

The local high-flier of the gas economy: A profile of NGC

By David Renwick

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Unlike its incursions into oil production and refining, which were largely fortuitous and unplanned, the Trinidad and Tobago Government's plunge into gas development was the result of a clear decision and deliberate action on its part.

When natural gas was discovered in substantial quantities off the east coast in 1968 (about one trillion cubic feet), along with oil, in what was to become the Teak field and then, in even greater volumes (close to 2 tcf) in the Cassia acreage in 1973, the bonanza was simply too great to remain commercially unutilised, especially since the company which found it, the then Amoco Trinidad Oil Co (ATOC) was ambivalent about what to do with it.

This was clearly illustrated by the flaring of the associated gas once Teak and, later, the Samaan and Poui, fields all became oil producers from 1972 onwards, a situation that incensed energy ministry officials.

The People's National Movement (PNM) government of the day probably had little choice in the matter, unless it were prepared to ignore the monetisation of such a valuable natural resource, which it clearly was not.

Dr Kermit Walrond, who rose through the ranks to become ATOC's most senior manager from Trinidad and Tobago, recalls today that "the company, at the time, had no market for gas. The only thing we used gas for in the early days was to help lift oil. As oilfields mature, the amount of gas they produce with each barrel of oil tends to rise exponentially, so within a matter of years, we were producing a lot of gas and had to flare it offshore."

Under the company's exploration and production (E&P) licence, any associated gas technically belonged to the State and Walrond recalls that "the government would say to me, why am I flaring all that gas and I would reply,

its not my gas, its yours – you are flaring it."

It was not until 1981, nine years after ATOC first started producing oil from the Teak field, that the government finally reclaimed "its" gas and established a gas compression system near the Teak and Poui production facilities to boost up the 250 pounds per square inch (PSI) low-pressure associated gas for use in the power stations then owned by the Trinidad and Tobago Electricity Commission (T&TEC). These stations were many years later hived off to a generation company, called PowerGen, in which T&TEC continues to be the 51 per cent majority shareholder.

ATOC's lack of interest in gas was reflected in the reception Dr Walrond received during his meetings with the company's top managers in Port of Spain. "When an exploratory well found gas and I'd go into Port of Spain to view the discovery I would get chastised for finding gas when we were an oil company," he remembers, ruefully.

So the government really had to take the matter of gas monetisation into its own hands and instructed the State-owned National Gas Company (NGC), which it formed in 1975, to not only capture, and utilise, the associated gas in power generation but to spearhead the development of a whole new gas-based heavy industrial sector, to be sited at the Point Lisas estate on Trinidad's west coast, to which the gas would be transported via undersea and overland pipelines. The blueprint was the work of technocrats at the state agency, the Industrial Development

Corporation (IDC), who had drawn up a programme that, in the words of Trinidad and Tobago's late first Prime Minister, Dr Eric E. Williams, would enable the Caribbean twin-island state to "enter the world of steel, aluminium, methanol, fertilisers and petrochemicals by using our gas resources in a very definitive industrialisation process."

As a former NGC President, Frank Look Kin, recalls: "The government moved to negotiate a contract with



Indar Maharaj
President, NGC

Amoco for a large amount of gas and at a price that would attract the investors we wanted. At the time, there were only two gas-based plants – Federation Chemicals (FedChem) and Trinidad Nitrogen One (Tringen 1), both ammonia producers. The rest were not on the horizon yet so we had to try and get the gas first and try to project what sort of gas demand we would have and at what rate gas demand would grow. There were a lot of unknowns and uncertainties we were playing with.”

Getting the gas from offshore to Trinidad’s west coast was a challenge in itself. Amoco initially had to use its own pipelines to transport the gas to shore, though these were built for oil and required a two-phase flow, whereby oil and gas were sent in batches, as Mr Look Kin recalls. “But this was not a very robust way of doing business and there were safety problems as well.”

On land, old oil lines had to be converted to gas.

If the gas-based industries were to flourish, it was

clear that dedicated gas lines would be required and the first gas-only line on land was commissioned in 1977 – the 24-inch line from Beachfield, Mayaro, on the south east coast, where Amoco had its onshore terminal. The following year, NGC built its own first offshore line, also 24 inches in diameter, which ran from the Teak field, via the Poui field, to shore.

“Once we had those two lines,” Look Kin observes, “NGC then had its own pipeline network that went from the gas fields offshore to land.” Other pipelines followed, as needed.

Today, NGC’s pipeline network runs for 1,000 km underwater and across country and can deliver as much as 4.4 billion cubic feet a day (bn cfd) up to the Beachfield facility on the south east coast.

Separate pipelines are used to deliver gas to Atlantic’s four trains at Point Fortin, in the south west corner of Trinidad, the most recent of which was the US\$268 million, 56-inch, 76 km cross island pipeline (CIP) – the biggest in the western hemisphere at ►

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NGC’s Liquid Fuels Pipeline System will supply gasoline, diesel and jet fuel, thereby increasing the efficiency of transporting these products throughout the country

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► the time – specifically for the needs of Train 4, which has a nameplate capacity of 800 million cubic feet daily (mmcf). NGC itself project-managed this job and the line can deliver up to 2.4 bn cfd without compression and 3.6 bn cfd with it.

The State company's ability to undertake world record gas pipeline projects is only one of the many accomplishments of this extraordinary company: it is also the most successful state-owned entity in the Caribbean, with an after-tax profit of as much as TT\$6.5 billion in 2013 – the highest in its history – and assets of TT\$43 billion.

NGC has unquestionably fulfilled the primary mission given to it in 1975 – to bring gas to shore from the gas producing companies operating off the east coast in particular and encouraging investors to use it to develop a gas-based heavy industrial sector – the first of its kind in the Caribbean and Central America.

It's success in this regard can be judged by the fact that Trinidad and Tobago now boasts 7 methanol plants, eleven ammonia plants, one ammonia/urea/melamine complex with another to follow, one urea plant, 4 steel plants, 4 liquefied natural gas (LNG) trains with a fifth smaller one planned, 5 power generation plants, one gas liquids extraction plant, gas-fired air-conditioning systems, compressed natural gas facilities for motor vehicles (about 5,000 of them), and a gas pipeline to Barbados in due course, in which NGC holds a 10 per cent share.

NGC has utilised a combination of attractive base gas pricing and upside arrangements to capture some of the increase in prices for the methanol and ammonia into which most of its gas goes (gas for LNG is a matter between the producers and Atlantic) in a way that no private company would have contemplated. The commodity pricing mechanism (CPM) allowed the petrochemical companies to stay in business even when methanol and ammonia prices fell, in strong contrast to North America, where several had been forced to close down over the years. At such times, NGC has also protected itself through its arrangement with the gas producers to reduce their own prices for the gas they provide to the company.

NGC has also over the years played a direct role in gas-related investments the government wanted to expedite and could not wait on private capital to take the lead. Among these were the 51 per cent share it took in Phoenix Park Gas Processors Ltd (PPGPL), the gas liquids extractor which it has just increased to 90 per cent by buying out the 39 per cent share held by ConocoPhillips and its 83 per cent interest in the La Brea Industrial Development Company (LABIDCO), whose estate houses the fabrication yard, established specifically to enable Trinidad and Tobago to enter the offshore gas platform construction business.

NGC's wholly-owned subsidiary, the National Energy Corporation (recently rebranded as National Energy), is today the entity that focusses on industrial site development (the Union estate near LABIDCO was its latest venture in this regard) and on attracting investors in gas-based industry, while NGC itself continues to do the deals with gas suppliers and run the pipeline system.

Its most recent extension of its pipeline system was its US\$533 million, 36-inch North East Offshore (NEO) line to bring gas from the BHP Billiton-operated field in block 2c, the northernmost supply source, down to the south to link up with the 36-inch BUD line to shore.

And a major move, with far-reaching implications for the future development of Tobago, is the 120 million cubic feet a day (mmcf), US\$164 million 12-inch line from block 2c to the Cove Eco-Industrial Estate, which provides the island with its first-ever source of natural gas through an onshore receiving station that will also facilitate the onward transmission of gas to Barbados through the Eastern Caribbean Gas Pipeline.

Since 2012, NGC has had a new President, chemical engineer Indar Maharaj, who succeeded Andrew McIntosh, who himself took over from Frank Look Kin.

Mr Maharaj has assumed office at a time when NGC has received an additional and potentially far-reaching, mandate from Minister of Energy and

Energy Affairs, Kevin Ramnarine, which is that the company must spearhead the internationalisation, from the public sector perspective, of the country's energy sector.

"NGC must be the vehicle for growth, through which Trinidad and Tobago can expand its footprint both at home and abroad," insists the minister, adding: "The idea that NGC should be confined to the borders of Trinidad and Tobago is one that has been totally dismissed by this Minister of Energy."

Another manifestation of its expansion at home has been its major move upstream in acquiring the shares that France's total had in both 2c (30 per cent) and 3a (8.5 per cent), respectively. It has also taken charge of the marketing of 30 mmcf of the 88 mmcf of LNG to which it lays claim by virtue of its 11.1 per cent holding in Atlantic's Train 4. It has succeeded in selling cargoes to the likes of Gunvor, Petrobras and Trafigura and at prices it says are several times higher than those it previously received when BP Gas Marketing was doing the job on its behalf.

The share in the Eastern Caribbean Gas Pipeline Company (ECGPC), which will transmit gas to Barbados in the first instance, is another example of NGC "moving beyond the borders of Trinidad and Tobago."

But both Minister Ramnarine and President Maharaj harbour much grander visions than that.

The latter is also looking seriously at East Africa, "where a 130-mile multi-

product pipeline is to be built between Uganda and Kenya. We are going to put in a bid for that. It's all about establishing a presence in East Africa."

Nearer to home, NGC is also examining the chance of 'establishing a presence' in such Central American countries as Panama and Costa Rica, both of which are hungry for gas.

Perhaps the most ambitious of all is an investment in the shale gas sector in the US. "There are a lot of pipelines to be built to carry shale gas and there may be a construction project we can get involved in," Maharaj says.

He puts it this way: "A lot of us have heard of shale gas and some people get very frightened. But we say there is an opportunity there. What stops us getting into that play? If there is an opportunity there, why fight it?"

Mr Maharaj unequivocally declares "NGC will become an increasingly important player in the global energy sector." ■

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NGC's Beachfield Slug Catcher, a major centralised natural gas and condensate processing facility with a design throughput capacity of 3 bcf and production capacity of 5,000 barrels of condensate