

Chapter 1

Santa Rita

Type of project

1,000 MW combined-cycle power plant.

Country

The Philippines.

Distinctive features

- Complementary financing among project finance banks, ECAs, the EIB, and a US private placement.
- The EIB's first Asian independent power plant (IPP).
- Landmark Malaysian Exim/MECIB political risk project financing.
- Innovative placement during construction period.
- Large, long-term commitment by special foreign currency units in the Philippines.
- Substantial national FX savings from using indigenous fuel.
- Combined-cycle gas turbine plants are the most environmentally friendly.

Description of financing

US\$630 million 15-year complementary (parallel) facilities from KfW/Hermes, US private placement, Mexim/MECIB, Philippine banking units and the EIB for development of a 1,000 MW combined-cycle power plant south of Manila supplied by a new Shell gasfield offshore the Philippines. Partial coverage for political risks is built in.

Background¹

The Santa Rita project is the cornerstone power plant of the First Generation Holdings Corporation (First Gen)/Lopez Group. Established in the mid-1800s, the Lopez family – with strong roots in the sugar industry – was once thought to have had the power to decide the fate of Philippine presidents. Imprisoned during the Marcos era, the Lopez business patriarch, Eugenio Lopez Jr, escaped and flew to the United States. On his return to the Philippines in 1986, the Lopez Group won back some confiscated assets and rebuilt the business. Today, the Group's activities extend to water distribution (Maynilad), tollroads (Manila North

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Tollways), real estate (Rockwell), cable television (Sky Cable), telecoms (BayanTel) and Meralco, the country's largest electricity distributor. Focusing on power generation, First Gen is largely owned by First Philippine Holdings Corporation (FPHC), the power arm of the Lopez Group.

National Power Corporation (Napocor), the Philippine national power entity, generates electricity and is the only company licensed to transmit electricity throughout the country. Its generating plants mainly use imported coals, fuel oil/diesel and hydro as fuel. Following liberalisation of the power generation industry in the 1990s, several Philippine IPP projects came into being, most of which were project financed (see Exhibit 1.1)

The opportunity to build a combined-cycle power plant, however, was given extra impetus by the huge Malampaya gasfield discovery off Palawan Island. Discovered in 1992 by Shell Philippines Exploration (SPEX), it holds 2.5 trillion cubic feet of proven gas reserves. Besides Santa Rita, San Lorenzo and Ilijan (2,700 MW), the Philippine government would like to see another 2,300 MW (to 5,000 MW total gas-fired).² These will either require further gas reserves to be proven up at Malampaya/Camago or imports of LNG.

Project summary

The Santa Rita project is a 1,000 MW combined-cycle gas turbine (CCGT), the most fuel efficient format for power generation. Total funding cost amounted to US\$840 million, of which 75 per cent is project financed. A US\$50 million working capital revolver has also been added.

Located 100 kilometres south of Manila, the plant is built near the 230 kV transmission lines connecting it to the Luzon grid. The plant EPC contractor and operator is Siemens of Germany. The PPA offtaker is Meralco (itself a key FPHC group member) for 25 years, extendible to 40 years. Components of the financing are set out in Exhibit 1.2. The term-debt is 15 years with the private placement notably back-ended.

Ownership

The Philippine SPV is First Gas Holdings

Exhibit 1.1

Recent Philippine IPP projects

<i>Project</i>	<i>Fuel</i>	<i>Capacity (MW)</i>
Hopewell, Navotas I and II	Distillate	310
Pagbilao	Coal	700
Sual	Coal	1,000
Leyte	Geothermal	640
Casecnan	Hydro	150
Bauang (First Gen)	Diesel	225
Panay (First Gen)	Diesel	72
Enron, Subic	Diesel	108
Quezon	Coal	440
San Roque	Hydro	325
Ilijan (near Santa Rita)	Gas	1,200
Luzon	Hydro	70
San Lorenzo (Santa Rita expansion)	Gas	500

Exhibit 1.2

Financing sources

<i>Source</i>	<i>US\$ million</i>
KfW/Hermes	190
US private placement	160
Philippine foreign-currency banking units	110
EIB	78
Mexim	26
Mexim/MECIB	66
Total term debt	630
+ Working capital revolver	50
Total debt	680
+ Equity	227
Total funding	907

Corporation (FGHC), an incorporated joint venture between First Gen (Lopez Group) holding 60 per cent and BG plc (British Gas) with 40 per cent. FGHC owns 100 per cent of the project company, First Gas Power Corporation (FGPC).

First Gen is the primary entity focusing on the power generation business FPHC, one of the major holding companies of the Lopez Group. Majority-owned (92.25 per cent) by FPHC, First Gen is currently the Philippines' third largest IPP with approximately 1,900 MW of projects representing 10 per cent of the current total installed power capacity of the country. Attributable generating capacity includes 1,300 MW of operating assets and approximately 600 MW of additional projects under construction or development. By various measures of size such as generating capacity, earnings or cash flow, First Gen is one of the most significant IPP companies in Asia.

First Gen's assets include holdings in First Private Power Corporation, Panay Power Corporation, First Gas Holdings Corporation, Unified Holdings Corporation and First Philippine Energy Corporation. Through its subsidiaries, First Gen operates two diesel power plants in the Philippines, at Bauang (North Luzon) and Panay (Visayas). In 2000, First Gen had revenues of US\$14.247 million and net income of US\$10.829 million.

FPHC is a publicly listed investment company with core businesses in power generation and distribution and other energy projects, with approximately 90 per cent of its investment portfolio deployed in these sectors. FPHC has a market capitalisation of P17,981 million (US\$450 million) as of 30 December 1999. FPHC was incorporated as Meralco Securities Corporation on 30 June 1961. The company was organised by a group of Philippine investors led by its founder, entrepreneur Don Eugenio H. Lopez Sr, to acquire Meralco from its US owner, General Public Utilities of New Jersey.

FPHC's investments range from a substantial interest in Meralco, the largest electricity distributor in the Philippines, in First Generation Holdings Corporation and in First Philippine Industrial Corporation, the largest commercial oil pipeline operator in the Philippines.

BG Group is the part of the privatised British Gas focusing on gas developments. About half has since been spun off leaving a BG balance sheet of US\$5.6 billion in net assets.

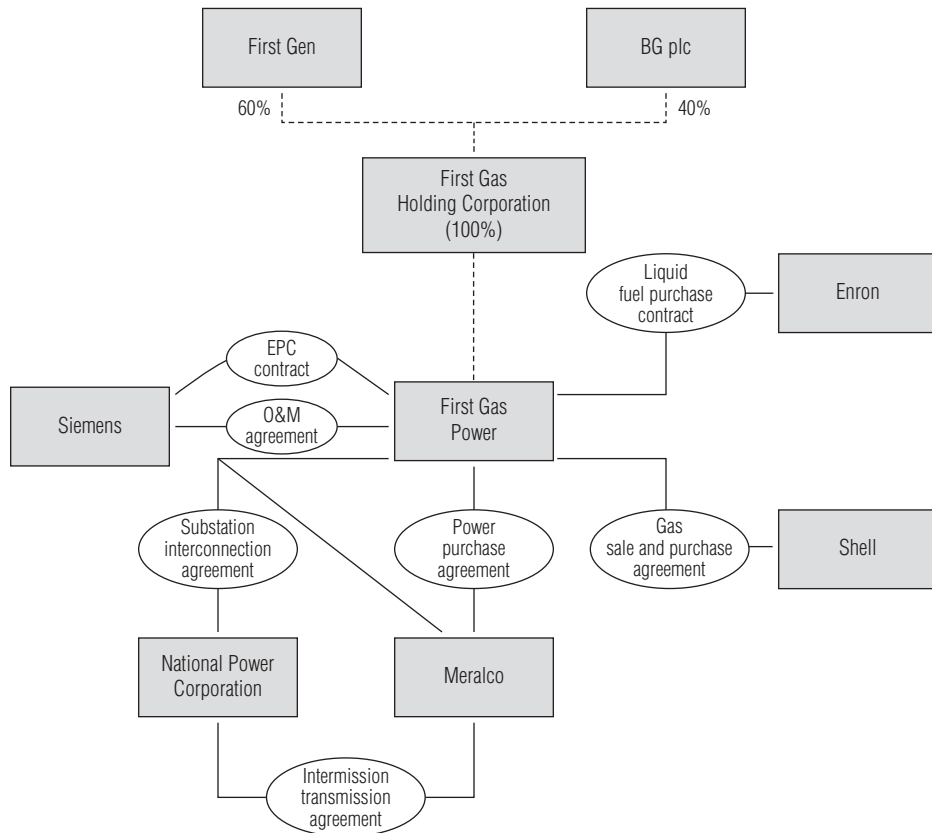
Project structure

FGPC is selling electricity to Meralco under a 25-year power purchase agreement. FGPC has contracted with a consortium of Siemens companies for the engineering, procurement and construction of the Santa Rita power plant. In order to fulfil its responsibility to operate and maintain the power plant, FGPC has contracted with Siemens Power Operations, Inc (SPOI), a 100 per cent subsidiary of Siemens AG, which will act as operator under the O&M agreement. The plant initially operated on liquid fuel (gas oil, condensate or naphtha) supplied by Enron Capital Trade Resources Singapore (Enron) under a liquid fuel purchase contract. However, the plant converted to natural gas supplied from the Malampaya natural gas reserves in Palawan in October 2001. The Malampaya gas field has been developed by Shell Philippines Exploration BV (Shell). FGPC, Meralco and Napocor have entered into a sub-station interconnection agreement, which specifies the terms under which FGPC and Napocor agree to interconnect the project to Napocor's grid and Meralco and Napocor agree to enter into an interim transmission agreement.

Exhibit 1.3 illustrates the Santa Rita project's ownership structure and key contractual agreements.

Exhibit 1.3

Santa Rita project structure



Contracts

PPA

Meralco contracts to offtake the power for a 25-year period at a minimum capacity factor of 83 per cent. The tariff has seven components:

- capacity charge (fixed);
- operating charge (fixed);
- variable operating charge;
- fuel charge;
- wheeling charge;
- sales tax charge; and
- excess generation.

Initiated on condensate fuel, the plant started commissioning to Malampaya natural gas on 1 October 2001. Once commercially operating on natural gas from 1 January 2002, liquid fuels

serve as back-up fuel. At plant startup, the tariff was approximately US¢5.6/kWh. Some 97 per cent of the tariff is the peso equivalent of US dollars. (In the event that the peso becomes inconvertible, Meralco must make payment in US dollars.)

Deemed generation occurs during defined *force majeure* by Meralco due to:

- government action;
- change in law;
- fuel supply interruption; or
- transmission difficulties.

Extended *force majeure* can trigger Meralco's buy-back of the project for the debt plus equity/return; but if it is FGHC's *force majeure*, the purchase price is solely the debt.

Wheeling contract

Napocor, FGPC and Meralco interconnect at a nearby substation. However, FGPC had to construct a new 35-kilometre 230 kV transmission line, which was part of the EPC contract with Siemens. FGPC made the land/right-of-way acquisitions and delivered the transmission line to Napocor within schedule.

EPC contract

FGPC entered into a turn-key, fixed price, date-certain EPC contract with Siemens with a contract value of US\$487million. The contract includes standard construction bonding, insurances, warranties and a cap of 30 per cent on liquidated damages (LDs). The plant will use Siemens V84.3A gas turbines (one of Siemens high-efficiency gas turbines). It is capable of running using multiple fuels (condensate, gas oil or naphtha as liquid fuels or natural gas).

Siemens has provided guarantees for completion and performance and will pay LDs should the project be delayed or the performance requirements not met. The contractor has agreed to provide warranties using new and utility grade materials and workmanship of first class and sound quality.

The EPC contract has a 5 per cent advanced payment bond and fixed payment dates. After allowance for monsoonal weather, the 'guaranteed completion dates' are 24 months for Block One and 27 months for Block Two.

O&M contract

The operation and maintenance strategy has been developed in accordance with the requirements of the PPA. Maintenance will be performed to meet Meralco's demand schedule with minimum down time and maximum flexibility. Under all circumstances, plant integrity will be maintained by the observance of good utility practice. A system of bonuses and penalties has been established to provide operator incentives to achieve certain pre-agreed performance levels.

When building nuclear plants in the 1970s and 1980s, Siemens commissioned (and operated) them until passing them over to their customers. Siemens' newly formed Siemens Power Operations, Inc has been operating two CCGT plants in Malaysia since 1995.

On 16 December 1996, FGPC executed an operations and maintenance (O&M) agreement

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with Siemens Power Operations, Inc, a 100 per cent owned subsidiary of Siemens AG based in the Philippines. Siemens role as both contractor and operator will help to ensure seamless transition from the construction to the operations phase of the project. The Santa Rita O&M contract extends to the longer of six years or the second major overhaul (77,000 operating hours equivalent, and includes startup-hours penalties) with an option to renew two additional terms.

FGPC is currently developing its own internal O&M team to potentially undertake the operations and maintenance of the Santa Rita project. Thus, there exists the possibility that FGPC may take over the O&M responsibilities of the plant in the future upon expiration of the O&M agreement with Siemens.

The operator receives:

- a monthly fee (fixed);
- mobilisation;
- start-up payment;
- subject to FGPC being damaged, bonus/penalties for the performance of (a) heat rate and (b) dependable capacity (net), although the penalty cannot be more than 21 per cent of the year's 'Monthly Fees'; and
- minimum power generation (kWh) also has an incentive regime.

BG operates a converted steam turbine (ST) plant in Northern Ireland. It also has gas turbine (GT) operations as gas pipeline compressors in the United Kingdom, having 1,234 MW in 117 units (10.5 MW average). BG also has 50 per cent of a 750 MW CCGT development in the United Kingdom using the Siemens' sister GT, V94.3A, with Siemens having a maintenance agreement.

Fuel supply

FGPC has developed a sophisticated fuel strategy designed to provide Meralco with a reliable and cost-effective power supply throughout the term of the PPA. The turbines were designed to run on a wide variety of fuels including natural gas. To complement the development and commercial viability of the Malampaya natural gas project, FGPC entered into a 22-year gas sale and purchase agreement with Shell for the purchase of natural gas beginning in the second year of operations. Initially, the plant ran on liquid fuel supplied under a liquid fuel purchase agreement with Enron Capital Trade Resources Singapore (Enron). When natural gas became available in October 2001, liquid fuel became a back-up fuel source.

Enron was selected to supply the initial fuel: condensate, a light, sweet oil fraction in plentiful supply in Asia. The fuel supply is back-to-back with power plant availability/generation. The condensate marker price is Dubai light crude oil, which independent petroleum consultant Purvin & Gertz estimates at around US\$3.60–4.00/GJ for the delivered condensate price. SPEX's gas landed at Santa Rita is budgeted at US\$3.80/GJ but with only 40 per cent oil price indexation.

Financing structure

The original financing plan envisioned a combination of multilateral/bilateral agencies, export credit agencies, as well as the Philippine foreign currency deposit units (FCDUs).

However, FGPC and its adviser, JP Morgan, saw compelling reasons to include a US private placement tranche in order to lengthen maturities. The final facilities for the 75 per cent debt were a combination of US private placement, ECAs and commercial banks/FCDUs as detailed below.

US private placement

- *Amount:* US\$160 million.
- *Term:* 15 years with 12-year half life.
- *Phased drawdowns:* as to 23 per cent year one; 37 per cent year two; and 40 per cent year three.
- *Repayment:* unequal semi-annual instalments commencing in 2005.
- *Interest:* T12 + 250bp.

EIB guarantee

- *Amount:* US\$78 million.
- *Term:* 15 years with three-years grace.
- *Repayment:* unequal semi-annual annuity instalments commenced in 2001.
- *Interest:* Libor + 150bp to year-end five; then Libor + 175bp to year-end seven; then Libor + 200bp to maturity.
- *Commitment fee:* 50bp.

Mexim/MECIB

- *Amount:* US\$66 million.
- *Term:* 13 years with three-years grace.
- *Repayment:* Semi-annual annuity instalments.
- *Interest:* Sibor + 125bp.
- *Commitment fee:* 25bp.

Hermes/KfW

- *Amount:* US\$190 million.
- *Term:* 13 years with three-years grace.
- *Repayment:* semi-annual annuity instalments.
- *Interest:* CIRR + 20bp.
- *Commitment fee:* 37.5bp.

FCDU facility

- *Amount:* US\$110 million.
- *Term:* 10 years with three-years grace.
- *Repayment:* unequal semi-annual annuity instalments commenced in November 2000.
- *Interest:* 287.5bp margin.
- *Commitment fee:* 37.5bp.

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Revolver

- *Amount:* US\$50 million.
- *Term:* 7 years.
- *Interest:* Sibor + 225bp.
- *Commitment fee:* 50bp.

The PPA requires a US\$15million performance letter of credit (L/C) during construction. Fuel is a second major working capital requirement.

EIB/Mexim/MECIB/Revolver

- *ABN Amro:* bookrunner, intercreditor agent, agent.
- *Bank of Tokyo-Mitsubishi:* insurance bank.
- *West LB:* technical and fuel bank.
- *Up-front fees:* co-arranger (>US\$20 million), 60bp; senior lead manager (>US\$15 million), 50bp; lead manager (>US\$10 million), 35bp.

Risk analysis

The risk analysis is summarised in Exhibit 1.4.

Exhibit 1.4

Santa Rita project risk factors

<i>Risk</i>	<i>Factors</i>
Operating-cost	Fuel is a pass-through which is 82 per cent of opex. Equipment has the highest combined-cycle efficiency.
Operating-management	Siemens' O&M contract is only for six years (versus the 15-year term). The O&M contract is extendible for another six years. Training third-party operators as replacement.
Operating-technology	The Siemens V84.3A GT is new. Siemens puts up a US\$540 million new technology indemnity (NTI) to buttress insurance exclusions, if any.
Completion	Strong EPC contract/contractor with 20 per cent delay LDs; DIS insurances.
Political	Meralco distribution franchise safe. Deregulation may cause shift to open market rather than PPA pricing over time. Benign regulator, so far.
Market	Strong growth expected. Manila/Meralco's market pivotal to the country.
Supply/reserve	Plenty of gas from Shell's offshore Philippines development from 2002. Condensate – plentiful in Asia – as the bridging fuel.
Infrastructure	Long, deepwater gas pipeline/deepwater gas field development. Short transmission line interconnect.
Participant	Strong local and international sponsors. Siemens impeccable, although some inherent conflicts in its role(s).
Environmental	CCGT always the best alternative.
Force majeure	Insurances plus Meralco buy-out if extended problems.
FX	Only 3 per cent of the electricity tariff is denominated in pesos.
Engineering	Standard; independently reviewed. Siemens takes site geotechnical risk.
Syndication	Oversubscribed.
Interest	Standard package; some swaps will be implemented to fix floating rates.
Legal	Plenty of experience on prior Philippine project financings. Conventional legal structure.

Operating-cost risk

The equipment supplier, Siemens, has guaranteed the output, heat rate, degradation and availability. In addition, the overall defects liability period is extended to two years on equipment and to 10 years for civil works from the date of plant acceptance.

Operating-management risk

Siemens has a solid track record of operating (and commissioning) two CCGT plants in Malaysia. Being both operator and EPC contractor will ensure compliance with all warranties and indemnities. However, Siemens cannot hide behind its contractor role if there is a short-coming in the plant's operations.

Siemens will be the operator during the conversion from condensate to Malampaya natural gas. Its O&M contract requires it to transfer skills from expatriates to local employees. When the Siemens contract ends in or about the sixth year of operation, the plant could be operated directly by FGPC, its shareholders or third party contractors. With a workforce of 80 overall, the non-day shifts will only require nine plant operators.

The block layout of Santa Rita, each with two single-shaft modules, also assists the maintenance scheduling for the 25,000-hour cycle of maintenance checks.

The operator, Siemens, has guaranteed a 90 per cent availability, which is well above the contracted minimum of 83 per cent in the Meralco PPA. In fact, such a plant would be expected to achieve up to 94 per cent availability.

Operating-technology risk

The main technology risk is the adoption of a single shaft for the Siemens gas turbine (GT) and the three-pressure-stage steam turbine (ST). The modifications have been made in conjunction with aircraft-engine specialist, Pratt & Whitney. However, these machines can trace their origins to 1974, later modified in 1986 to handle dry-low-NO_x hybrid gas combustors. (NO_x emissions – the brown part of smog – come from high combustion temperatures and are controlled by changing operating conditions and water injection.)

In all, Siemens' GT fuel efficiency (heat rate) has increased from 30 per cent to 38.5 per cent and output from 90 MW to 170 MW for these GTs. In combined-cycle mode, the fuel efficiency is 57 per cent. The four STs per set are conventional reheat with a special HRSG boiler configuration to allow them to follow the GT between 50–100 per cent load. Under the NTI, Siemens underwrites any insurance gap for any exclusions from machinery breakdown/business interruption from the 3A technology with the GTs to the tune of US\$560 million at a rate not exceeding US\$140 million per annum (four years).

The main modifications were pitched at more efficient compression, smaller hybrid combustors, high-technology ceramic heat shields, quick start, and in-situ maintenance which results in NO_x as low as 9 ppm (expected 25 ppm). The generator sits between the GT and STs and is driven from the 'cold' end of air intake. An independent expert, Rust Kennedy & Donkin (now Parsons Brinckerhoff), stated that the V84.3A technology 'is not a radically new departure from earlier designs and therefore does not represent an unreasonably high risk associated with the new technology'. At the time of the Santa Rita EPC order, Siemens had 13 orders for this make of GT. Nevertheless, the 3A GT did not yet have 8,000 hours (one-year) of operating history at the time of the financing.

Completion risk

Completion risk is covered by:

- Siemens obligations under the EPC contract – which include a 10 per cent performance bond. LDs are as follows: (a) for every 1 per cent the heat rate is up, 1.805 per cent of the EPC contract price (up to a limit of 20 per cent of the contract price); and (b) for every 1 per cent the output (MW) is down, 1.0 per cent of the EPC contract price (also up to a limit of 20 per cent of the contract price).
- DIS Insurance of US\$200 million.
- Reimbursement obligations if Meralco causes a delay; ultimately Meralco buy-out.
- Contingencies (10 per cent of EPC price).
- Deemed dispatch (the PPA commences) if the delay is due to government action/change in law, fuel/transmission problems or uninsurable events.
- Extensive technical due diligence on EPC costs and milestones by the independent engineer, Parsons Brinckerhoff.
- Should a legislative/regulatory change cause a cost overrun/delay, either the political risk cover or the contingency pool will be called.

Although Siemens is also the operator, completion under its EPC contract is nevertheless a three-stage physical regime:

1. individual components;
2. system groups;
3. power operations; synchronisation and full load to grid acceptance (Meralco).

Siemens will have 40–50 expatriates on site, most from its Asian base in Kuala Lumpur. Some 700–1,200 construction workers are needed, 95 per cent of whom are Filipino.

Political risk

Meralco has been in existence for almost a century and is the country's second most widely held public company. In 1989, the Philippines enacted a highly effective BOT law that spurred a series of IPPs including Enron's Subic Bay development in 1994. Like many countries, the cause of power deregulation is politically popular in the move towards inducing competition to lower electricity prices and expand electricity service choices. The re-regulation is handled by the Department of Energy (policy), Energy Regulatory Board (prices) and the National Energy Administration (distribution). Meralco states that it has 'historically benefited from a fair and supportive regulatory regime'.

The main Manila franchise expires in 2003. However, Meralco sees its service area(s) increasing over time due to its acknowledged reliability. Furthermore, Meralco has creditors that include the World Bank, ADB and JBIC. A damaged Meralco would more than proportionately damage the nation. The risk is low concerning Meralco's franchise.

The Philippine legislature recently passed the Electric Power Industry Reform Act (RA 9136), which is intended to promote competition in the Philippine power industry. The key points of the legislation include:

- Vertical unbundling of Napocor, which will become a regulated Transco.
- All of Napocor's power generation assets will be corporatised/privatised into several (probably six) generating companies (Gencos).
- Establish a wholesale electricity spot market operating on a merit order of dispatch.
- Open access transmission policy.
- Introduce wheeling/competition for large customers.
- A new regulator who is required to reduce cross-subsidies and make tariffs more transparent and economically rational.

In recent times, Napocor has been passing through an FX adjustment in its electricity charges to its customers, which is directly painful as the Philippine peso devalues (at the time of writing) below 55 pesos to the US dollar. (At the time of the Santa Rita project financing, the peso stood at 26 to the US dollar.) The FX savings and lower fuel costs are a distinct plus for Santa Rita.

The country's petroleum sector is being deregulated, freeing up imports. However, import tariffs apply to Santa Rita's liquids phase as follows: condensate 3 per cent; gas oil 7 per cent; and naphtha 7 per cent (with additional taxes per litre on gas oil and naphtha).

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