	1.5
NGCPP Cabiúnas III ³	Macaé (RJ)	2009	1.5
NGPP Cabiúnas	Macaé (RJ)	1987	580
LPP Cabiúnas I	Macaé (RJ)	2002	4,500
LRP Cabiúnas II	Macaé (RJ)	2004	4,500
UGN - RPBC	Cubatão (SP)	1993	2,300
NGPP EVF	São Francisco do Conde (BA)	2007	6,000
NGPP Cacimbas	Linhares (ES)	2008	3,500
NGCPP Cacimbas ³	Linhares (ES)	2008	1.5
DPP Cacimbas ²	Linhares (ES)	2008	5,500

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

¹Volume in gaseous state. ²Dew Point Plant of natural gas. ³Plants that process solely condensates. In that case, their capacity is expressed in units of volume in liquid state, not being accounted by in total volume.

Table 1.12 – Volume of processed natural gas and dry natural gas, LPG and C₅⁺ production, by processing plants – 2009

NGPPs (State)	Volume of processed natural gas and production of dry natural gas, LPG and C ₅ ⁺			
	Processed natural gas (10 ³ m ³) ¹	Products (10 ³ m ³)		
		LPG ²	C ₅ ⁺ ²	Dry natural gas ¹
Total	14,157,658	1,757	467	12,891,650
Atalaia (SE) ³	1,040,233	166	67	977,776
Bahia (BA) ⁴	1,960,094	-	-	1,864,092
Cabiúnas (RJ) ⁵	4,332,013	301	171	3,703,004
Guamaré (RN) ⁶	923,065	262	66	837,846
Lagoa Parda (ES) ⁷	601,002	10	13	594,002
Lubnor (CE)	30,963	-	-	28,301
Pilar (AL)	549,961	71	24	526,965
Reduc (RJ) ⁸	833,723	-	-	743,856
RPBC (SP) ⁹	215,619	-	-	213,463
Urucu (AM) ¹⁰	3,670,985	947	127	3,402,343

Source: Petrobras/Unidade de Negócios Gás Natural.

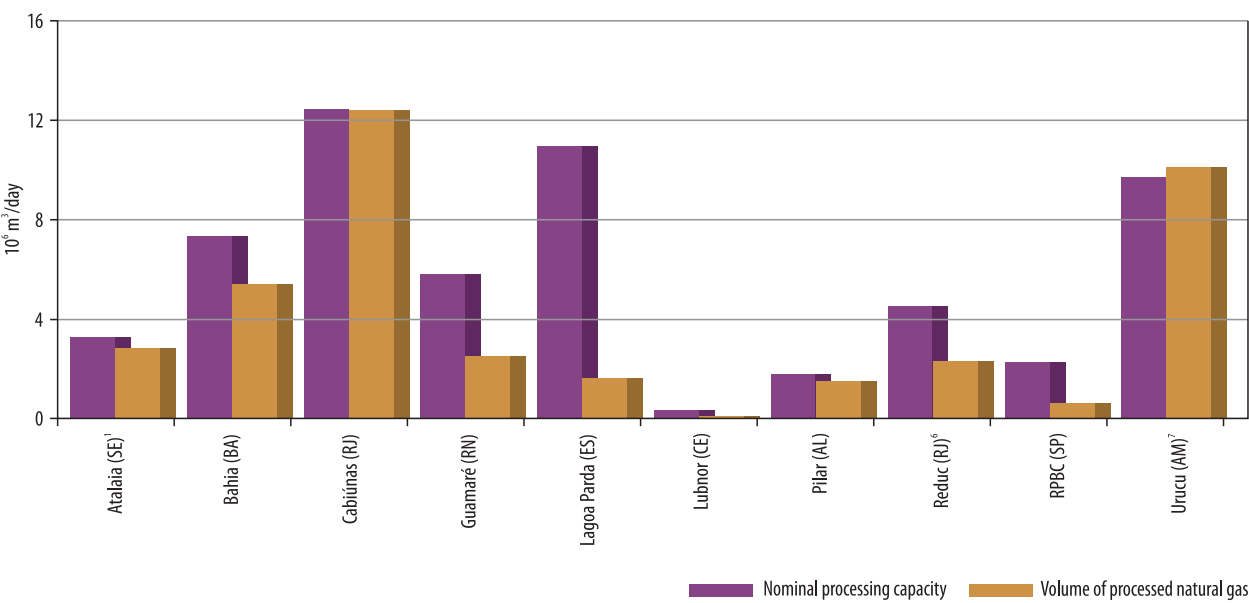
¹Volumes in gaseous state. ²Volumes in liquid state. ³Production of Atalaia and Carmópolis NGPPs included. LNG produced in Carmópolis NGPP is fractionated in GLP and C₅⁺ at Atalaia NGPP. ⁴Processed volumes in Bahia, Catu and Candeias NGPPs included. NGL produced in that units is in RLAM, while LPG and C₅⁺ fractions are accounted for in that refinery's production. ⁵Processed volumes in Cabiúnas NGCPP,NGPP, MGRP and LRP included. NGL produced in NGRP is fractionated in NGCPPs. LNG produced in LRP is fractionated in Reduc's LFP, while LPG and C₅⁺ are accounted for in that refinery's production. ⁶Volumes produced in Guamaré I, II and III NGPPs included. ⁷Volumes produced in Lagoa Parda NGPP and DPP included, as well as the ones of Cacimbas NGPP, NGCPP and DPP. ⁸Processed volumes in Reduc I and II NGPPs are accounted for in REDUC's production, as well as LPG and C₅⁺ parcels. ⁹That NGP only separates and stabilizes gas condensate. ¹⁰Produced volumes in Urucu I, II and III NGPPs included.

Table 1.13 – Production of dry natural gas, L_{GP} e C₅⁺ in Natural Gas Processing Plants – 2000-2009

Products	Production of dry natural gas, L _{GP} e C ₅ ⁺ in Natural Gas Processing Plants – 2000-2009										08/07 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Dry natural gas ^{1,2}	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	12,891,650	-15.23
Liquids ³	1,257	1,627	1,686	1,813	1,950	2,145	2,260	2,266	2,262	2,224	-1.66
GLP ⁴	996	1,344	1,382	1,481	1,598	1,753	1,783	1,792	1,803	1,757	-2.52
C ₅ ^{4,5}	261	283	304	332	351	392	477	474	459	467	1.79

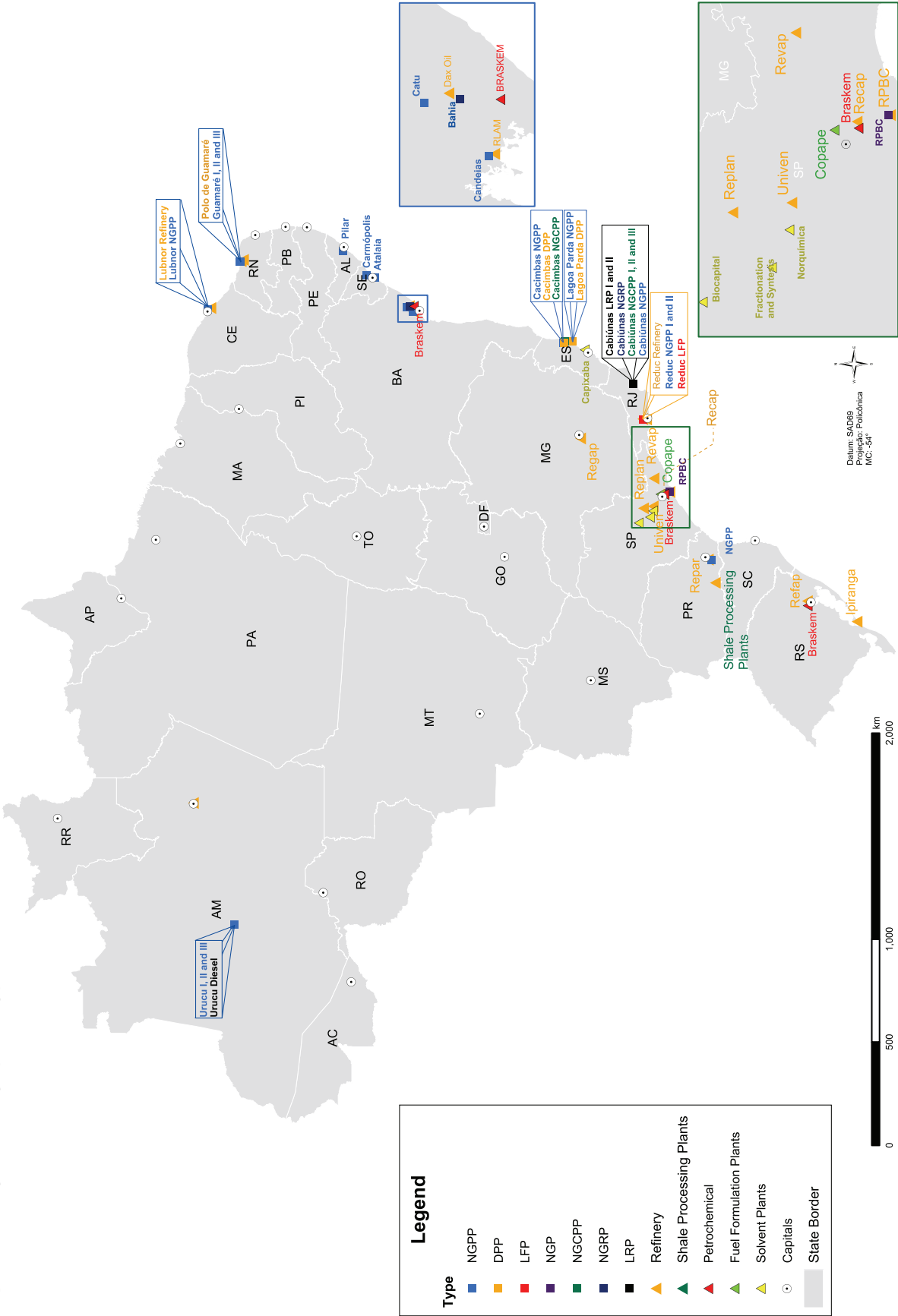
Sources: Petrobras/Unidade de Negócios Gás Natural, since 2001; Petrobras/Abast, for years 1999 and 2000.
¹Volumes in gaseous state. ²All produced dry gas from Urucu is reinjected. ³Liquids refers to the sum of GLP e C₅⁺ volumes. ⁴Volumes in liquid state. ⁵Bahia, Catu and Candeias C₅⁺ volumes from Lubnor are mixed to naphtha produced in RLAM; C₅⁺ volumes from Reduc I and II NGPPs are mixed to the naphtha produced in Reduc. C₅⁺ volumes from Lubnor are mixed to solvents. C₅⁺ volumes are accounted to naphtha production of the respective refineries. In other refineries, C₅⁺ is added to oil volumes.

Figure 1.8 – Volume of processed natural gas and processing capacity, by NGPPs – 2009



Sources: ANP/SRP; Petrobras/Unidade de Negócios de Gás Natural (Table 1.12 and 1.13).
¹Atalaia and Carmópolis NGPPs included. ²NGPPs Catu, Candeias and Bahia included. ³Cabiúnas NGCPP, NGPP, NGRP and LRP included. ⁴Guaráre I, II and III NGPPs included. ⁵Lagoa Parda NGPP and DPP included, as well as Cacimbas DPP and NGCPP. ⁶Reduc I and II NGCC included. ⁷Urucu I, II and III included.

Map 1.1 – Refining and natural gas processing plants – 2009



Shale Industrialization

1.7 Shale Industrialization

Table 1.14 – Volume of processed shale oil and production of shale oil products – 2000-2009

Specification	Unit	Volume of processed shale oil and production of shale oil products										09/08 %
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Processed shale oil	t	2,676,432	2,787,911	2,452,137	2,165,610	2,414,326	1,969,652	2,242,079	2,343,086	2,014,885	2,117,820	5.11
Products												
Energy												
Shale gas	t	10,853	11,977	14,379	13,326	14,855	13,936	15,619	18,756	13,087	14,314	9.38
LPG ¹	m ³	25,485	27,560	16,028	21,535	24,607	20,079	20,958	23,624	18,529	27,044	45.96
Fuel oil	m ³	123,035	119,036	127,461	98,710	121,068	104,385	107,944	102,544	155,691	270,576	73.79
Non-energy												
Naphtha ²	m ³	39,400	40,088	39,108	40,450	39,694	34,552	44,632	48,083	37,725	40,809	8.18
Others ³	m ³	-	14,722	12,155	14,172	16,045	12,097	13,623	4,012	2,349	1,548	-34.10

Source: Petrobras/Abast.
¹Propane and butane included. ²Naphtha production is sent to Repar, where is used as raw material in the production of oil products. ³Other non-energy oil products of lesser importance included.

Transportation of Oil its Products and Natural Gas

1.8 Terminal

Table 1.15 – Storage capacity of oil, oil products and ethanol, by terminal, on December 31st, 2009 (continue)

Type, location (State) and operator	Storage capacity of oil, oil products and ethanol				
	Number of tanks	Nominal capacity (m ³)			
		Oil	Oil products (except LPG)	LPG	Total
Total	1,556	5,420,752	6,064,588	326,655	11,811,995
Ethanol Storage Facility	21	-	105,000	-	105,000
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
Waterway terminals	1,157	3,983,479	3,988,509	239,339	8,211,327
Alemoa (SP)-Stolthaven	37	-	81,550	-	81,550
Alemoa (SP)-Transpetro	26	-	263,134	83,002	346,136
Alemoa (SP)-Tequimar (ex-União)	95	-	95,695	-	95,695
Alemoa (SP)-Tequimar TIS	33	-	78,469	-	78,469
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	75	-	158,940	-	158,940
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)-Liquigás ¹	-	-	-	-	-
Canoas (RS)-Supergasbras ¹	-	-	-	-	-
Canoas (RS)-Transpetro	3	-	15,656	-	15,656
Carmópolis (SE)-Transpetro	5	155,788	-	-	155,788
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)-Adonai	7	-	6,184	-	6,184
Ilha de Barnabé (SP)-Ageo	16	-	40,005	-	40,005
Ilha Barnabé (SP)-Copape	6	-	30,479	-	30,479
Ilha Barnabé (SP)-Granel	82	-	78,000	-	78,000
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	-	-	33,563	33,563
Itajaí (SC)-Liquigás ¹	-	-	-	-	-
Itajaí (SC)-Transpetro	13	-	50,433	6,364	56,797
Itaqui (MA)-Granel	28	-	55,222	-	55,222
Itaqui (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 ²	-	-	-	-	-
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	-	194,602	9,532	204,134
Porto Velho (RO)-Fogás ³	-	-	-	-	-
Refinaria de Manguinhos (RJ) ⁴	-	-	-	-	-
Regência (ES)-Transpetro	4	42,427	-	-	42,427
Rio de Janeiro-Caju (RJ)-União	24	-	17,245	-	17,245

Table 1.15 – Storage capacity of oil, oil products and ethanol, by terminal, on December 31st, 2009

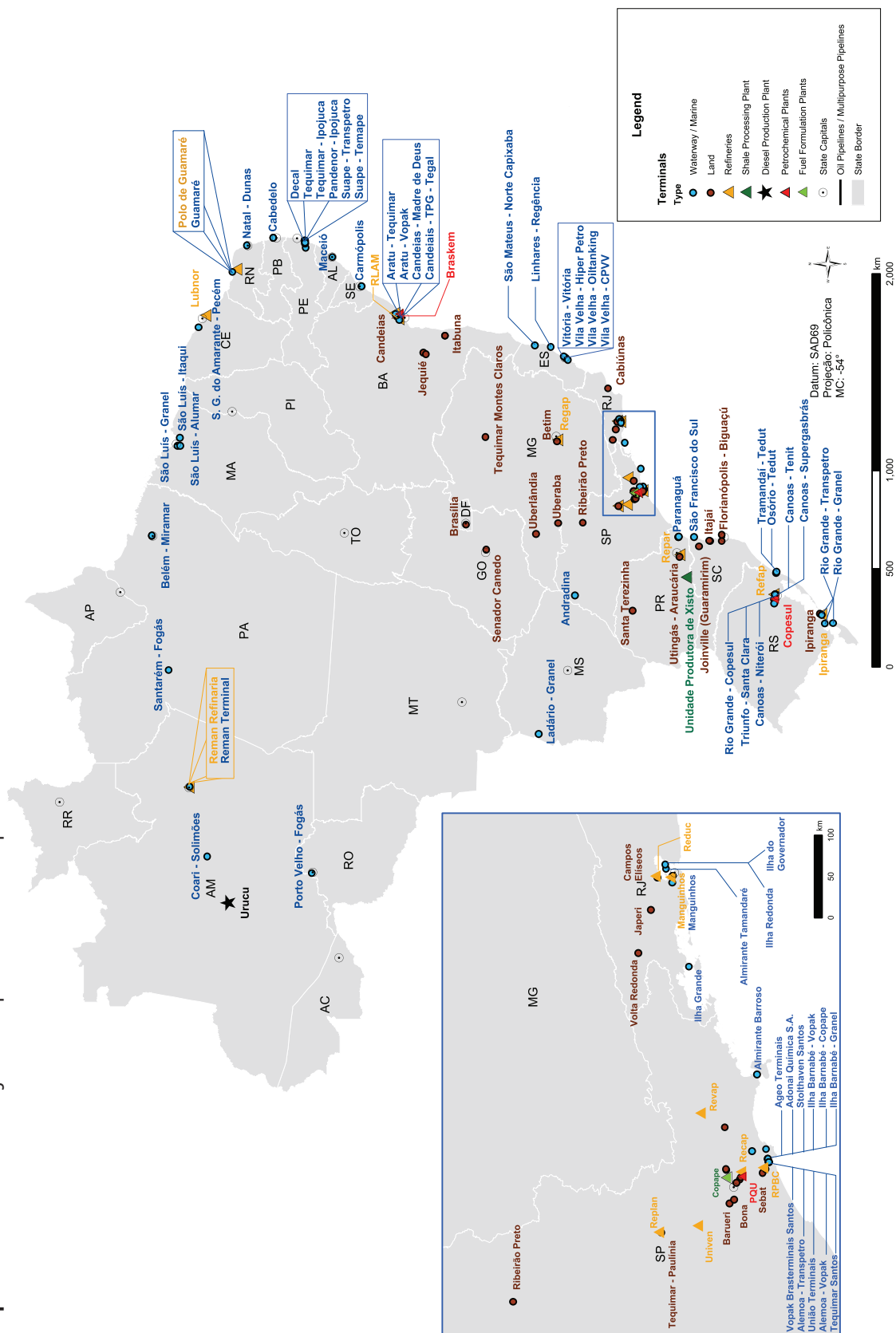
Type, location (State) and operator	Storage capacity of oil, oil products and ethanol				
	Number of tanks	Nominal capacity (m ³)			
		Oil	Oil products (except LPG)	LPG	Total
Rio de Janeiro-Ilha do Governador (RJ)-Esso	68	-	37,073	-	37,073
Rio de Janeiro-Ilha do Governador (RJ)-ExxonMobil	14	-	33,509	-	33,509
Rio de Janeiro-Suzano Petroquímica S.A	-	-	-	-	-
Rio Grande (RS)-Copesul	32	-	36,800	2,616	39,416
Rio Grande (RS)-Granel	20	-	38,424	-	38,424
Rio Grande (RS)-Transpetro ⁵	18	-	61,299	-	61,299
São Mateus (ES)-Transpetro	5	78,000	-	-	78,000
Santa Clara (RS)-Copesul ⁶	5	-	19,000	-	19,000
Santarém (PA)-Fogás ¹	-	-	-	-	-
São Francisco do Sul (SC)-Transpetro	7	466,622	-	-	466,622
São Luís (MA)-Almar	1	-	21,849	-	21,849
Suaape (Ipojuca-PE)-Decal	13	-	156,222	-	156,222
Suaape (Ipojuca-PE)-Pandenor	17	-	33,350	-	33,350
Suaape (PE)-Temape	11	-	33,937	-	33,937
Suaape (PE)-Tequimar	33	-	118,545	5,000	123,545
Suaape (PE)-Transpetro	10	-	55,031	15,940	70,971
TPG-Tegal (BA)-Braskem ⁷	-	-	-	-	-
Vila Velha (ES)-CPVV	3	-	1,504	-	1,504
Vila Velha (ES)-Hiper Petro	2	-	3,200	-	3,200
Vila Velha (ES)-Oiltanking	10	-	36,857	-	36,857
Vitória (ES)-Transpetro	2	-	11,000	-	11,000
Land terminals	378	1,437,273	1,971,079	87,316	3,495,668
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
Campos Elísios (RJ)-Transpetro	10	483,928	68,364	-	552,292
Candeias (BA)-Transpetro	12	-	36,417	-	36,417
Cubatão (SP)-Transpetro	15	47,229	112,625	-	159,854
Florianópolis (Biguaçu) (SC)-Transpetro	10	-	38,361	-	38,361
Guararema (SP)-Transpetro	14	420,918	618,603	-	1,039,521
Guarulhos (SP)-Copape	6	-	7,267	-	7,267
Guarulhos (SP)-Transpetro	22	-	165,281	-	165,281
Itabuna (BA)-Transpetro	13	-	18,961	4,592	23,553
Japeri (RJ)-Transpetro	7	-	38,588	-	38,588
Jequié (BA)-Transpetro	14	-	19,920	4,462	24,382
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
Utinga (SP)-Transpetro	19	-	222,592	-	222,592
Uberaba (MG)-Transpetro	8	-	42,925	-	42,925
Uberlândia (MG)-Transpetro	12	-	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.

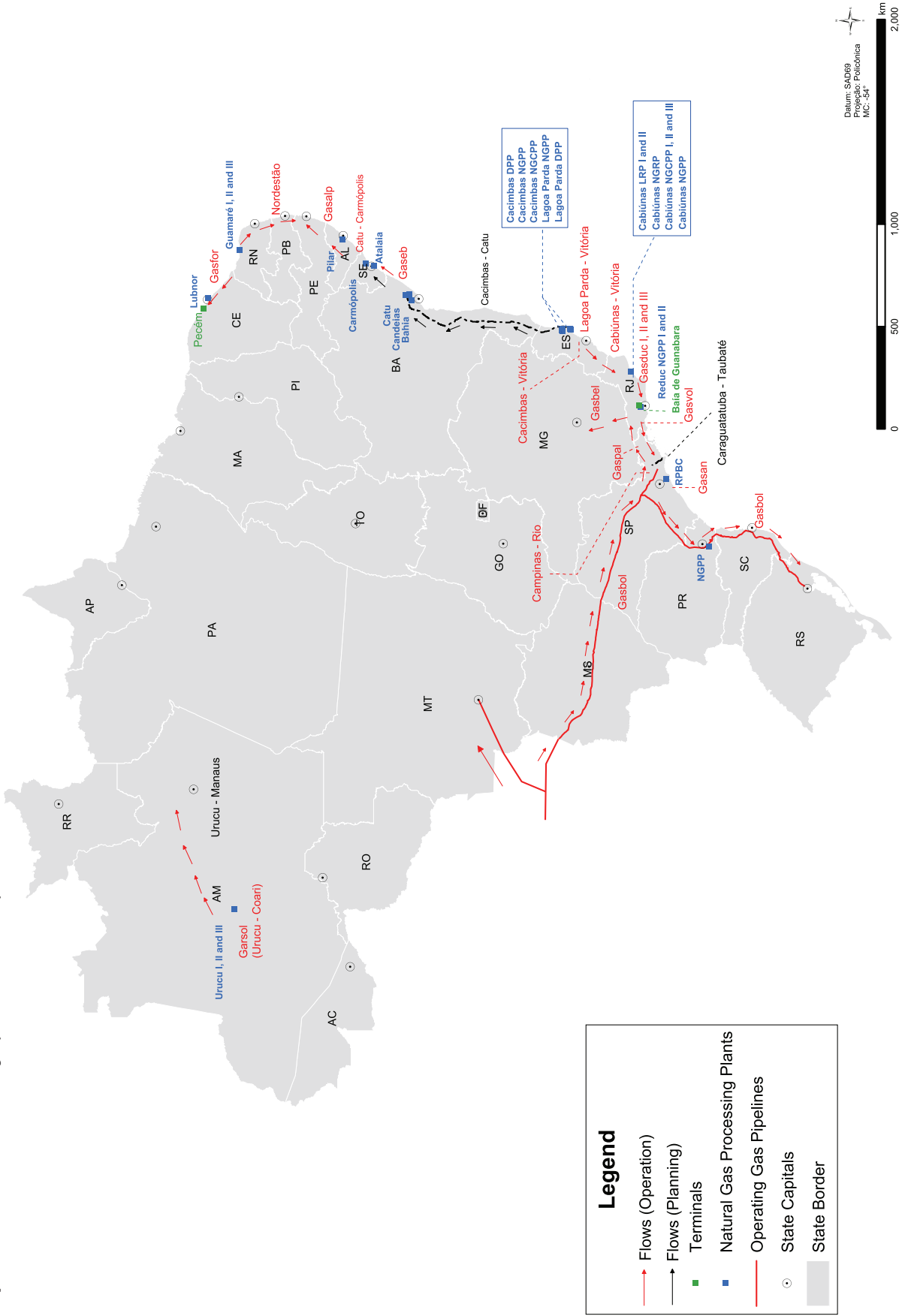
¹Storage area includes only mooring piers and pipelines. ²Storage capacity belongs to Refinaria de Manaus. ³LPG storage area in Fogás base. ⁴The mooring system is interconnected with the tank park of Refinaria de Mangueiras. ⁵Receives oil to be processed in Refinaria Riograndense. ⁶Copesul's petrochemical plant is directly connected to the mooring pier through pipelines. In that terminal, storage tanks for raw materials are located within its area. ⁷Braskem 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 1.2 – Infrastructure for storage and transportation of oil and its products – 2009



Map 1.3 – Infrastructure for natural gas production and transportation – 2009



Commercialization of Oil, its Products and Natural Gas

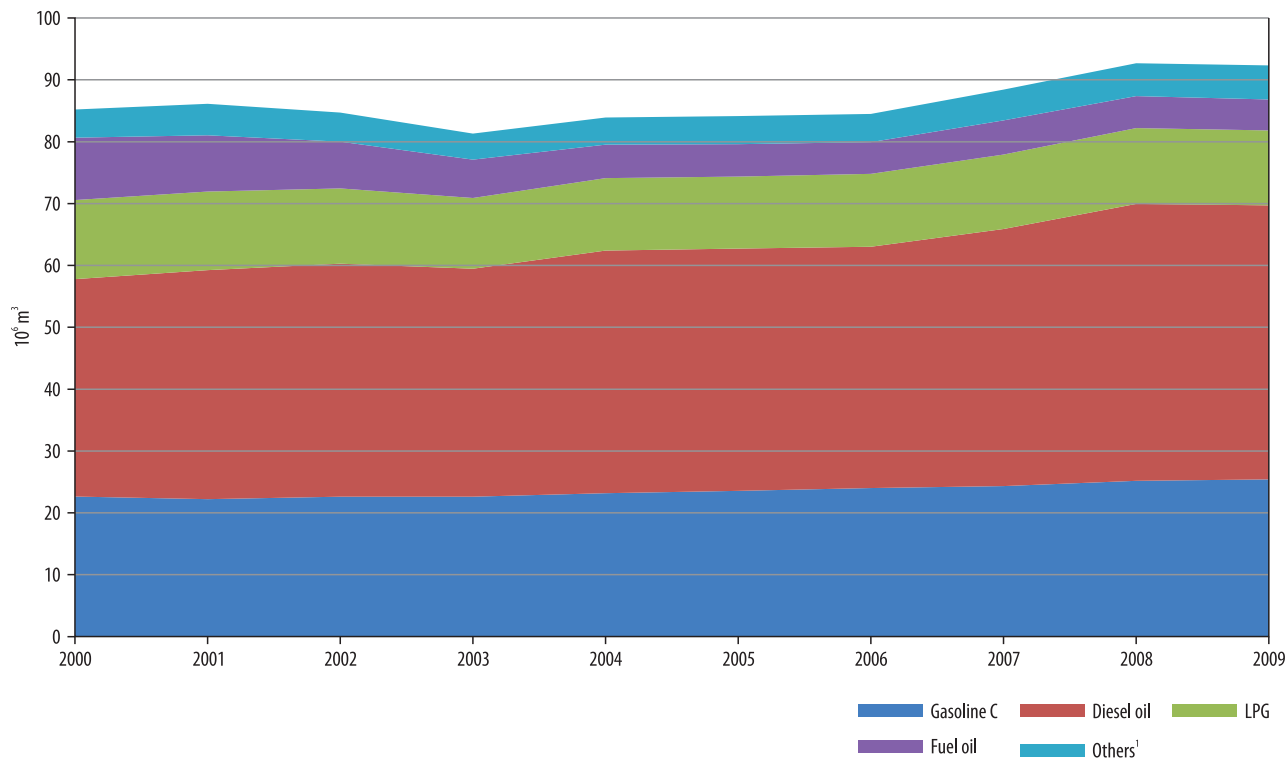
1.10 Commercialization of Oil, its Products and Natural Gas

Table 1.16 – Domestic sales of main oil products, by distributors – 2000-2009

Oil products	Domestic sales at distribution level (10 ³ m ³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	85,204	86,123	84,705	81,309	83,907	84,140	84,486	88,419	92,682	92,332	-0.38
Gasoline C	22,630	22,211	22,610	22,610	23,174	23,553	24,008	24,325	25,175	25,409	0.93
Aviation gasoline	76	71	63	59	61	55	52	55	61	62	2.41
LPG	12,783	12,703	12,165	11,436	11,708	11,639	11,783	12,034	12,259	12,113	-1.19
Fuel oil	10,086	9,093	7,561	6,200	5,413	5,237	5,127	5,525	5,172	5,004	-3.24
Diesel oil	35,151	37,025	37,668	36,853	39,226	39,167	39,008	41,558	44,764	44,298	-1.04
Jet fuel	4,333	4,818	4,436	3,972	4,209	4,429	4,466	4,891	5,227	5,428	3.84
Lamp oil	145	202	201	177	116	59	42	31	24	16	-32.75

Source: ANP/SAB. Up to 2006, data as per Ordinance CNP No. 221/1981. Since 2007, data as per Ordinance ANP No. 17/2004.
Note: Up to 2006, data include distributors sales and their own consumption. Since 2007, only distributor sales are included.

Figure 1.9 – Domestic sales of main oil products, by distributors – 2000-2009



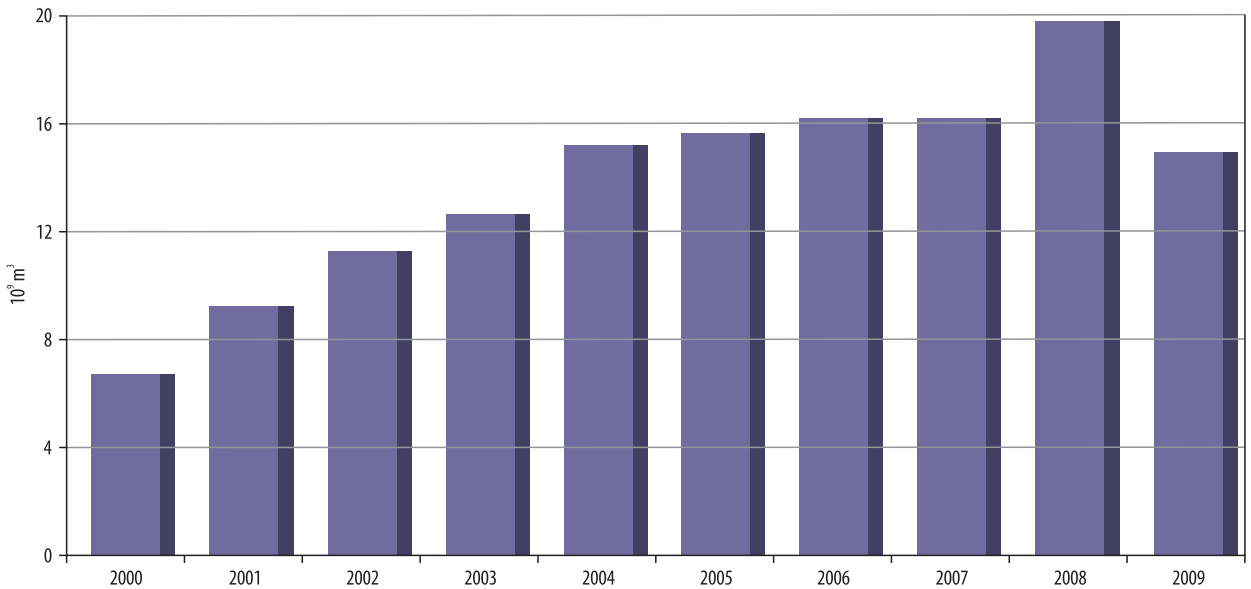
Source: ANP/SAB (Table 1.14).
¹Aviation gasoline, jet fuel and lamp oil included.

Table 1.17 – Natural gas domestic sales by Brazilian Region and State – 2000-2009

States	Natural gas sales by producers (10 ⁶ m ³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	6,583	9,088	11,100	12,488	14,997	15,426	15,974	16,012	19,563	14,710	-24.81
North	-	-	-	-	-	-	-	-	553	475	-14.15
Amazonas	-	-	-	-	-	-	-	-	553	475	-14.15
Northeast	2,526	2,645	2,812	3,533	4,022	3,539	3,291	3,393	3,376	3,388	0.36
Ceará	74	102	141	226	479	266	225	173	186	266	42.87
Rio Grande do Norte	48	56	77	98	112	125	137	152	148	134	-9.35
Paraíba	59	69	81	87	93	99	115	132	138	131	-4.60
Pernambuco	239	264	283	279	780	662	490	391	422	475	12.64
Alagoas	143	145	151	135	145	155	169	181	181	165	-9.15
Sergipe ¹	512	450	463	456	443	513	491	476	405	428	5.60
Bahia ¹	1,453	1,559	1,616	2,253	1,970	1,719	1,664	1,889	1,895	1,789	-5.64
Southeast	3,794	5,049	6,470	7,060	8,448	9,421	10,194	10,619	13,965	9,443	-32.38
Minas Gerais	305	365	403	483	726	647	733	616	830	531	-36.1
Espírito Santo	263	337	353	395	409	385	406	445	673	490	-27.1
Rio de Janeiro	1,559	2,054	2,702	2,639	3,203	3,610	3,730	3,770	6,453	3,448	-46.57
São Paulo	1,668	2,293	3,012	3,543	4,110	4,779	5,324	5,788	6,009	4,974	-17.23
South	262	1,239	1,247	1,191	1,558	1,749	1,934	1,652	1,564	1,350	-13.71
Paraná	53	127	206	186	219	249	303	363	348	293	-15.87
Santa Catarina	76	218	287	311	389	474	527	567	579	582	0.46
Rio Grande do Sul	134	895	753	694	949	1,026	1,105	723	637	475	-25.42
Central-West	-	154	572	704	969	716	555	348	105	54	-48.86
Mato Grosso do Sul	-	100	117	287	653	476	342	139	87	54	-38.03
Mato Grosso	-	54	455	416	316	240	213	208	18	-	..

Source: Petrobras/Unidade de Negócios de Gás Natural.
Note: Only the States where there were sales of natural gas in specified period are listed.
¹Sales for Nitrogen Fertilizer plants (Fafen) belonging to Petrobras are included.

Figure 1.10 – Natural gas domestic sales, at production level – 2000-2009



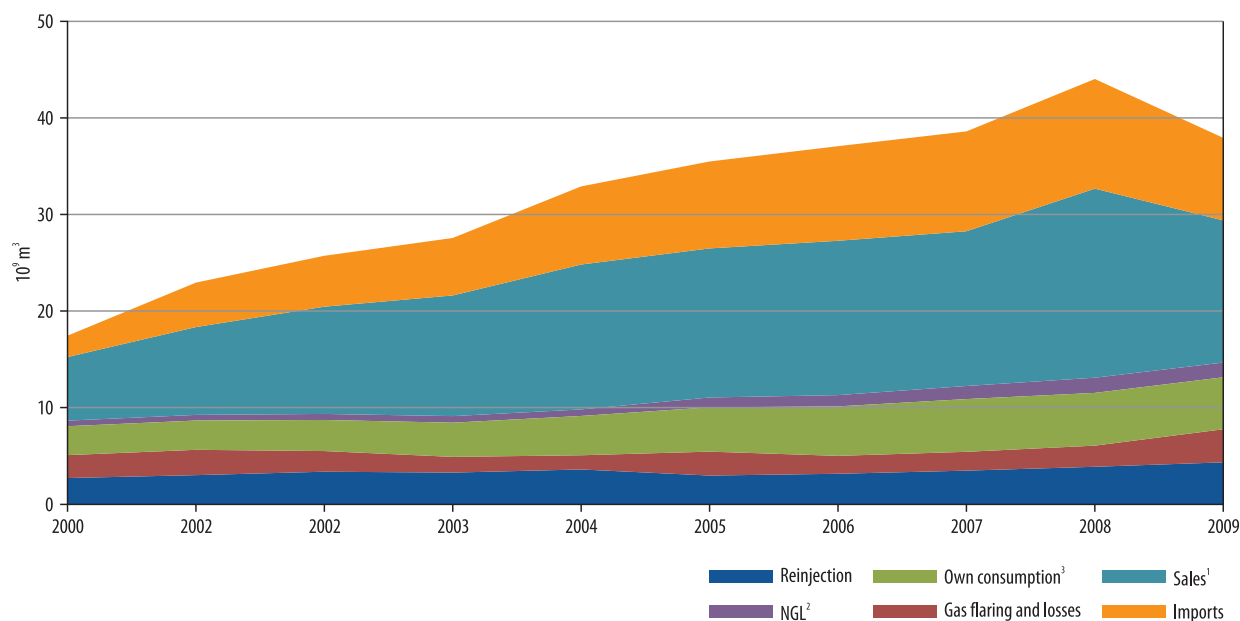
Source: Petrobras/Unidade de Negócios de Gás Natural (Table 1.15).
Note: Sales to nitrofertilizer plants (Fafen) owned by Petrobras included.

Table 1.18 – Brazilian natural gas balance – 2000-2009

Specification	Brazilian natural gas balance (10 ³ m ³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Imports	2,211	4,603	5,269	5,947	8,086	8,998	9,789	10,333	11,313	8,543	-24
Production	13,283	13,999	15,525	15,792	16,971	17,699	17,706	18,152	21,593	21,142	-2
Reinjection	2,729	3,027	3,383	3,291	3,616	2,986	3,170	3,494	3,894	4,351	12
Gas flaring and losses	2,371	2,621	2,136	1,626	1,469	2,474	1,852	1,947	2,187	3,424	57
Own consumption	2,990	3,032	3,219	3,539	4,019	4,324	4,929	6,167	5,496	5,380	-2
E&P ¹	1,738	1,734	1,876	2,048	2,215	2,473	2,805	2,879	2,892	3,084	7
Refining, NGPPs and transfers ²	1,252	1,297	1,343	1,491	1,804	1,851	2,124	3,288	2,604	2,296	-12
NGL ³	579	584	622	681	675	1,022	1,166	1,254	1,274	1,525	20
Sales ⁴	6,583	9,088	11,100	12,488	14,997	15,426	16,085	16,317	19,720	14,710	-25
Adjustments	267	243	334	114	281	465	293	-696	335	294	-12

Sources: ANP/SCM, as per Ordinance ANP No. 43/1998, for data on imports; ANP/SDP, as per Decree No. 2.705/1998, for data on production, reinjection, gas flaring and losses; Petrobras/Unidade de Negócios de Gás Natural, for data on own consumption, NGL and sales.

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

Figure 1.11 – Brazilian natural gas balance – 2000-2009

Sources: ANP/SDP; ANP/SCM; Petrobras/Unidade de Negócios de Gás Natural (Table 1.15).

¹Sales to nitrofertilizer plants (Fafen) owned by Petrobras included. ²Volume in gaseous state. ³Refers to Petrobras' own consumption in natural gas production, refining, processing and transferring areas.

1.11 Foreign Trade

Table 1.19 – Oil imports, by region and country of origin – 2000-2009

Regions and countries of origin	Oil imports (10 ³ barrels)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	145,301	152,182	138,726	125,535	169,275	138,213	131,508	159,634	149,208	143,513	-3.82
Not specified	-	-	-	-	-	-	-	-	572	-	-
North America	0	2,076	1,863	-	0	5,130	3,445	7,998	654	896	37.03
United States of America	0	2,076	1,863	-	0	5,130	3,445	7,998	654	896	37.03
Central and South America	59,139	34,740	19,671	8,476	8,636	6,423	3,510	2,429	3,537	3,670	3.76
Argentina	34,452	20,335	12,813	4,939	2,821	1,922	230	226	-	3,459	..
Barbados	-	-	-	-	604	-	-	-	-	-	-
Bermuda	-	-	-	-	-	-	954	238	1,022	-	-
Bolivia	502	2,798	2,272	3,089	2,768	2,907	2,094	781	832	-	-
Colombia	7,860	723	-	-	558	-	109	1,184	1,684	-	-
Ecuador	-	-	-	-	1,696	1,595	123	-	-	-	-
Cayman Islands	-	56	-	252	-	-	-	-	-	-	-
Venezuela	16,325	10,828	4,587	197	190	-	-	-	-	211	..
Europe and Former Soviet Union	-	2,042	5,890	6,296	-	0	994	5,157	1,402	166	-88.16
Germany	-	703	1,031	-	-	-	-	411	-	-	-
Azerbaijan	-	-	-	-	-	-	994	4,152	-	-	-
Kazakhstan	-	-	917	-	-	-	-	-	-	-	-
Italy	-	-	-	2,059	-	-	-	-	-	-	-
France	-	-	-	-	-	0	-	-	-	-	-
Norway	-	-	-	1,425	-	-	-	-	-	-	-
Portugal	-	-	-	-	-	-	-	-	872	-	-
United Kingdom ¹	-	-	1,937	2,812	-	-	-	-	479	166	-65.33
Russia	-	-	1,035	-	-	-	-	-	-	-	-
Switzerland	-	1,339	970	-	-	-	-	595	52	-	-
Middle East	31,647	27,666	38,694	36,250	37,830	35,248	32,669	26,612	35,103	37,223	6.04
Saudi Arabia	20,696	24,921	24,097	26,162	24,192	24,641	22,906	22,531	22,893	25,095	9.62
United Arab Emirates	1,200	-	-	-	-	-	-	-	-	-	-
Yemen	1,266	1,304	-	-	-	-	-	-	-	-	-
Iran	-	-	233	251	-	-	-	-	-	-	-
Iraq	8,486	1,441	14,364	9,838	13,639	10,607	9,764	4,082	12,211	12,128	-0.68
Africa	53,936	85,658	72,608	73,634	122,809	91,412	90,890	117,438	107,939	99,560	-7.76
Angola	-	5,988	-	-	-	-	6,814	12,220	18,798	1,937	-89.69
Algeria	33,315	29,349	30,621	25,886	38,466	38,603	21,830	20,626	13,379	11,473	-14.25
Congo (Democratic Republic)	-	-	-	-	-	-	3,835	2,503	-	-	-
Congo (Brazzaville)	1,875	2,860	1,494	1,790	-	956	1,825	1,830	-	-	-
Egypt	-	-	-	-	-	-	-	-	-	-	-
Gabon	-	2,247	1,960	-	-	-	-	-	-	-	-
Ghana	-	-	879	-	-	-	-	-	-	-	-
Equatorial Guinea	-	-	-	-	284	4,362	1,390	2,462	3,617	3,699	2.27
Libya	-	-	-	-	-	-	2,621	11,783	11,955	12,326	3.10
Nigeria	18,746	45,215	37,654	45,958	84,059	47,491	52,575	66,014	60,191	70,125	16.50
Asia-Pacific	578	-	-	879	-	-	-	-	-	1,999	-
Australia	578	-	-	879	-	-	-	-	-	1,999	-

Source: MDIC/Secex.

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

¹For year 2002. Virgin Islands included (382 thousand barrels).

Table 1.20 – Oil exports, by region and country of destination – 2000-2009

Region and country of destination	Oil exports (10 ³ barrels)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	6,819	40,434	85,761	88,246	84,252	100,190	134,336	153,813	158,110	191,859	21.34
North America	1,535	1,306	9,168	13,168	10,866	15,928	38,674	54,414	49,617	49,811	0.39
United States of America	1,535	1,306	9,168	13,168	10,866	15,928	38,674	54,414	49,617	49,811	0.39
Central and South America	2,943	20,621	23,875	28,276	39,394	47,254	47,590	48,806	64,697	72,000	11.29
Argentina	417	4,948	1,059	0	-	-	-	-	18	0	-
Netherlands Antilles	522	999	-	-	-	-	-	-	-	-	-
Aruba	-	-	-	1,023	5,375	8,125	3,605	1,013	-	1,366	-
Bahamas	-	-	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	10,421	-39.59
Colombia	-	-	-	-	891	-	366	-	-	-	-
Cuba	0	-	-	-	-	-	-	-	-	-	-
Peru	-	-	-	891	883	2,722	6,217	5,038	3,751	4,512	20.28
Puerto Rico	-	-	-	-	886	564	-	-	-	-	-
Santa Lucia	2,004	10,122	12,506	-	-	-	-	15,955	41,711	55,242	32.44
Trinidad and Tobago	-	-	2,057	3,524	9,056	8,640	3,831	3,329	1,608	459	-71.46
Uruguay	-	-	-	-	926	-	-	-	-	-	-
Cayman Islands	-	-	-	-	-	-	-	-	357	-	-
Europe	731	9,406	19,930	22,539	19,323	18,063	21,734	32,704	22,513	28,102	24.83
Germany	-	-	-	-	-	0	-	3,392	2,091	1,982	-5.19
Spain ¹	209	210	542	1,942	1,010	-	992	1,339	3,620	5,289	46.12
France	521	4,219	2,687	4,181	4,719	2,369	3,032	3,644	1,906	210	-88.98
Netherlands	-	332	9,044	4,312	2,110	6,607	3,093	10,586	6,567	5,573	-15.13
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	7,829	12.09
United Kingdom ²	-	1,363	896	5,845	2,888	690	2,183	2,442	1,345	7,218	436.75
Middle East	-	6,493	15,608	5,698	3,114	-	-	-	-	-	-
United Arab Emirates	-	6,493	15,608	5,698	3,114	-	-	-	-	-	-
Africa	-	-	328	-	-	-	-	-	-	-	-
Ivory Coast	-	-	328	-	-	-	-	-	-	-	-
Asia-Pacific	1,610	2,608	16,851	18,565	11,555	18,945	26,338	17,889	21,283	41,946	97.08
China	1,610	1,609	-	868	6,577	13,016	16,333	15,295	20,302	26,902	32.51
North Korea	-	998	-	-	988	-	-	-	0	-	-
South Korea	-	-	-	5,886	3,990	3,887	5,011	2,593	-	1,003	-
India	-	-	16,851	11,811	0	2,042	4,993	-	982	14,041	1,330.29
Singapore	-	-	-	-	-	0	-	-	-	-	-

Source: MDIC/Secex.

¹For years 2002 and 2003, Canary Islands included. ²Virgin Islands included.

Table 1.21 – Imports of oil products, by region and country of origin – 2009

Region and country of origin	Oil products imports (10 ³ m ³)							
	Total	Naphtha	Diesel Oil	Coke	LPG ¹	Lubricating oil	Solvent	Others ²
Total	15,936.7	4,119.6	3,515.0	3,286.4	2,556.7	459.3	617.5	1,382.2
North America	3,655.7	95.3	887.4	2,049.6	250.0	188.9	59.0	125.4
Central and South America	3,556.1	48.3	887.4	2,049.6	250.0	186.2	57.4	77.1
Others ³	99.6	47.1	-	-	-	2.7	1.5	48.3
Central and South America	5,747.5	2,481.2	59.5	1,202.6	1,143.2	53.6	426.2	381.4
Argentina	3,288.7	1,856.3	-	90.6	1,009.2	19.8	306.7	6.1
Aruba	419.3	-	24.2	26.5	-	-	-	368.5
Uruguay	44.2	10.7	-	-	-	0.0	33.5	0.0
Venezuela	1,573.2	563.9	35.3	849.4	29.1	8.9	85.9	0.7
Others ⁴	422.2	50.3	-	236.1	104.9	24.9	-	6.0
Europe and Former Soviet Union	1,299.0	141.2	109.6	34.2	335.7	155.1	88.5	434.8
Spain	125.1	-	-	-	0.0	10.3	87.0	27.7
Netherlands	143.2	-	-	-	0.0	4.6	1.0	137.7
Italy	112.4	4.3	-	30.6	0.0	76.7	0.1	0.8
Russia	137.4	136.9	-	-	-	0.6	-	0.0
Switzerland	106.6	-	30.3	0.0	76.0	0.1	0.0	0.2
Others ⁵	674.3	-	79.3	3.6	259.7	62.8	0.5	268.4
Middle East	331.9	-	-	-	169.6	33.1	0.0	129.1
Saudi Arabia	169.6	-	-	-	169.6	-	-	-
United Arab Emirates	129.0	-	-	-	-	-	-	129.0
Israel	30.4	-	-	-	-	30.3	0.0	0.1
Others ⁶	2.8	-	-	-	-	2.8	-	-
Africa	2,061.7	1,355.7	-	-	657.1	0.5	43.9	4.5
Algeria	1,630.4	1,192.9	-	-	393.6	-	43.9	-
Libya	79.0	79.0	-	-	-	-	-	-
Nigeria	83.8	83.8	-	-	-	-	-	-
Others ⁷	268.6	-	-	-	263.6	0.5	-	4.5
Asia-Pacific	2,840.9	46.2	2,458.5	-	1.0	28.1	0.0	307.1
India	1,114.7	46.2	1,102.5	-	-	12.2	-	0.0
Others ⁸	1,680.0	-	1,356.0	-	1.0	15.9	0.0	307.1

Source: MDIC/Secex.

¹Propane and butane included. ²Asphalt, gasoline A, aviation gasoline, fuel oil, paraffin, jet fuel and other non-energy products included. ³Canada and Mexico included. ⁴Netherlands, Antilles, Barbados, Bermuda, Bolivia, Chile, Colombia, United States, Virgin Islands, Panama and Peru included. ⁵Germany, Austria, Belarus, Belgium, Denmark, Spain, Finland, France, Grecia, Ireland, Latvia, Liechtenstein, Norway, Poland, Portugal, Czech Republic, United Kingdom, Sweden and Turkey included. ⁶Bahrein, Iraq, Catar and Syria included. ⁷South Africa, Angola, Ecuatorial Guinea, Egypt, Morocco and Zambia included. ⁸Australia, China, Singapore, Hong Kong, Indonesia, Japan, Malaysia, South Korea, North Korea, Tailand and Taiwan included.

Table 1.22 – Imports of energy and non-energy oil products – 2000-2009

Oil products	Imports (10 ³ m ³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	18,256.5	18,276.4	16,828.7	13,139.4	11,744.4	10,921.6	13,501.3	15,959.5	17,913.7	15,936.7	-11.04
Energy	11,948.5	11,632.0	10,944.2	6,488.8	4,870.8	3,767.4	6,111.3	7,912.1	9,713.5	7,354.7	-24.28
Gasoline A	60.7	0.0	164.1	181.7	55.4	71.2	28.2	10.0	0.2	0.0	-85.36
Aviation Gasoline	-	-	-	3.9	1.7	-	-	-	-	3.1	-
LPG ¹	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	2,556.7	16.81
Fuel Oil	87.4	13.3	59.2	93.0	130.4	52.9	251.7	116.9	198.3	10.2	-94.84
Diesel	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	3,515.0	-39.70
Jet fuel	902.8	1,182.3	995.6	352.0	108.5	324.5	700.8	891.2	1,496.9	1,269.6	-15.18
Non-energy	6,308.0	6,644.4	5,884.5	6,650.6	6,873.6	7,154.2	7,390.0	8,047.4	8,200.2	8,582.1	4.66
Asphalt	1.4	0.9	0.9	1.2	4.4	6.5	8.0	7.8	4.8	29.5	508.68
Coke	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	3,286.4	-7.06
Naphtha	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	4,119.6	14.63
Lubricating oil	151.9	213.8	245.2	225.0	270.5	340.0	289.9	435.5	565.3	459.3	-18.75
Paraffin	9.9	35.5	19.9	18.8	9.3	5.3	12.0	21.4	23.3	35.0	50.18
Solvent	138.8	255.5	187.5	712.9	878.1	216.4	208.8	256.8	451.2	617.5	36.85
Others ²	3.7	5.1	5.4	7.8	10.3	26.6	15.6	17.7	25.9	34.8	34.39

Source: MDIC/Secex.

¹Propane and butane included. ²Non-energy oil products of lesser importance included.

Table 1.23 – Exports of energy and non-energy oil products, by region and country of destination – 2009

Region and country of destination	Exports of energy and non-energy oil products (10 ³ m ³)										
	Total	Fuel oil	Marine fuels (bunkers) ¹	Gasoline A	Solvent	Coke	Lubricating oil	Fuel and lubricating oil for aircrafts ²	Diesel	LPG	Others ³
Total	15,161.9	4,319.6	4,163.5	2,513.2	459.9	247.7	50.8	2,012.3	1,221.3	20.1	153.5
Unknown destination	6,114.5	-	4,162.7	-	-	-	-	1,951.8	-	-	-
North America	951.0	225.0	0.2	121.0	381.2	92.1	4.6	32.7	40.1	0.0	54.1
Canada	48.0	-	-	-	-	47.9	-	0.0	-	-	0.1
United States of America	902.8	225.0	0.2	121.0	381.2	44.2	4.6	32.7	40.1	0.0	53.8
Mexico	0.2	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.2
Central and South America	4,703.4	1,794.3	0.2	1,680.3	71.0	1.5	33.9	5.8	1,015.9	20.1	80.4
Netherlands Antilles	2,677.9	1,155.4	-	1,519.1	3.5	-	0.0	-	-	-	-
Argentina	645.0	221.8	0.1	-	56.4	0.3	1.0	1.2	350.5	-	13.5
Bolivia	86.9	0.0	-	16.8	0.2	0.1	4.3	0.0	42.3	-	23.2
Chile	10.5	-	-	-	8.4	0.1	1.8	0.1	-	-	0.1
Colombia	3.1	-	-	0.8	0.0	0.1	0.6	0.0	-	-	1.6
Costa Rica	0.2	-	-	-	0.0	-	0.0	-	-	-	0.2
Ecuador	0.4	-	-	-	0.0	-	0.3	-	-	-	0.1
Guatemala	0.3	-	-	-	-	-	0.0	-	-	-	0.3
Paraguay	347.1	2.3	-	6.3	0.8	-	15.5	0.9	286.4	0.0	34.7
Peru	32.1	-	-	31.4	0.0	0.0	0.2	0.0	-	-	0.5
Puerto Rico	5.7	-	-	5.7	-	-	0.0	-	-	-	-
Dominican Republic	1.2	-	-	-	0.0	-	0.0	-	-	-	1.2
Uruguay	558.6	232.3	0.1	-	1.7	0.9	8.5	0.4	291.6	20.1	3.1
Venezuela	100.3	-	-	100.3	0.0	-	0.0	0.0	-	-	0.1
Others ⁴	234.3	182.5	0.0	-	0.0	-	1.7	3.2	45.1	-	1.9
Europe	1,006.8	839.7	0.4	28.8	6.6	27.0	0.5	21.7	80.6	-	1.5
Germany	0.1	-	0.0	-	-	-	0.0	0.1	-	-	0.1
Belgium	1.7	-	-	-	1.0	0.5	0.0	0.0	-	-	0.2
Spain	0.3	-	-	-	0.0	0.0	0.0	0.1	-	-	0.2
France	45.6	33.3	0.0	0.0	-	-	0.0	12.2	-	-	0.0
Netherlands	855.9	769.6	-	-	5.7	-	0.0	-	80.6	-	0.1
Italy	62.3	36.8	0.0	-	-	25.4	-	0.0	-	-	0.0
Portugal	9.6	-	-	-	0.0	-	0.0	9.2	-	-	0.3
United Kingdom	30.0	-	0.0	28.8	-	1.0	0.1	0.0	-	-	0.1
Others ⁵	1.3	-	0.3	-	0.0	0.0	0.4	0.0	-	-	0.5
Middle East	153.3	-	0.0	47.8	0.0	70.0	0.2	0.2	35.0	-	0.1
Bahrain	49.9	-	-	-	-	49.9	-	-	-	-	-
United Arab Emirates	67.9	-	0.0	47.8	-	20.0	-	0.1	-	-	0.0
Others ⁶	35.5	-	-	-	0.0	-	0.2	0.1	35.0	-	0.1
Africa	744.3	-	-	635.3	0.1	30.7	11.3	-	49.7	-	17.2
South Africa	30.8	-	-	-	-	30.7	0.0	-	-	-	0.1
Angola	41.8	-	-	40.7	0.0	-	0.5	-	-	-	0.6
Gabon	2.7	-	-	-	-	-	-	-	-	-	2.7
Nigeria	558.6	-	-	499.5	-	-	9.3	-	49.7	-	0.1
Others ⁷	110.3	-	-	95.2	0.1	-	1.4	-	-	-	13.7
Asia-Pacific	1,488.6	1,460.6	0.0	0.0	0.9	26.5	0.4	0.1	0.0	-	0.2
China	26.3	-	-	-	0.9	25.2	-	-	-	-	0.1
Singapore	1,460.6	1,460.6	-	-	-	-	0.0	-	-	-	0.0
India	0.0	-	-	-	-	-	0.0	-	-	-	0.0
Others ⁸	1.8	-	0.0	0.0	0.0	1.2	0.4	0.1	0.0	-	0.1

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

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

Table 1.24 – Exports of energy and non-energy oil products – 2000-2009

Oil products	Exports (10 ³ m ³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	9,771.0	15,602.7	14,893.2	14,660.4	15,299.2	15,640.8	16,777.3	17,647.9	15,986.4	15,161.9	-5.16
Energy	8,884.1	14,940.4	14,011.8	13,765.4	14,467.0	14,407.4	15,807.8	16,550.4	14,906.4	14,279.4	-4.21
Gasoline A	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	2,513.2	-3.00
Aviation gasoline	21.4	20.8	17.8	13.9	12.5	18.7	4.4	8.1	8.0	6.0	-24.72
LPG ¹	9.9	8.1	175.1	130.9	63.7	152.2	34.1	23.2	7.5	20.1	169.94
Fuel oil	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	4,319.6	-16.28
Bunker ²	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	4,163.5	-7.93
Diesel	60.6	73.5	16.3	122.2	64.5	301.0	601.8	1,046.1	652.3	1,221.3	87.23
Jet fuel	3.4	24.1	4.2	7.0	16.1	0.4	2.5	1.0	26.5	23.4	-11.48
Aircraft fuels ³	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	2,012.3	3.76
Non-energy	886.9	662.3	881.5	895.0	832.2	1,233.4	969.5	1,097.5	1,080.0	882.4	-18.29
Asphalt	22.5	14.6	17.6	21.3	20.4	10.5	19.0	17.8	30.8	63.7	107.11
Naphtha	0.0	-	49.6	0.0	17.1	69.7	31.9	26.5	103.4	50.4	-51.25
Lubricating oil and lubricating grease	84.9	58.4	85.7	105.6	71.0	72.2	110.1	71.7	40.9	50.8	24.24
Paraffin	39.4	8.2	25.0	21.6	6.7	9.1	14.6	8.6	8.7	7.9	-8.43
Solvent	534.6	419.1	418.8	473.7	443.1	618.5	555.6	649.7	574.2	459.9	-19.91
Others ⁴	205.5	162.0	284.8	272.7	273.9	453.4	238.3	323.3	322.0	249.7	-22.47

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

¹Propane and butane included. ²Fuel oil and diesel oil sales for ships in transit included. ³Jet fuel sales for aircrafts in transit included. ⁴Coke and other non-energy products of lesser importance included.

Table 1.25 – Brazilian foreign dependence on oil and oil products – 2000-2009

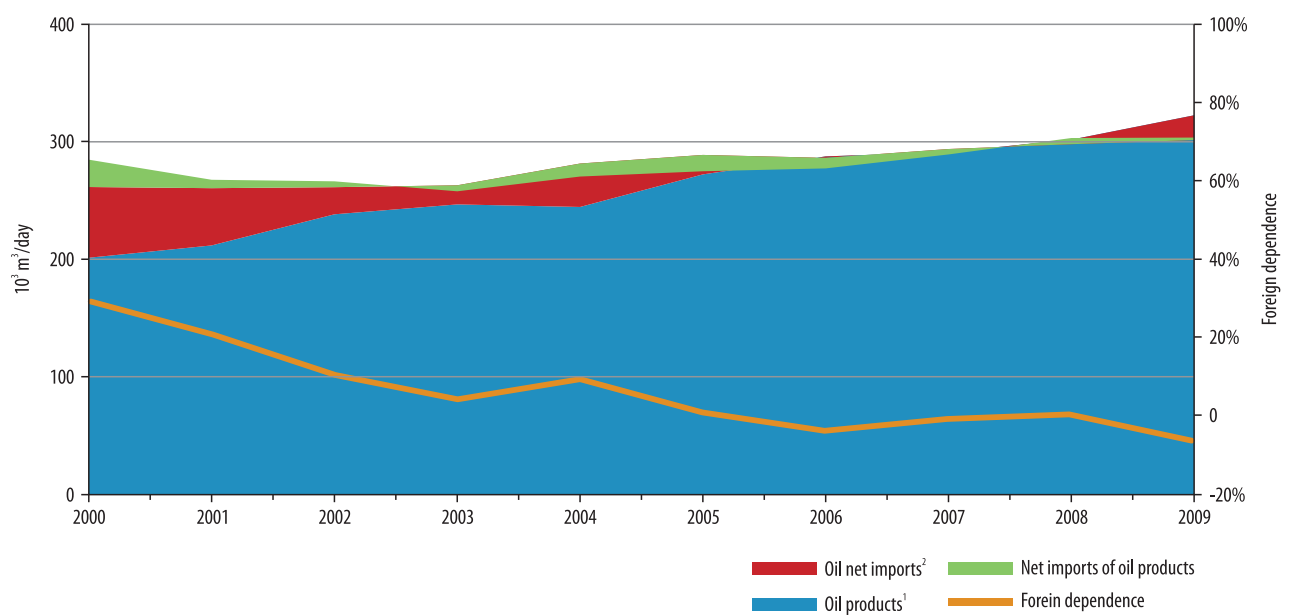
Specification	Brazilian foreign dependence on oil and oil products (10 ³ m ³ /day)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Oil production (a) ¹	201.4	211.9	238.4	246.8	244.6	272.3	287.6	291.4	301.9	322.6	6.87
Oil net imports (b) ²	60.2	48.7	23.1	16.2	36.9	16.6	-1.2	2.5	-3.9	-21.1	-
Net imports of oil products (c)	23.2	7.2	5.0	-5.1	-11.1	-13.9	-9.0	-4.6	5.3	2.1	-
Apparent consumption (d)=(a)+(b)+(c)	284.8	267.8	266.4	257.9	270.5	275.0	277.4	289.3	303.3	303.7	0.13
Foreign dependence (e)=(d)-(a)	83.4	55.8	28.0	11.1	25.9	2.7	-10.2	-2.1	1.4	-18.9	-
Foreign dependence (e)/(d) %	29.3	20.9	10.5	4.3	9.6	1.0	-3.7	-0.7	0.5	-6.2	-

Sources: ANP/SDP, as per Ordinance No. 2.705/1998, for oil production data; MDIC/Secex, for imports and exports data, except for bunker.

Note: Consolidated data by ANP/SPP.

¹Includes condensate and NGL. ²Includes condensate.

Figure 1.12 – Natural gas domestic sales, at production level – 2000-2009



Sources: ANP/SDP; MDIC/Secex; Petrobras/Abast
Note: All calculations made by ANP/SPP.
¹Condensate and NGL included. ²Condensate included.

Table 1.26 – Natural gas imports, by country of origin – 2000-2009

Countries	Natural gas imports (10 ⁶ m ³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	2,211	4,603	5,269	5,947	8,086	8,998	9,789	10,334	11,348	8,543	-24.72
Argentina	106	753	492	350	451	349	475	166	135	-	-
Bolivia	2,105	3,850	4,777	5,597	7,635	8,648	9,314	10,168	11,178	8,108	-27.46
Trinidad and Tobago ¹	-	-	-	-	-	-	-	-	35	360	937.57
Nigeria ¹	-	-	-	-	-	-	-	-	-	75	-

Source: ANP/SCM, as per Ordinance ANP No. 43/1998.
Note: Brazilian natural gas imports started in July, 1999.
¹Refers to the imported NGL considering its volume in gaseous state.

SECTION 2

Biofuels





2.1 Ethanol

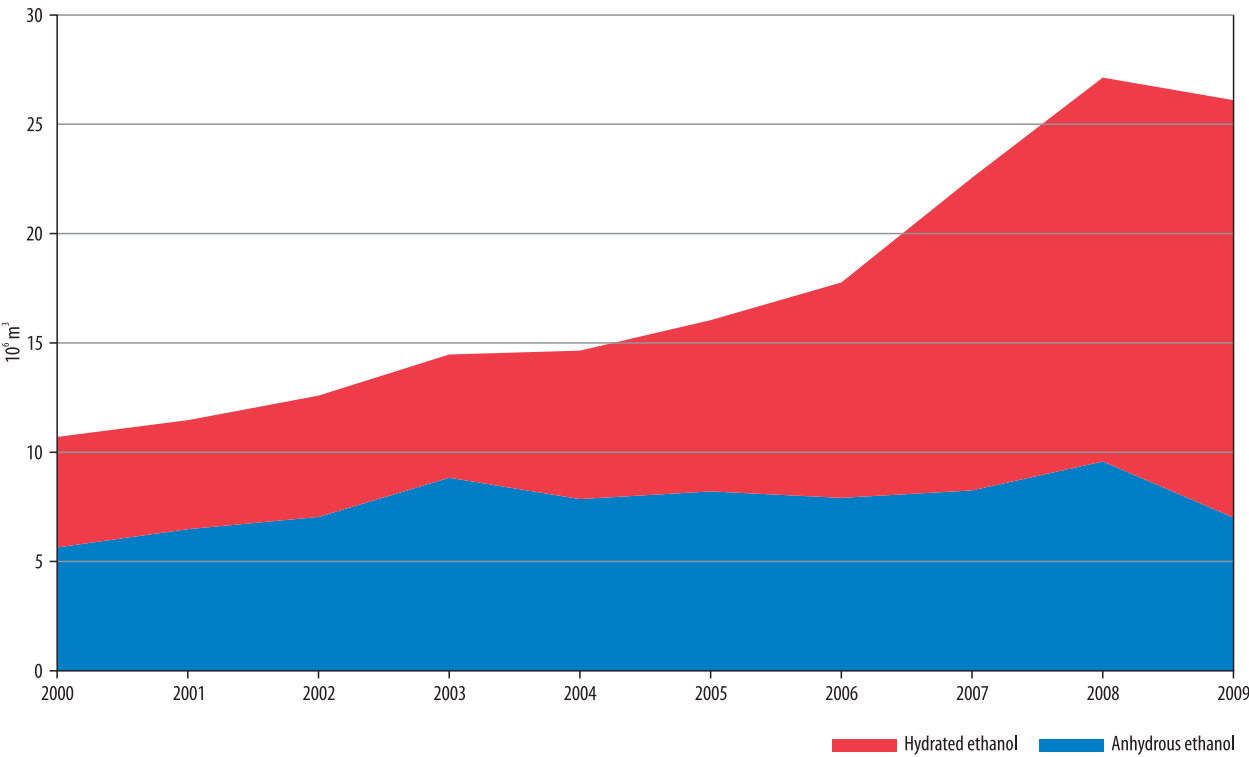
Table 2.1 – Production of anhydrous and hydrated ethanol, by Brazilian Region and State – 2000-2009

Brazilian Regions and States	Production of anhydrous and hydrated ethanol (10³ m³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Brazil	10,700.25	11,465.97	12,588.62	14,469.95	14,647.25	16,039.89	17,764.26	22,556.90	27,133.19	26,103.09	-3.80
North	35.81	28.79	30.32	39.39	47.53	47.51	75.88	47.66	55.67	51.73	-7.08
Rorônia	-	-	-	-	-	-	-	-	-	8.55	-
Amazonas	3.71	2.81	3.89	4.38	4.67	6.01	5.65	8.26	7.96	4.74	-40.49
Pará	32.11	25.98	26.43	35.01	42.86	37.28	58.66	39.39	44.91	36.02	-19.78
Tocantins	-	-	-	-	-	4.22	11.57	-	2.80	2.42	-
Northeast	1,528.52	1,401.64	1,518.28	1,505.23	1,675.49	1,695.56	1,572.56	1,901.72	2,371.62	2,210.50	-6.79
Maranhão	49.65	75.10	83.58	89.87	95.91	48.92	113.56	192.30	181.56	168.50	-7.19
Piauí	16.62	18.68	22.83	22.37	19.45	19.93	65.66	36.17	44.55	40.95	-8.08
Ceará	0.78	1.19	0.98	0.32	0.15	1.02	1.00	0.57	7.52	10.76	43.10
Rio Grande do Norte	74.03	47.64	133.34	85.47	64.21	99.35	95.56	55.60	87.40	117.30	34.20
Pernambuco	200.75	237.94	219.71	267.67	243.80	353.50	255.94	363.50	401.48	395.30	-1.54
Pernambuco	332.86	284.87	300.27	339.20	397.02	380.18	311.95	395.39	558.92	469.03	-16.08
Alagoas	733.00	629.31	639.22	589.83	729.65	620.27	572.32	681.45	892.64	790.99	-11.39
Sergipe	55.53	52.36	59.18	61.49	62.47	67.64	62.79	35.49	57.56	101.12	75.66
Bahia	65.30	54.56	59.18	49.00	62.83	104.75	93.77	141.25	139.98	116.56	-16.73
Southeast	7,202.72	7,753.90	8,551.82	9,786.64	9,948.40	11,154.24	12,478.67	15,782.23	19,212.33	17,676.39	-7.99
Minas Gerais	488.27	522.15	558.41	785.23	758.25	918.80	1,270.58	1,790.91	2,200.92	2,284.23	3.79
Espírito Santo	150.90	131.03	152.30	151.77	167.83	217.39	159.46	281.79	250.32	238.35	-4.78
Rio de Janeiro	90.97	62.95	106.59	104.74	161.25	164.29	90.24	120.27	125.98	112.82	-10.45
São Paulo	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	15,041.00	-9.58
South	829.07	937.42	974.95	1,209.45	1,178.31	995.67	1,308.24	1,923.23	1,906.00	1,901.26	-0.25
Paraná	826.07	932.12	968.54	1,203.40	1,173.49	992.33	1,302.74	1,916.23	1,899.68	1,898.80	-0.05
Rio Grande do Sul	3.00	5.31	6.41	6.05	4.82	3.34	5.50	7.00	6.32	2.46	-61.06
Central-West	1,104.12	1,344.21	1,513.27	1,929.26	1,797.52	2,146.91	2,328.92	2,902.06	3,587.57	4,263.22	18.83
Mato Grosso do Sul	320.81	384.65	422.64	472.11	413.61	619.92	644.55	873.64	945.27	1,331.48	40.86
Mato Grosso	466.38	580.13	657.82	795.38	792.63	723.78	811.80	863.59	898.52	809.92	-9.86
Goiás	316.94	379.43	432.80	661.77	591.28	803.21	872.57	1,164.83	1,743.78	2,121.83	21.68

Source: MAPA/SPA/E/DAA.

Note: Only states with anhydrous and/or hydrated ethanol production within the past ten years are listed.

Figure 2.1 – Production of anhydrous and hydrated ethanol – 2000-2009



Source: MAPA/SPA/DAA (Table 2.1).

Table 2.2 – Production of hydrated ethanol, by Brazilian Region and State – 2000-2009

Brazilian Regions and States	Production of hydrated ethanol (10 ³ m ³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Brazil	5,056.06	4,985.14	5,548.63	5,638.29	6,788.47	7,832.15	9,851.38	14,302.66	17,556.28	19,089.27	8.73
North	24.59	12.81	13.64	8.69	9.24	13.61	19.09	17.91	34.90	47.62	36.45
Rondonia	-	-	-	-	-	-	-	-	-	8.55	..
Amazonas	3.71	1.85	3.89	4.38	4.67	6.01	5.65	8.26	7.96	4.74	-40.49
Pará	20.89	10.96	9.75	4.32	4.57	7.49	11.32	9.64	25.26	31.91	26.35
Tocantins	-	-	-	-	-	0.11	2.13	-	1.68	2.42	44.15
Northeast	677.84	640.04	763.15	737.61	861.09	775.80	711.40	987.60	1,211.57	1,284.18	5.99
Maranhão	10.73	9.38	6.22	5.61	8.72	11.08	20.26	50.15	60.44	58.75	-2.80
Piauí	8.20	13.17	11.60	4.35	4.33	5.83	13.95	9.53	11.42	5.15	-54.93
Ceará	0.78	1.19	0.98	0.32	0.15	1.02	1.00	0.57	6.90	10.76	55.87
Rio Grande do Norte	42.43	29.82	66.25	31.71	37.44	39.14	28.60	35.44	46.77	82.36	76.10
Paraíba	81.78	136.59	135.88	131.75	158.66	171.71	147.47	212.88	213.15	237.95	11.64
Pernambuco	187.89	123.33	152.07	165.27	151.66	128.22	112.28	212.07	297.94	309.47	3.87
Alagoas	282.28	278.63	344.89	351.10	447.87	361.04	328.90	399.25	494.34	421.62	-14.71
Sergipe	36.91	25.27	28.86	29.47	33.78	39.05	30.48	12.46	29.09	85.39	193.55
Bahia	26.85	22.68	16.40	18.04	18.49	18.72	28.45	55.26	51.53	72.74	41.16
Southeast	3,185.66	3,102.00	3,441.03	3,320.67	4,279.67	5,115.17	6,877.56	9,875.79	12,347.86	12,915.91	4.60
Minas Gerais	208.35	193.43	261.14	400.27	429.32	525.88	691.18	1,167.92	1,634.03	1,793.39	9.75
Espírito Santo	49.21	57.02	59.79	48.55	46.67	46.27	47.48	88.72	125.43	130.73	4.22
Rio de Janeiro	37.97	38.91	62.19	65.17	101.65	84.08	59.52	93.32	89.20	102.86	15.31
São Paulo	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	10,888.94	3.71
South	614.29	581.65	578.33	729.49	760.64	656.29	864.81	1,563.79	1,471.32	1,528.92	3.91
Paraná	611.29	576.34	571.92	723.44	755.82	652.95	859.31	1,556.79	1,465.00	1,526.46	4.20
Rio Grande do Sul	3.00	5.31	6.41	6.05	4.82	3.34	5.50	7.00	6.32	2.46	-61.06
Central-West	553.69	648.64	752.48	841.82	877.83	1,271.28	1,378.51	1,857.57	2,490.64	3,312.64	33.00
Mato Grosso do Sul	168.21	168.67	211.58	252.44	239.99	401.83	437.40	659.43	709.03	1,088.88	53.57
Mato Grosso	197.76	304.12	334.30	313.08	364.17	436.01	485.88	486.18	546.22	538.35	-1.44
Goiás	187.71	175.85	206.60	276.31	273.67	433.43	455.24	711.96	1,235.39	1,685.42	36.43

Source: MAPA/SPA/E/DAA.

Note: Only states with hydrated ethanol production within the past ten years are listed.

Table 2.3 – Ethanol exports, by region and by country of destination – 2000-2009

Region and country of destination	Ethanol exports (m³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	229,553	349,167	797,124	765,025	2,432,618	2,592,293	3,428,863	3,532,668	5,123,820	3,323,467	-35.14
North America	35,185	35,576	89,568	85,893	545,613	387,652	1,836,156	972,212	1,776,481	358,984	-79.79
Canada	-	-	-	-	26,334	26,839	18,855	4,250	37,467	-	-
United States of America	33,291	19,866	35,054	44,958	428,863	260,715	1,767,060	918,752	1,709,084	285,244	-83.31
Mexico	1,894	15,709	54,515	40,935	90,417	100,098	50,241	49,210	29,930	73,740	146.38
Central and South America	40,682	95,489	163,962	172,779	305,537	552,374	609,211	898,737	1,160,263	783,144	-32.50
Chile	-	30	-	5	1,131	1,287	1,324	2,006	2,843	1,677	-41.00
Colombia	-	-	10,102	1,555	-	-	10,320	5,390	8,187	2,420	-70.44
Costa Rica	15,152	10,638	29,607	32,491	117,893	126,693	91,265	170,367	109,504	100,276	-8.43
El Salvador	-	-	-	15,679	29,154	157,851	181,143	224,397	356,238	71,101	-80.04
Ecuador	-	-	-	-	-	-	1,646	7,072	3,965	-	-
Jamaica	25,419	69,155	118,695	104,077	135,759	133,288	131,543	308,968	436,503	437,657	0.26
Paraguay	-	-	1,024	79	977	-	-	-	5,068	7	-99.86
Puerto Rico	-	-	-	-	5,243	10,261	10,371	13,993	10,246	22,150	116.19
Trinidad and Tobago	-	-	-	14,965	7,155	36,116	71,579	158,869	224,510	139,951	-37.66
Venezuela	-	4,520	51	117	2,903	49,478	104,605	-	-	-	-
Others	111	11,146	4,483	3,810	5,323	37,400	5,415	7,675	3,199	7,905	147.07
Europe	52,149	38,629	126,997	213,938	434,673	569,937	600,167	1,007,913	1,498,807	938,360	-37.39
Germany	24	-	-	-	-	-	-	-	4,486	-	-
Belgium	-	2,595	2,529	4,818	3,625	1,400	-	1,611	6,277	5,016	-20.09
Spain	-	437	2,860	568	375	-	173	4,698	4,911	-	-
Finland	-	-	-	5,737	12,429	-	-	19,986	41,477	26,812	-35.36
France	-	0	26	-	7,106	-	8,900	5,064	10,213	-	-
Netherlands	37,053	25,980	60,416	85,680	168,573	259,403	346,615	808,557	1,332,756	678,466	-49.09
United Kingdom	-	1,689	72	4	-	13,662	27,008	47,784	81,972	161,637	97.19
Sweden	-	-	44,917	100,395	195,337	245,891	204,614	116,466	5,142	-	-
Switzerland	10,124	2,047	5,037	10,853	22,401	9,896	-	-	11,572	54,724	372.90
Turkey	4,948	4,144	5,087	5,701	23,181	29,313	12,856	3,747	-	-	-
Others	-	1,736	6,053	184	1,647	10,372	1	-	1	11,705	..
Middle East	-	-	-	-	-	-	48	43,849	5,191.3	29,527.0	468.78
United Arab Emirates	-	-	-	-	-	-	-	43,749	5,162	23,814	361.33
Others	-	-	-	-	-	-	48	100	29	5,713	..
Africa	3,311	46,440	82,383	81,652	124,766	131,723	55,531	172,578	137,676	180,723	31.27
South Africa	-	9,719	4,447	4,097	-	-	2,008	-	5,563	12,318	121.44
Angola	0	1	522	413	5,848	6,577	3,178	11,661	9,871	35,118	255.76
Gana	-	1,794	13,456	28,170	7,849	3,861	6,075	33,172	19,759	14,803	-25.08
Nigeria	3,310	34,926	58,425	48,248	109,096	118,441	42,680	122,879	97,888	115,766	18.26
Sierra Leone	-	-	1,133	328	803	1,566	648	2,355	2,313	1,659	-28.28
Others	-	-	4,401	397	1,170	1,278	942	2,511	2,281	1,059	-53.57
Asia-Pacific	98,226	133,033	334,213	210,763	1,022,029	950,607	327,750	437,379	545,403	1,032,729	89.35
Australia	-	-	161	-	-	-	-	-	6,374	8,040	26.13
China	-	-	-	-	-	-	-	-	4,050	-	-
Singapore	-	-	9,629	15,761	29,595	3,603	-	-	10,706	19,464	81.80
North Korea	-	4,316	5,385	23,295	-	-	-	4,790	1,755	11,181	537.15
South Korea	35,672	64,403	169,199	56,436	281,230	216,356	92,273	66,693	186,782	313,714	67.96
Philippines	5,035	-	5,477	-	2,021	4,499	-	1,564	4,522	32,799	625.25
India	-	-	9,412	23,991	441,050	410,757	10,074	-	66,510	367,570	452.65
Japan	57,520	64,314	120,359	91,281	225,437	315,392	225,403	364,003	263,473	279,961	6.26
Others	-	-	14,590	-	42,695	-	-	329	1,230	-	-100.00

Source: MDIC/Secex.

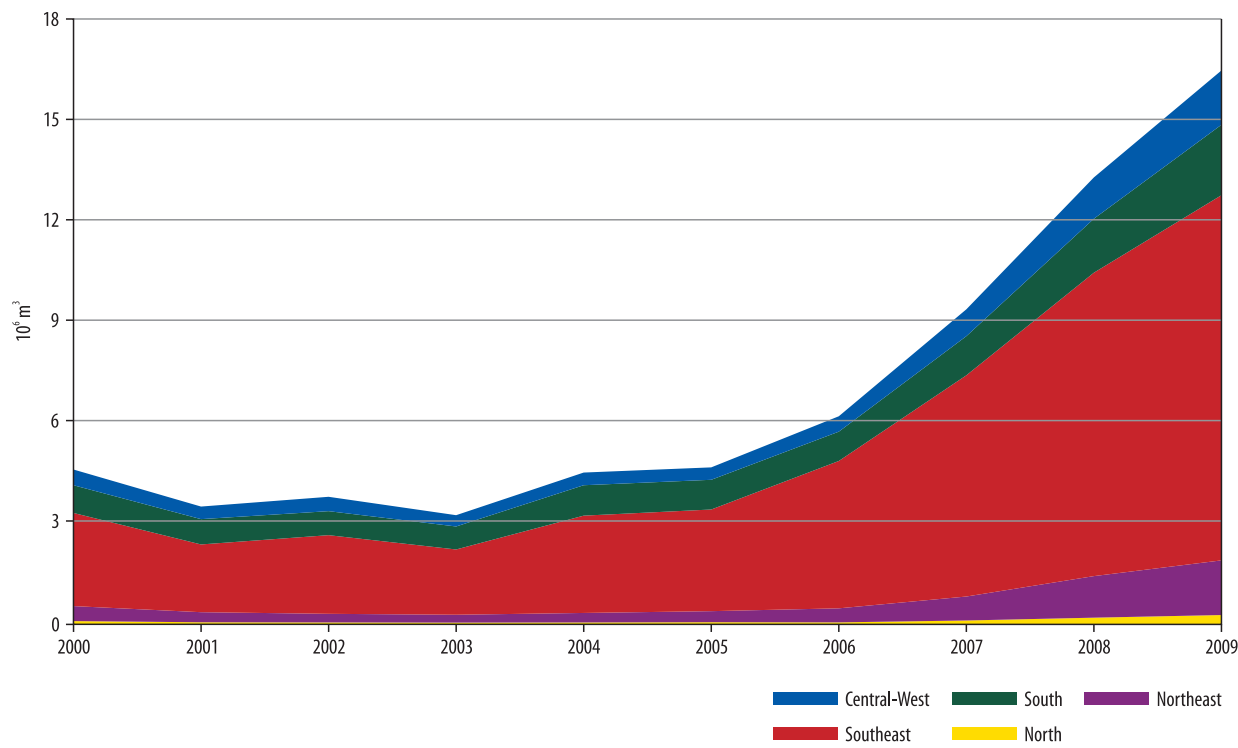
Table 2.4 – Hydrated ethanol sales, by Brazilian Region and State, at distribution level – 2000-2009

Brazilian regions and states	Hydrated ethanol sales (10 ³ m ³)										09/08 %
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Total	4,603.59	3,501.99	3,791.88	3,245.32	4,512.93	4,667.22	6,186.55	9,366.84	13,290.10	16,470.95	23.93
North	96.19	60.62	56.29	50.60	54.98	62.68	57.77	113.63	197.77	275.85	39.48
Rondônia	23.62	12.35	14.54	11.94	12.74	13.63	10.62	21.53	40.58	57.19	40.91
Acre	7.15	4.77	4.43	3.65	3.75	4.00	4.14	6.37	9.51	11.95	25.66
Amazonas	16.75	13.53	12.27	12.56	13.53	19.02	16.27	32.50	54.70	79.60	45.51
Roraima	1.63	1.37	1.00	0.57	0.58	0.74	1.30	2.26	2.87	2.91	1.47
Pará	30.04	14.82	9.70	8.83	10.51	10.81	10.37	17.75	31.55	46.19	46.42
Amapá	1.52	1.23	1.30	0.88	0.77	0.89	0.93	1.45	2.77	8.30	199.37
Tocantins	15.48	12.55	13.04	12.17	13.09	13.60	14.16	31.76	55.78	69.71	24.97
Northeast	445.71	300.23	255.50	233.85	282.56	328.33	417.41	712.96	1,235.70	1,625.37	31.53
Maranhão	16.75	11.43	9.53	8.60	8.26	11.27	16.59	49.10	107.36	142.65	32.87
Piauí	25.76	20.98	18.31	15.45	16.22	14.97	14.04	19.44	28.27	33.11	17.09
Ceará	71.63	51.31	44.26	34.24	35.62	40.50	66.10	107.88	152.94	174.59	14.16
Rio Grande do Norte	37.58	25.67	22.23	18.01	23.36	26.50	33.37	67.38	94.71	98.37	3.87
Paraíba	37.88	23.63	22.63	30.45	32.05	34.03	36.60	63.59	89.66	112.98	26.01
Pernambuco	99.71	57.64	51.14	43.30	69.22	93.53	107.51	163.31	280.71	365.49	30.20
Alagoas	26.19	18.91	19.04	20.05	23.52	26.90	34.90	51.46	83.10	104.51	25.76
Sergipe	28.69	21.13	18.01	13.88	14.76	13.52	12.77	16.85	29.43	52.50	78.35
Bahia	101.52	69.53	50.35	49.87	59.55	67.11	95.53	173.95	369.51	541.17	46.46
Southeast	2,769.65	2,014.07	2,339.58	1,941.27	2,893.98	3,023.31	4,381.77	6,578.10	9,022.76	10,860.08	20.36
Minas Gerais	551.09	391.67	408.53	374.26	420.90	391.48	371.41	602.74	957.20	1,204.43	25.83
Espírito Santo	64.93	42.98	41.87	36.54	36.72	50.55	42.43	70.83	137.25	172.83	25.93
Rio de Janeiro	232.19	155.57	157.57	98.18	109.82	180.53	224.25	359.40	677.06	872.81	28.91
São Paulo	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	8,610.00	18.74
South	824.39	752.73	713.56	683.83	904.65	883.41	872.40	1,163.95	1,605.38	2,094.71	30.48
Paraná	445.21	430.83	370.42	377.08	538.76	518.24	520.58	701.25	904.33	1,193.03	31.92
Santa Catarina	178.18	156.64	164.03	155.00	173.87	175.27	193.06	242.40	376.16	498.65	32.56
Rio Grande do Sul	200.99	165.26	179.12	151.75	192.01	189.90	158.76	220.30	324.89	403.03	24.05
Central-West	467.65	374.35	426.95	335.77	376.76	369.50	457.19	798.20	1,228.50	1,614.95	31.46
Mato Grosso do Sul	69.10	58.51	64.16	61.18	71.21	71.59	65.29	105.47	166.28	207.98	25.08
Mato Grosso	61.17	44.99	84.20	40.02	59.25	70.98	72.47	107.20	276.85	393.94	42.29
Goiás	190.43	153.04	171.19	145.39	170.10	149.38	238.58	435.31	610.59	773.68	26.71
Distrito Federal	146.95	117.81	107.40	89.17	76.20	77.56	80.86	150.22	174.78	239.35	36.95

Source: ANP/SAB. ANP/SAB. Up to 2006, data as per Ordinance CNP No. 221/1981. Since 2007, data as per Ordinance ANP No. 17/2004.

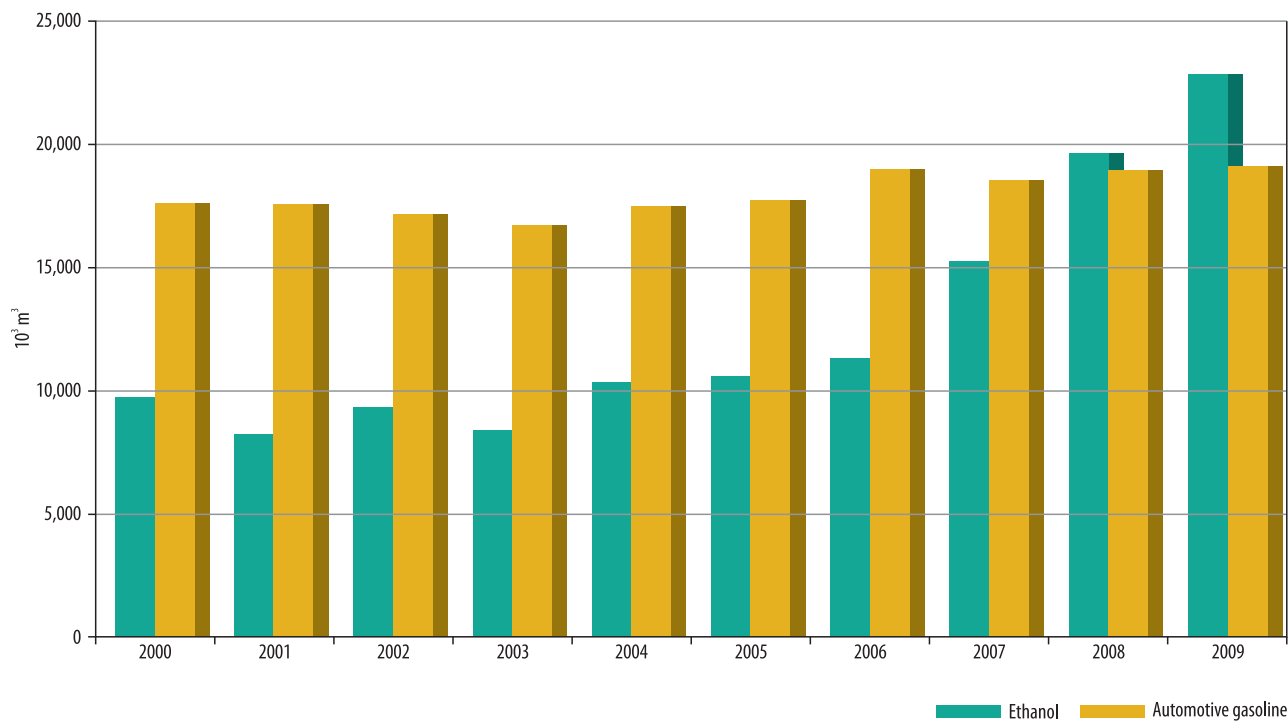
Note: Up to 2006, data include distributors sales and their own consumption. Since 2007, data include solely distributors sales.

Figure 2.2 – Hydrated ethanol sales, by region, at distribution level – 2000-2009



Source: ANP/SAB (Table 2.4).

Figure 2.3 – Domestic sales of ethanol¹ and automotive gasoline² – 2000-2009



Source: ANP/SPP

¹Sales of hydrated ethanol included, as well as the ones of anhydrous ethanol, which is added to automotive gasoline (gasoline A), in order to obtain gasoline C. ²Only gasoline A included. Anhydrous ethanol not included.

2.2 Biodiesel

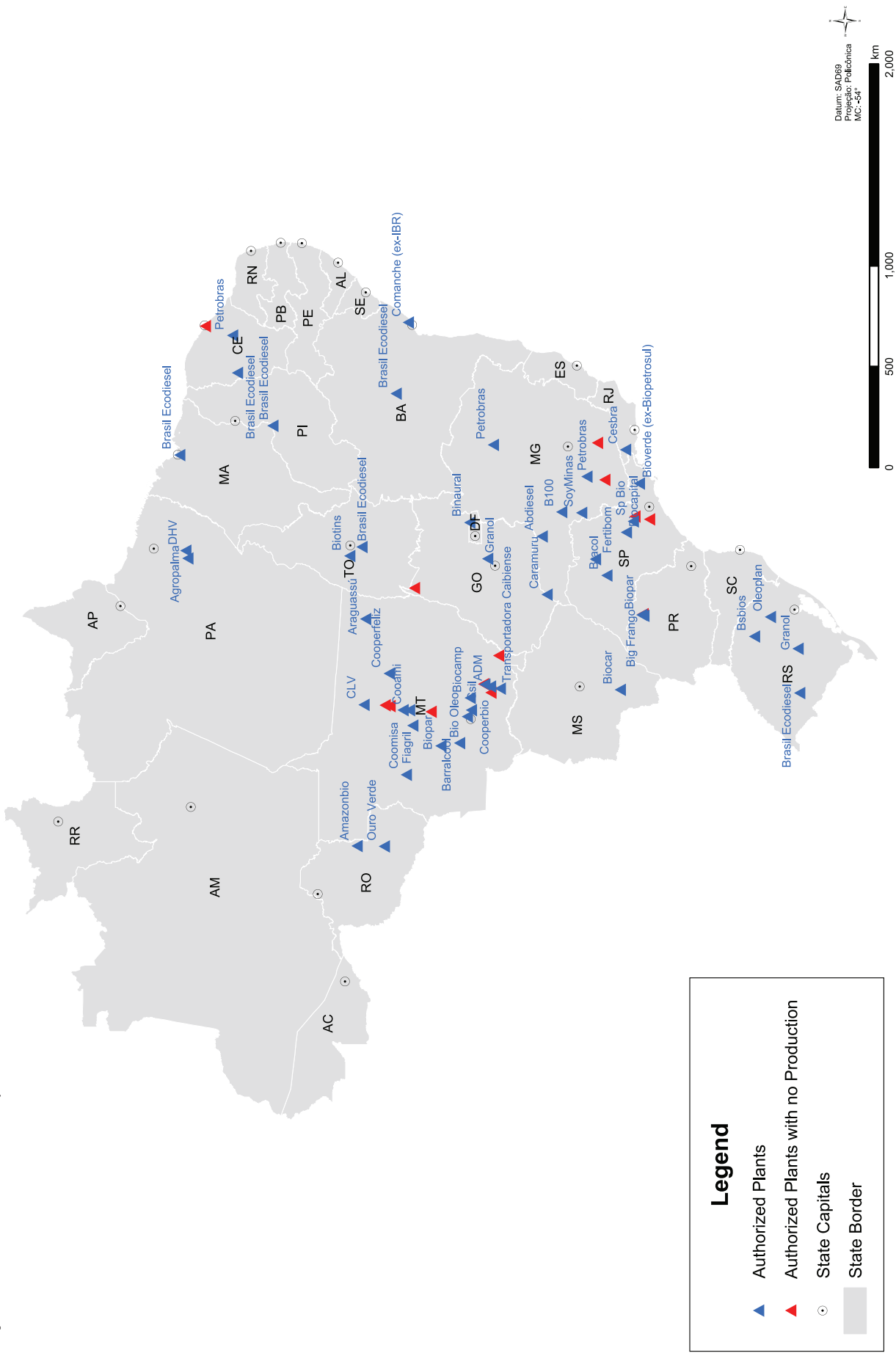
Table 2.5 – Nominal capacity and production of biodiesel¹ (B100), by plant – 2009

Plant ²	Location (State)	Nominal Capacity ³	Production
		(m ³ /year)	(m ³)
Total		4,391,815	1,608,057.0
Abdiesel	Araguari (MG)	2,160	4.0
Abdiesel	Varginha (MG)	864	-
ADM	Rondonópolis (MT)	343,800	165,941.2
Agrenco	Alto Araguaia (MT)	235,294	-
Agropalma	Belém (PA)	10,800	3,171.8
Agrosoja	Sorriso (MT)	28,800	10,252.0
Amazonbio	Ji-Paraná (RO)	16,200	4,751.0
Araguassu	Porto Alegre do Norte (MT)	36,000	691.9
Barralcool	Barra do Bugres (MT)	58,824	19,154.6
Beira Rio	Terra Nova do Norte (MT)	4,320	-
Big Frango	Rolândia (PR)	12,000	40.0
Binatural	Formosa (GO)	25,200	19,774.6
Bio Óleo	Cuiabá (MT)	3,000	1,566.9
Biocamp	Campo Verde (MT)	46,200	26,967.0
Biocapital	Charqueada (SP)	274,118	81,987.2
Biocar	Dourados (MS)	10,800	4,367.2
Biolix	Rolândia (PR)	10,800	-
B-100	Araxá (MG)	10,800	1,445.0
Bionorte	São Miguel do Araguaia (GO)	29,412	-
Biopar	Nova Marilândia (MT)	8,400	4,641.1
Biopar	Rolândia (PR)	43,200	23,642.0
Biotins	Paraíso Tocantins (TO)	9,720	4,888.7
Bioverde	Taubaté (SP)	88,235	38,280.1
Bracol	Lins (SP)	125,712	84,401.0
Brasil Ecodiesel	Crateús (CE)	108,000	6,693.6
Brasil Ecodiesel	Florianópolis (PI)	97,200	3,615.9
Brasil Ecodiesel	Iraquara (BA)	129,600	31,418.3
Brasil Ecodiesel	Porto Nacional (TO)	129,600	28,658.8
Brasil Ecodiesel	Rosário do Sul (RS)	129,600	54,788.7
Brasil Ecodiesel	São Luís (MA)	129,600	31,194.9
Bsbios	Passo Fundo (RS)	159,840	109,134.2
Caramuru	São Simão (GO)	187,500	118,544.0
Cesbra	Volta Redonda (RJ)	21,600	8,201.1
CLV	Colider (MT)	36,000	15,505.0
Comanche	Simões Filho (BA)	120,600	9,025.9
Comandolli	Rondonópolis (MT)	3,600	-
Cooami	Sorriso (MT)	3,600	6.2
Coomisa	Sapezal (MT)	4,320	188.8
Cooperbio	Cuiabá (MT)	122,400	29,876.0
Cooperbio	Lucas do Rio Verde (MT)	1,440	-
Cooperfeliz	Feliz Natal (MT)	2,400	270.8
DVH	Tailândia (PA)	12,600	322.6
Fertibom	Catanduva (SP)	50,400	27,693.1
Fiagril	Lucas do Rio Verde (MT)	147,586	88,923.2
Fusermann	Barbacena (MG)	10,800	-
Granol	Anápolis (GO)	220,680	130,383.1
Granol	Cachoeira do Sul (RS)	335,998	117,186.9
Granol	Campinas (SP)	90,000	-
Innovatti	Mairinque (SP)	10,800	-
KGB	Sinop (MT)	1,800	-
Nutec	Fortaleza (CE)	864	-
Oleoplan	Veranópolis (RS)	237,600	173,079.7
Ouro Verde	Rolim de Moura (RO)	6,120	28.4
Petrobras	Candeias (BA)	108,616	39,496.8
Petrobras	Montes Claros (MG)	108,616	38,816.9
Petrobras	Quixadá (CE)	108,616	42,460.0
Soyminas	Cássia (MG)	14,400	5.4
SP Bio	Sumaré (SP)	24,984	3,546.3
SSIL	Rondonópolis (MT)	1,800	312.0
Tauá Biodiesel	Nova Mutum (MT)	36,000	-
Transportadora Caibiense	Rondonópolis (MT)	36,000	2,713.1
Usibio	Sinop (MT)	7,200	-
Vermoehlen	Rondonópolis (MT)	1,800	-

Source: ANP/SRP, as per Ordinance ANP No. 17/2004.

¹Pure biodiesel or B100, as per Ordinance ANP No. 07/2008. ²Authorized plants installed until December 31st, 2009. ³Considering 360 operating days, taking into account the restrictions imposed by environmental agencies.

Map 2.1 – Infrastructure for biodiesel production – 2009



GLOSSARY

Anhydrous Ethanol: obtained in Brazil through the fermentation of sugar cane molasses. It has an alcoholic content of 99.3° INPM. The anhydrous ethanol is used in mixtures with gasoline A, specified by ANP Ordinance No. 309/2001, for producing gasoline type C. The alcohol content in gasoline is established by a Ministry of Agriculture Order, conditioned to approval by the Interministerial Sugar and Alcohol Board, and it may vary between 20% and 25% (as determined by article 18 of Law No. 10.696/2003). In 2009, 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 Ordinance ANP No. 07/2008.

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_{15}). 1 cal_{15} 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_{15} = 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 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.

Dew Point Plant (DPP): plant that uses Joule-Thomson effect to adjust dew point of processed gas.

Energy Oil Products: oil products mainly utilized as fuels, which release energy and/or light when burned. That denomination covers the following oil products: LPG, gasoline A, aviation gasoline, lamp fuel, jet fuel, diesel oil, fuel oil and coke.

Ethanol: Composed of two carbon atoms, five hydrogen atoms and one hydroxyl group ($\text{C}_2\text{H}_5\text{OH}$), 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. Ordinance ANP No. 309/2001.

Gasoline C: gasoline composed of a mixture of gasoline A and anhydrous ethanol, which mandatory proportion 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%. Ordinance ANP No. 309/2001.

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 No. 45/2001). Used in Otto cycle internal combustion engines, specifically in alcohol powered vehicles for road transportation. Ordinance ANP No. 36/2005.

INPM: Represents the alcohol percentage in mass in the mixture (% m/m) used in Brazil.

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 or other components generally found in natural gas. Ordinance ANP No. 9/2000.

Liquid Fractionation Plant (LFP): plant designed to separate NGLs components (ethane, propane, butane, iso-butane and C_5^+), consisting of boiling off of hydrocarbons one by one.

Liquid Recovery Plant (LRP): plant designed to process natural gas in order to recover NGLs. That process is required to meet pipeline dewpoint specifications.

Methanol: chemical compound whose chemical formula is CH_3OH . It is liquid and inflammable, besides possessing an invisible flame and freezing point of around -98 °C. Methanol has large scale utilization in plastics industry and in reactions of pharmacological importance. Concerning biofuels industry, methanol is used in transesterification of vegetal oils and animal grasses, in order to produce biodiesel.

Natural Gas Condensate Processing Plant (NGCPP): plant that separates natural gas condensate from a raw natural gas.

Natural Gas Liquids (NGL): hydrocarbons in natural gas removed from gas as liquids, in lease separators, field facilities, NGPPs or in pipeline transfers, according to Ordinance ANP No. 118/2000.

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

Natural Gas Refrigeration Plant (NGRP): Plant that separates natural gas from natural gas liquids.

Non-Energy Oil Products: oil products that, although having significant energy content, are used for non-energy aims. That denomination covers the following oil products: greases, lubricants, paraffin, asphalts, solvents, coke, naphtha, aromatic extract, vacuum gas oil, light cycle oil, atmospheric residue, diluents, n-paraffin, others petroleum oils, bituminous minerals, as well as other oil products of lesser importance.

Operator company: enterprise that is legally designated by the consortium for conducting and executing all the operations and activities in the concession area, according to the provisions established in the concession contract signed by ANP and the concessionaire.

Petroleum Law: Law No. 9.478, of August 6th, 1997.

Refining capacity: processing capacity for which an industrial plant was designed, measured in bbl/d or m³/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 m³/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 m³/calendar day or bbl/calendar day.

Round Zero: denominates the act of signing, under the provisions of the Petroleum Law, article 34, on August 6th 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, kerogen rich organic material. When submitted to high temperatures, shale releases oil, water and gas, as well as a carbon solid residual.

CONVERSION FACTORS, DENSITIES AND LOWER CALORIFIC VALUES

Mean values for year 2009

Products and units	Conversion factor to boe	Density ¹ (t/m³)	Lower calorific value (kcal/kg)
Anhydrous ethanol	m³	3.841	6,750
Hydrated ethanol	m³	3.666	6,300
Asphalt	m³	7.219	9,790
Pure biodiesel (B100)	m³	5.698	9,000
Green petroleum coke	m³	6.277	8,390
Dry natural gas	10³ m³	4.685	8,800
Wet natural gas	10³ m³	5.286	9,930
Refinery fuel gas	10³ m³	4.714	8,400
Gasoline A	m³	5.632	10,550
Gasoline C	m³	5.643	10,400
Aviation gasoline	m³	5.536	10,600
LPG	m³	4.408	11,100
NGL	m³	4.469	10,710
Naphtha	m³	5.368	10,630
Bunker	m³	6.989	9,590
Diesel oil	m³	6.191	10,100
Fuel oil ²	m³	6.989	9,590
Lubricating oil	m³	6.370	10,120
Other energy products	m³	6.340	10,200
Other non-energy products	m³	6.340	10,200
Paraffin	m³	6.141	10,410
Imported oil	m³	6.229	10,190
Domestic oil (offshore and onshore)	m³	6.484	10,190
Exported oil (Marlim)	m³	6.562	10,190
Jet fuel	m³	5.978	10,400
Lamp kerosene	m³	5.978	10,400
Solvent	m³	5.624	10,550

Source: ANP/SPP.
¹At 20 °C and 1 atm for natural gas as well as oil and natural gas products. ²Fuel oil ATE e BTE.

Prefixes of SI Units

- (k) kilo = 10³
- (M) mega = 10⁶
- (G) giga = 10⁹
- (T) tera = 10¹²
- (P) peta = 10¹⁵
- (E) exa = 10¹⁸

Relationships between Units

- 1 m³ = 6.28981 barrels
- 1 barrel = 0.158987 m³
- 1 joule (J) = 0.239 cal
- 1 BTU = 252 cal
- 1 boe = 1,390 Mcal
- 1 toe = 10,000 Mcal

LIST OF SOURCES

Abast – Abastecimento, Marketing e Comercialização Petrobras – Petróleo Brasileiro S.A.

MME – Ministério de Minas e Energia

Av. República do Chile, 65 – Sala 2001-D
20035-900 – Rio de Janeiro – RJ
Website: www.petrobras.com.br
Phone: +(55) (21) 2534-3205
Fax: +(55) (21) 2534-1899

Brazilian Oil, Natural Gas and Biofuel Statistical Book 2010

ANP – Agência Nacional do Petróleo, Gás Natural e Biocombustíveis

MME – Ministério de Minas e Energia

Av. Rio Branco, 65 – 12º ao 22º andar
20090-004 – Rio de Janeiro – RJ
Website: www.anp.gov.br
Phone: +(55) (21) 2112-8100
Fax: +(55) (21) 2112-8129

BP – BP Statistical Review of World Energy

BP, Britannic House
1 St James' Square,
London SW1Y 4PD
United Kingdom
Website: www.bp.com/centres/energy/index.asp
Phone: +(44) (0) 870-241-3269
Fax: +(44) (0) 870-240-5753

DAA – Departamento da Cana de Açúcar e Agroenergia

SPAÉ – Secretaria de Produção e Agroenergia

MAPA – Ministério da Agricultura, Pecuária e Abastecimento

Esplanada dos Ministérios, Bloco D – 7º andar
70043-900 – Brasília – DF
Website: www.agricultura.gov.br
E-mail: daa@agricultura.gov.br
Phone: +(55) (61) 3218-2762
Fax: +(55) (61) 3225-7387

Platt's Crude Oil Marketwire

Standard & Poor's Platt's

McGraw-Hill
55 Water Street, 46th Floor
New York, NY – 10041-0003
United States of America
Website: <http://www.platts.com/>
Phone: +(1) 800-752-8878

Riograndense – Refinaria de Petróleo Riograndense S.A.

R. Eng.º Heitor Amaro Barcellos, 551
96202-900 – Rio Grande – RS
Website: www.refinariariograndense.com.br
E-mail: refinaria@refinariariograndense.com.br
Phone: +(55) (53) 3233-8000
Fax: +(55) (53) 3233-8036

RPDM – Refinaria de Petróleos de Manguinhos S.A.

Av. Brasil, 3141
20930-041 – Rio de Janeiro – RJ
Website: www.rpdm.com.br
E-mail: rpdm@rpdm.com.br
Phone: +(55) (21) 3891-2000

Secex – Secretaria de Comércio Exterior

MDIC – Ministério do Desenvolvimento, Indústria e Comércio Exterior

Esplanada dos Ministérios, Bloco J
70053-900 – Brasília - DF
Website: www.desenvolvimento.gov.br/sitio/interna/index.php?area=5
Phone: +(55) (61) 2027-7000

SIX – Superintendência de Industrialização do Xisto

Petrobras – Petróleo Brasileiro S.A.

MME – Ministério de Minas e Energia

Rodovia BR-476, km 143
83900-000 – São Mateus do Sul – PR
Website: www2.petrobras.com.br/minisite/refinarias/petrosix/portugues/processo/index.asp
E-mail: rxas@six.petrobras.com.br
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Natural Gas and Biofuels