

TRINIDAD and TOBAGO

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Trinidad and Tobago, comprising 23 islands with Trinidad the largest at 4,828 km² and Tobago at 200 square km², is the most southerly country in the Caribbean sub-region with Trinidad itself lying just 11 km off the Venezuelan coast. Being the Caribbean's largest producer of oil and gas has enabled it to become the most industrialised Caribbean nation. Although its oil production is slowly declining, Trinidad and Tobago has emerged as one of the major natural gas development centres in the world which in turn has helped support eight ammonia complexes, five methanol units, a urea plant, and an iron and steel facility, Trinidad is also the world's leading exporter of ammonia and potentially the leading exporter of methanol.

Geologically, Trinidad is located at the triple junction formed by the meeting of three tectonic plates making it one of the most geologically complex areas of the world. There are about 50 active quarries and the demand for construction aggregates has increased dramatically. An important outlet for limestone is Trinidad Cement's plant on the western coast near Point Lisas. Overall, Trinidad Cement Ltd group of companies has a production capacity of 1.7 Mt from three cement plants: Trinidad Cement Ltd, (TCL) in Trinidad, Arawak Cement Co Ltd. (ACCL) in Barbados, and Caribbean Cement Co Ltd. (CCCL) in Jamaica. The company also produces gypsum and pre-mixed concrete.

TCL was incorporated in Trinidad in 1951 and commenced production in 1954. Its primary activity is the manufacture of Ordinary Portland Cement, as well as Class G High Sulphate Resistant (HSR) Oilwell Cement. The company operates two kilns at the 600,000 t/y Claxton Bay wet-process plant which is supplied by the Mayo Quarry some 12 km away. This is the lowest-cost producer among the three plants with ACCL and CCCL some 25% and 35% higher largely due to higher energy costs in Barbados and Jamaica. (Mexican cement producer Cemex Ltd withdrew its buyout offer for all the shares in Trinidad Cement Ltd and its subsidiaries after an objection by the Trinidadians; one of the world's four largest cement producers, Cemex's 20% stake in Trinidad Cement Ltd made it the single largest shareholder.)

Blue-coloured limestone and sand and gravel of various grades are quarried in the Northern Range for use in construction, while plastering or red sand is quarried in central Trinidad and used as a low-grade filler material and as a construction finishing material. Yellow-coloured limestone is also quarried in the south central portion of Trinidad, while clay from the central and southeastern area is used for blocks, tiles and pottery. Other economic minerals include andesite, argillite, porcelainite, fluorspar, graphite, gypsum, sand and gravel, quartz gravel and sandstone.

Lake Asphalt of Trinidad and Tobago (1978) Ltd, a wholly-owned state company, exploits natural asphalt from the famous Pitch Lake in La Brea,

Trinidad. The asphalt occurs as a semi-solid emulsion composed of soluble bitumen (53-55%), mineral matter (36-37%), and other minor constituents including water (9-10%). The raw material is refined through polymerisation, selective absorption by clay minerals and silica, electrostatic accumulation of pitch bodies, and geothermal oxidation of a parent crude to remove water and other minor constituents and so produce Epure. This is used as a modifier to road-grade bitumens for use in pavement construction on roads, bridges, tunnels and seaport terminals.

Trinidad and Tobago's oil production averages about 140,000 barrels per day (bbl/d) contributing over 25% of the country's GDP and 75% of its foreign exchange revenues. However, at approximately 716 Mbbl, dwindling crude oil reserves are sufficient for only another ten years. In contrast, natural gas reserves, at an estimated 23.5 trillion cubic feet (Tcf), are expected to last for about 60 years at the current rate of production - 490 billion cubic feet (Bcf) of natural gas. BP is the nation's largest oil and gas producer, and Petrotrin is the state oil company. In terms of refining capacity, the 160,000 bbl/d, Pointe-a-Pierre refinery can handle gasoline, diesel oil and jet fuel, based on crude supplies from domestic sources, such as BP's Galeota Point production, and imports, such as from Suriname.

A number of companies are active in natural gas and oil exploration, including British Petroleum Trinidad, FP, EOG Resources, BHP Billiton, Exxon, British Gas, Conoco and Trinidad Shell Exploration and Production Ltd. Recent successes include British Petroleum Trinidad's 1 Tcf offshore natural gas find 70 km off the eastern coast, with the potential for 100 Tcf of natural gas, and BHP Billiton's three new hydrocarbon discoveries in Block 2(C) off the northeastern coast of Trinidad containing up to 1,000 Mbbl of oil and 2.5 Tcf of natural gas, making it the country's largest-ever offshore discovery. BHP Billiton, the operator in Block 2(C), with consortium partners TotalFinaElf and Talisman Energy, estimates that oil production could start in 2004, and the consortium has announced plans to begin exploration in adjacent Block 3(A). In addition, EOG Resources made a discovery in its SECC block off Trinidad's eastern shore that is expected to add 250-350 Bcf of natural gas to the field's existing reserves.

Land operations have involved Petrotrin, Lease and Farmout Operatorship, Primera Oil and Gas Ltd, Trinidad Exploration and Development Ltd, Tracmac Moruga Energy Resources Ltd, New Horizons Exploration Trinidad and Tobago Ltd, and Vintage Petroleum. Total oil production from land averaged 25,142 bbl/d, about a 6% decrease from 2000. Petrotrin contributed 78% of total production. Overall, Trinidad and Tobago has emerged as a major natural gas centre to the extent that gas will soon surpass oil as the main revenue earner.

Gas produced in Trinidad and Tobago is used for electricity and petrochemical production, as well as heavy and light industry. The country is now the largest LNG exporter to the US through Atlantic LNG Co., a consortium comprising BP (60%), Repsol-YPF (20%) and Cabot Trinidad (10%). The Atlantic plant is considered the largest single-train plant ever

built, and the first LNG producer in the Latin America and Caribbean region. The plant is presently undergoing a US\$1 billion expansion by adding a second and third train to triple capacity to 10 Mt/y by 2003. BP is building one of the world's largest offshore gas processing units as part of a US\$600 million project to supply gas to these additional trains. The pipeline will be one of the world's largest, with the capability to transport 2 Bcf/d uncompressed.

Trinidad, the world's leading exporter of both ammonia and methanol, now has eight ammonia complexes with another under construction, five methanol units, a urea plant, and an iron and steel complex. Over 1.3 Mt of methanol are exported with triple that amount of ammonia. The Titan methanol plant came fully on stream last year. New ventures should lift fertiliser capacity to 4.5 Mt/y. Companies investing in fertiliser and methanol have included Norsk Hydro of Norway, Ferrostaal and Helm of Germany, Methanex of Canada, and Farmland and Mississippi Chemical of the US. Canada has been a major investor and Potash Corp. of Saskatchewan (PCS), which acquired Arcadian, now PCS Nitrogen, has three ammonia plants and a fourth under construction at the Point Lisas Industrial Estate petrochemical complex.

The country's major non-oil exports are iron and steel. Point Lisas is expanding in response to industrial growth and hosts the Nucor iron carbide plant and the DRI-based steel-maker Ispat. Norsk Hydro, whose Agri division has been in Trinidad since 1991 and employs 320 employees, mainly in ammonia production, has planned to build another aluminium smelter near its existing ammonia plant; production should begin this year and the project is part of the division's strategy to double production capacity of primary aluminium from 1995 to 2005. The available production capacity would be 237,000 t/y with an equal increase in a second-phase expansion later.