Trinidad & Tobago

A Special Report From *Oil and Gas Investor* and Global Business Reports

Reinventing itself

Trinidad and Tobago is one of the oldest producers of oil in the world, but the time has come to reinvent its industry.

> "**They call me Mr Fete,** *since I born I never miss one yet.'*
>
> *–Machel Montano*

Perhaps there is no better way to describe Trinidad and Tobago's presence in the 'fete' that is the oil and gas industry than by using the words of the country's most famous soca singer; since it was born, the country has been a constant player in global energy markets. In fact, Trinidad and Tobago celebrated 100 years of commercial oil production in 2008, a feat achieved long before the country gained its independence from Great Britain in 1962. Trinidad and Tobago has been a presence in the world of hydrocarbons since its inception; indeed, it has not missed out yet.

To an outsider, life in Trinidad and Tobago may well seem like one never-ending fete; Trinbagonians enjoy 'liming' at any and every opportunity they get—'liming' is a British-inspired term of unclear origins today used to describe essentially any form of social gathering. In such a diverse country, opportunities to lime are never hard to come by. From the more family- and food-oriented festivals of Eid and Diwali to the official three-month Christmas season before the country's world-famous Carnival, a good celebration is never too far away. As intrinsic to Trinidadian culture as celebrating is, so is its oil and gas sector.

Overview: Current Operations

Claims as to where the first successful oil well was drilled are disputed, with Philadelphia and Trinidad and Tobago vying for the honor. Regardless, the first successful oil well drilled in the country (and possibly the world) was in La Brea in 1857. Since then, the industry has come a long way, peaking at a total oil production of 240,000 barrels of oil per day (bopd) in 1978. The country's offshore production is dominated by a few of the industry's bigger players; BP, formerly Amoco, has seen Trinidad and Tobago become its biggest hub, while BG, BHP, EOG and Repsol all have significant offshore operations as well.

In tandem with these bigger players, Trinidad and Tobago's fields have provided the ideal space for juniors to operate, with companies such as Canada's Niko Resources being the largest landowners in the country. The most recent deepwater bidding round drew attention from an even wider array of locations including China, Azerbaijan, Israel and Saudi Arabia. UK-based Centrica Energy purchased PetroCanda's Trinidadian assets in August of 2010 and has already seen the country become a promising prospect for future development.

From its peak production in 1978, Trinidad and Tobago's 2011 average in crude oil production was just over 90,000 bopd and the energy sector's contribution to Trinidad and Tobago's energy sector was just under 45%, down from a high of 50% in 2006. While crude oil production has decreased significantly over the past few decades, Trinidad and Tobago's daily natural gas production has nearly tripled, going from 1.5 bcf per day in 2001 to just over 4 bcf today, signaling a shift from an oil-based economy to a natural gas-based economy, a change which has been developing for quite some time now. With proven non-associated natural gas reserves at 13.4 tcf in comparison to a 3P total of just under 30 tcf in 2011, even with a downturn in production, Trinidad and Tobago's gas reserves hold significant promise. Where oil was the mainstay of the country's production for the better part of its history, today the natural gas-based sector is the fashionable commodity.

The country's first, oldest, and now only refinery at Point-a-Pierre has been in operation since the 1930s and is today operated by the national oil company, Petroleum Co. of Trinidad and Tobago Ltd., more commonly known as Petrotrin. In the face of falling output, the Petrotrin refinery's output has remained more or less stable in the last ten years; the government-owned company has traditionally imported crude oil for refining and further sales given its capacity of approximately 150,000 bpd, which is currently greater than the national output. Plans to engage in a Clean Fuels Program and increase the efficiency of the refinery and to explore bunkering opportunities at the Panama Canal reflect optimistic growth plans for Petrotrin and indeed signal a hopeful outlook for the industry.

Kamala Bhoolai, Energy Consultant, Mair and Company

"Houston's Secret"

Trinidad and Tobago's proximity to and close trade relationship with the U.S. has earned it the designation "Houston's Secret." Where in the earlier part of the 20th century, the country accounted for over 30% of Britain's oil production, more recently Trinidad and Tobago's chief business partner is the world's chief consumer of energy, the U.S.. With the majority of its exports going to its northerly neighbor and the remainder going to a handful of Far Eastern and Caribbean countries, it is no surprise that Trinidad and Tobago had fallen somewhat below the global radar.

With a steady, high-demand market mere hours away, Trinidad and Tobago quickly became the Caribbean's most prosperous nation with a GDP per capita of $26,000; around 40% of this GDP is provided by the hydrocarbons sector. Unlike its island neighbours, Trinidad and Tobago has not seen the need to develop a tourism industry and, in the face of consistent oil growth, has not taken advantage of its climate and fertile lands to maintain or revive its once-vibrant agricultural industry. The country's infrastructure, though significantly better than most other Carribean Community (CARICOM) nations, seems to be lacking the organization and efficiency that one might argue a country with billions in annual oil and gas revenues should have. Like so many resource-rich developing nations, most of its other industries are only in their infancy in comparison to the energy sector.

Still, one hesitates to label Trinidad and Tobago as a victim of "Dutch Disease." Although only 50 years old, it is one of the more stable oil and gas jurisdictions today and holds great potential for continued development. As Kamala Bhoolai, Energy Consultant to local law firm Mair and Company, puts it, Trinidad and Tobago's investment environment is "attractive, because we have a well-established legal system, a democratic government, solid infrastructure, a highly educated workforce, a liberalized currency regime and a strategic location." Ms Bhoolai has worked on structuring Production sharing contracts (PSCs) in Southern Africa and South Asia and finds the regulatory framework of Trindad and Tobago to be notably more favorable in comparison.

If the vibrant downstream petrochemicals industry is seen as a separate industry to the upstream oil and gas sector, then certainly Trinidad and Tobago's economy is successfully diverse. Unfortunately, the two are so closely intertwined, this is a near impossible distinction to make. Even so, there is widespread agreement both within and outside the industry that other avenues of economic development need to be pursued. The question to ask about Trinidad and Tobago, then, is not whether it suffers from Dutch Disease but whether the nation has become too dependent on its energy sector and on the heels of its remarkable successes, too complacent in its continued development.

It is an exciting time to be examining Trinidad and Tobago's oil and gas sector, as the country looks to diversifying its economy, both beyond the energy sector and within it. Diversification of the economy, however, must include a diversification within the energy sector. Trinity Exploration and Production CEO Joel Pemberton reminds us that the idea of "Trinidadian investment" does not—and should not—only mean creating the right environment for investment in the country. While Trinbagonians have long been known throughout the world for their expertise and knowledge in the industry, the abundance of successful service companies and models for industrial integration that exist in Trinidad and Tobago could potentially prove highly successful around the world.

The country ranks very low in the World Bank's 'Ease of Doing Business' survey and despite its political stability, needs to make itself more competitive to more relevant markets than just North America. In a word, what is required is reinvention. Reinvention will be key to recovering from a downturn that has plagued the market for the past two years, it will be key to developing further what already exists in the country and attracting increased investment from abroad, and it will be key in ensuring Trinidad and Tobago's place as a global—not just regional—hub for the oil and gas industry. In order to continue taking advantage of its significant remaining resources, Trinidad and Tobago needs to reinvent its energy sector, both from within and on the outside. ■

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Kevin Ramnarine, Minister for Energy and Energy Affairs

Speaks to GBR about his plans to reinvent the sector durıng the third year into his mandate.

Results of the latest deepwater bid round are being announced this week. This round saw considerably more success than past ones; in this context, could you elaborate on the changes in the structure of these biddings rounds compared to previous rounds?
We made a number of changes to the fiscal regime for this bidding round. First, we increased the rate of cost recovery to 80 % (the recovery rate was 60 % in prior rounds). Second, we repurposed all the 3D seismic data that we held for deep water. Third, we marketed the bidding rounds very differently, attending many international conferences. We also presented a smaller number of blocks—only 6 blocks as compared to 11 deepwater blocks in previous rounds. Another factor was the opening up of the Guyana basin, which contributed to greater prospects for Trinidad. Finally, many companies have now realized Trinidad is a good place to do business, due to our stable political situation and ability to speak English. Companies like BP have had a good experience in Trinidad over the last 50 years.

Senator the Honourable Kevin C Ramnarine, Minister For Energy and Energy Affairs

What levels of interest are you expecting to see from foreign companies in next year's bidding rounds?
I do not believe Trinidad's fiscal regime is competitive enough—we still need to come up to par with Colombia, Brazil and West Africa. Early next year a government committee will conduct a comprehensive reform of the fiscal regime for the energy sector. There will also be a land-based bid round launched in January, spearheaded by Petrotrin and supported by the Ministry of Energy. We went on a road show in Calgary to promote this bid round, because we believe smaller companies are the best fit for land in Trinidad. In March 2013, we want to launch another deep water round with 6 new blocks, and three companies have already shown interest. Deep water is still in the exploration phase. Exploration took place on our continental slope in 2002, which proved the existence of a working hydrocarbons system but did not find commercial quantities of oil and natural gas. However, things will have changed a lot since 2002 and the technology has taken new leaps. With a new fiscal regime, new technology, and greater processing, we believe Trinidad's deep water holds great potential.

Regarding the overhaul of the fiscal regime, what needs to change in order to make Trinidad more competitive?
The fiscal regime cannot be considered solely as a mechanism to collect money; it must meet the objectives of the country, for example through fashioning the fiscal regime around CSR or local content. Many global reports have ranked Trinidad in the top quartile in terms of highest government take in the world. I would like Trinidad to be competitive but still have a fair return to the state. Moving forward, we will be reexamining taxation, production sharing agreements, etc, to see how we can best reach that balance. Production sharing contracts have evolved significantly in Trinidad; in the 1970s, the government take was based on level of production, and in the 1990s we introduced a matrix based on production level and price. Today, we also need to consider costs—costs in the industry began to increase dramatically around 2005, concurrently with the demand for steel in China. Costs are a major factor with regard to the competitiveness of the environment. The costs to produce natural gas are the same as to the costs to produce a barrel of oil, but gas is much less valuable; Trinidad of course has become predominately a gas-based economy.

With the recent shale gas discoveries in the US, there have been moves to diversify Trinidad's export markets. Which international destinations have become attractive to Trinidad?
In 2009, 80 % of our gas was being exported to the U.S.

Today, we export about 19 % of our gas to the U.S. as LNG, and the remainder goes mainly to Latin America, including Chile and Argentina. We also send cargoes into Europe and Asia, where prices are sometimes three to six times higher than in North America. We believe demand for LNG will always outstrip supply, and our cargoes will continue to find a buyer on the global market.

Examining the pioneering NGC model, how do you think the structure might change, making sure that the supply is guaranteed for a fair amount of risk?
The NGC model has worked very well since its inception in 1975, and has made the NGC the most valuable company in the Caribbean with assets close to 6 billion USD, healthy profits and constant dividends. I have questioned the relevance of the NGC model moving forward, as it was premised on a world in which the U.S. was in decline with regard to gas. We are reconsidering the model by which the NGC acts as the sole monopoly on natural gas. Deviation away from this model has already begun—there are a couple of hybrid (or back-to-back) contracts, where the customer has a direct relationship with the upstream supplier. A big policy question for 2013 is how the NGC can mitigate movements between the increasing cost of buying natural gas, while companies on the Estate continue to demand lower prices.

What models have you looked at for the future role of the NGC?
The NGC will continue to be a pipeline operator, as well as a buyer and seller of natural gas due to the long-term nature of contracts. However, a third dimension would be for the NGC to go global. Growth can no longer be guaranteed on our current model. We expect growth to take place through acquisitions—the NGC is a cash-rich company, and we are looking at several acquisition prospects within and outside of Trinidad, including in West Africa. The company has also started to market its own LNG, and we are also looking at marketing Petrotrin's cargoes as well. We may see the emergence of an LNG marketing company that is jointly owned by Petrotrin and by the NGC.

We have also seen a move towards local infrastructure, including the Eastern Caribbean pipeline and smaller CNG projects. What would the impact of these projects be for Trinidad?
These projects are all very small—the gas fill project is a small scale LNG project that would not require more than 70 million standard cubic feet of gas. The LNG market in the first decade of the 21st century focused on size—larger ships and trains—whereas now there is an emerging market for smaller countries that need smaller ships and trains. Small countries have both market and geographical constraints. There is also a CNG project plan for Trinidad and Tobago, which is centered on Centrica's development of block 22. The CNG facilities will supply CNG to consumers in the Caribbean, and most likely a significant amount of the gas will go to Puerto Rico. In the last 6-7 years, all the islands in the Caribbean have paid a lot of attention to balance of payments with regard to the cost of purchasing oil for power generation and transportation. All the islands in the Caribbean use fuel-oil fired or diesel-fired power stations, which are both more expensive and less clean than gas. There is a desire in the Caribbean to convert to natural gas fired power. It has happened in the Dominican Republic and in Puerto Rico, but it has not yet happened in the rest of the English-speaking Caribbean. The only supply in close proximity to many of the Caribbean countries is Trinidad, because Venezuela has not developed a gas export industry yet. The supply side is also beginning take hold in Trinidad.

Regionally, Colombia provides an interesting model for Trinidad and Tobago to observe in the development of its energy sector. What lessons do you believe Trinidad can learn from Colombia?
Colombia has democratized their oil industry, and made it available to smaller operators. These small operators are nimble and have smaller overheads. Another aspect is the refining industry. In the past two years, two refineries have closed in the region, including the Valero Aruba Refinery and the Hovensa refinery in the U.S. Virgin islands. This leaves us with the Petrotrin refinery and refineries in Venezuela, the latter of which have issues with maintenance and accidents. No new refining capacity is coming onstream anywhere in the Americas, with the exception of Brazil. In the next 5-10 years there will be a bottleneck with regard to refining capacity in this region, and this is where Trinidad can play an important role thanks to its strategic location. The National Energy Corporation (NEC) will be expressing interest for a new refinery in Trinidad.

Trinidad is at a crossroads at the moment, and in many areas of the sector there is a need for reinvention. Could you elaborate on this?
The sector needs to be reinvented both from the point of view of the oil industry and preparing the gas industry for this new world. We have to change the way we do business in Trinidad.

How has political stability facilitated successful projects in Trinidad?
Regarding political stability, the largest investment in the history of the Caribbean is Atlantic LNG—it has over 5 billion USD worth of foreign investment coming into Trinidad. That project spanned the period 1995 to 2006, during which we had three different governments in Trinidad. This project remains the lowest cost per ton of LNG in the world today, which has made Trinidad very competitive in global markets.

As you begin your third year as Minister, what would you like your legacy to be in the oil and gas industry in Trinidad and Tobago?
I would like to reinvent the entire energy sector, which includes the oil industry, deepwater exploration and the downstream industry. Furthermore, I am pushing for the internationalization of Trinidad's energy sector, using the NGC as a vehicle to take the Trinidad and Tobago name abroad.

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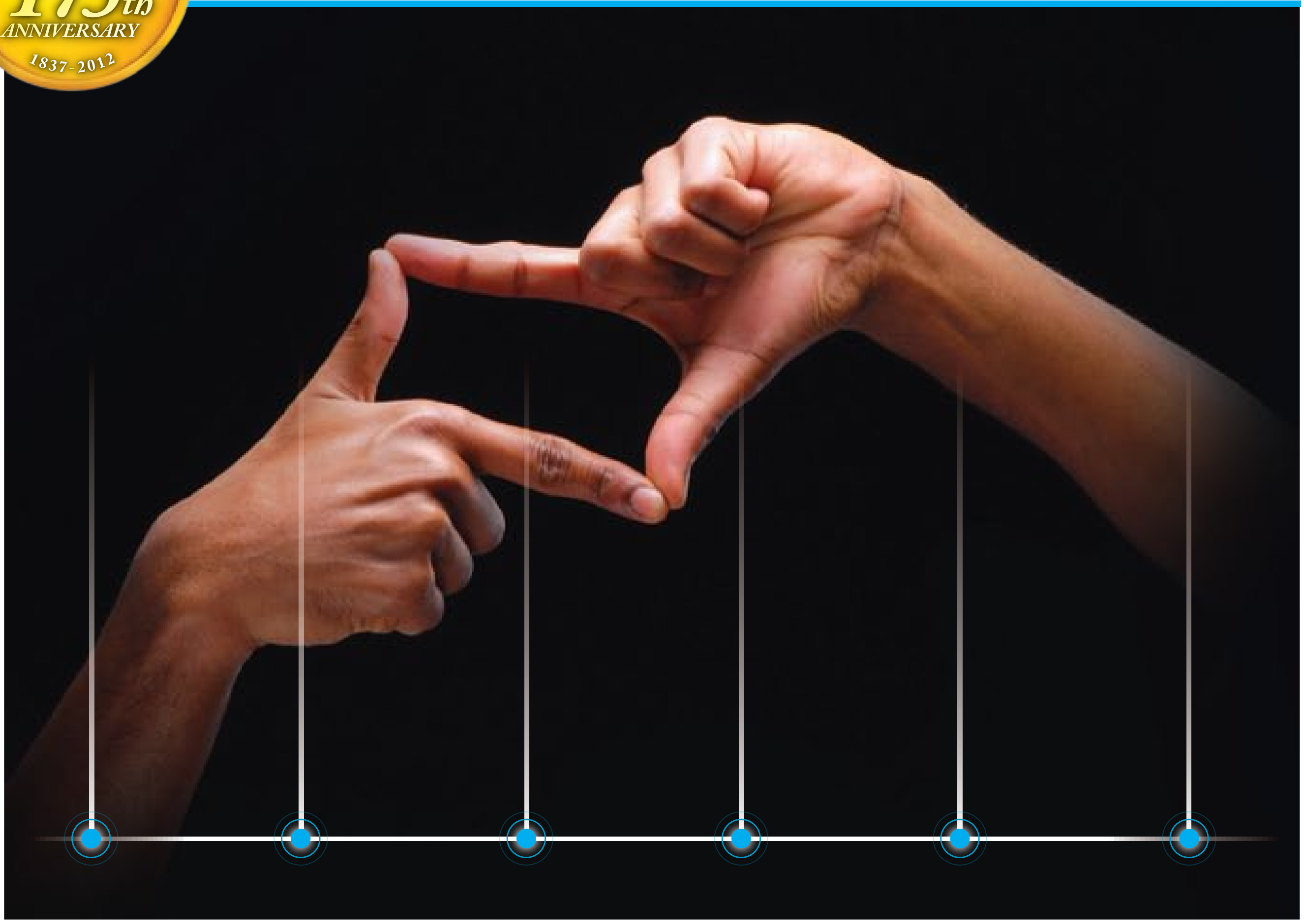

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Reinvention from Within: On The Island(s)

Trinidad and Tobago has realized that the time has come to look again at the processes and practices of its energy industry and to adapt modern methods.

Unlike nearby Colombia, Trinidad and Tobago is not experiencing a flurry of activity for the first time. In fact, it is experiencing a downturn in activity after 100 years of mostly stable production. Though the nature of the energy sector is often cyclical, the reasons behind this slowdown in production are not simply due to changing headwinds in the global economy. As such, it is important to take a look at the sector and its challenges as they stand currently to understand how reinvention can be achieved from within. The country has no shortage of long-term players of all sizes who can provide an accurate commentary of the issues holding the industry back and how these have been addressed over the years.

Health & Safety Standards

Examining the timeline of Trinidad and Tobago's production, 2009 was one of the better years in recent history before output numbers decreased significantly. The second quarter of 2010 saw BP experience the Macondo blowout at its Deepwater Horizon rig in the Gulf of Mexico, effectively putting the company's operations to a global halt. With BP Trinidad and Tobago (bpTT) being one of the company's highest-performing assets, the effect of a shutdown at bpTT was severe. As bpTT's Regional President Norman Christie observes: "Because of BP's contribution of 400,000 barrels of oil per day to Trinidad and Tobago's overall production, our reduced production has a very visible impact, but the situation has been exacerbated by similar work occurring across the sector at the moment."

BpTT's Immortelle Quality of Life Helideck Fabrication at Carillion's yard in Waterloo.

Following the Macondo disaster, Trinidad and Tobago entered into a maintenance season, with a number of producers on the island using the incident as a catalyst to examining their own integrity and carrying out repair work. This became one of the larger contributing factors to the downturn, with shutdowns occurring across many of the country's rigs. It must be remembered, however, that in any mature oil or gas industry, maintenance activity will occur eventually, causing a decrease in output for a period of time. The longevity of Trinidad and Tobago's industry means that it was, regardless, due for some revitalization. While this is to be expected, health and safety guidelines on the whole have not been clearly defined in Trinidad and Tobago until recently.

The North Sea is often taken as the golden standard for safety and integrity management in the oil and gas industry. Companies operating in Trinidad and Tobago are appreciative of the fact that safety levels have been improving over time. On discussing Trinidad and Tobago's standards, William Eyres, Tidewater Marine International's Area Manager for the Caribbean & Andean Region, says, "For the last 20 years, the industry as a whole has undergone a substantial shift in focus to reducing the number of injuries in the workplace which, in the past, were accepted with a certain level of machismo and fatalism. The industry has stepped up to curb this and injuries have dropped significantly, which goes to show the improving standards that govern our work."

Trinidad and Tobago was one of Tidewater's first international locations outside of the U.S. 40 years ago, and though it is one of their smallest offices, the strong currents coming up from the Orinoco Delta require some of the company's most advanced positioning vessels to support offshore activity on Trinidad's east coast.

One of the main initiatives of the Energy Chamber—the energy sector's representative organization—is the creation of uniform health and safety conditions and competency certification standards. Commenting on the purpose of the Safe To Work (STOW) certification, Chamber CEO Dr. Dax Driver explained, "local companies have to meet certain specifications to work with multinationals, so we decided to make one clear and transparent standard across the industry."

Roger Packer, the Chamber's current President, adds, "We are very adamant that multinationals meet the standards as well, which are in fact a step above international standards." The Chamber has come a long way towards achieving its goals; companies from across the industry agree that standards in the country are of the highest order, often surpassing those required by multinationals across their global operations.

As integrity works are performed, however, many in the sector also question the viability and success of the STOW certifications. Gerard Stauble, CFO and Director of Trinidadian-owned H.J. Stauble Ltd., remarks, "it has been a long process to develop STOW and it definitely has a future, but at the moment it has not achieved the efficiency we had hoped for. For the time being, it has made everyone more aware and committed to safety and created a minimum set of standards for the industry to abide by, which is definitely something we needed."

H.J. Stauble, a family-run fabrication and maintenance company with a 47-year history in the industry, represents Canadian firm Superior Machine Shop and Engineering Works on the island. As their business has evolved to suit the needs and requirements of the industry, Stauble remains skeptical on the effectiveness of STOW thus far. "In theory, STOW should be more efficient and cost-effective, but it is not. Every plant and every company has their own requirements for which we have to orient workers and, like STOW, these requirements have to be recertified at frequent intervals […] STOW will have achieved its true goal when it has been more fully harmonized with the standards that exist across companies."

Stauble is one of many in the industry who applaud the Chamber's intentions but worry that it creates another level of qualification and bureaucracy without truly creating a new and uniform higher standard of health, safety and competence practices. Both the level of standards and the independent body inspecting and implementing them must be clearly established before STOW can bring Trinidad and Tobago on par with the North Sea. On the other hand, Gilberto Ordoñez, Managing Director of the partnership between a local conglomerate and multinational-engineering-company Neal & Massy Wood Group Ltd. points out that "the biggest trend we are seeing is operators wanting to put their money where their mouth is; we are all willing to talk about safety, but implementation is the crucial aspect. Operators are no longer willing to produce if there is a risk to their people, the environment, or to their facility."

The awareness of safety requirements has certainly increased, but the added certification must progress beyond its status as "red tape" to a more integral part of the industry. Currently many companies still see the need to call for additional requirements beyond those in the STOW certification. As more companies look to establish a presence in Trinidad and Tobago, they are assessing the amount of time and expense involved in meeting the country's standards, and whether this is a worthwhile investment. More uniform regulations implemented by an independent body

Gilberto Ordoñez, Managing Director, Neal & Massy Wood Group

and in line with the highest of multinational expectations must be put into place if the added requirement of STOW is to be seen as a benefit rather than an impediment.

Environmental Standards

Trinidad and Tobago is the fifth highest emitter of CO_2 per capita in the world. The country's oil and gas industry has existed for twice as long as the independent nation itself has, resulting in standards governing the sector evolving in response to its growth rather than in anticipation of it. While most companies operating in Trinidad and Tobago have their own global policies on environmental and community relations, one of the seemingly more frustrating aspects of this industry is the lack of clear guidelines dictating official standard operating procedures for safety, environmental, and human resource departments. Where Trinidad and Tobago was once an attractive operating environment for companies wishing to escape the bureaucracy of more developed oil and gas jurisdictions, a number of organizations touting the causes of environment, health and safety have made operators' obligations equally present here without any laws to guide them. In no area is this more visible than that of the environment.

Just as the North Sea is seen as a model of health and safety regulation, so too is it seen as one for environmental regulations. Nazeer Gopaul and Frank Teelucksingh, founders of and directors at marine environmental consulting firm Coastal Dynamics Ltd., believe that as much importance needs to be placed on emulating North Sea environmental standards as it does on emulating fiscal and health and safety ones. "One of the main concerns is that companies are still being allowed to discharge waste offshore … the pressure is not on them to install a system that cleans the water," says Teelucksingh. Coastal Dynamics is the only locally-owned firm to provide numerical modeling in Trinidad and Tobago and since its founding in 1996, has seen immense growth both because of the level of service it provides and its fulfillment of local content requirements for multinationals.

North Sea regulations require safe disposal of cuttings and pooled resources to maintain monitoring of chemical levels in the water. Further to this, community relations are often strained, causing slowdowns in project development which could easily have been avoided. "There is a disconnect between the government, the industry, and the communities. The government receives money from the industry but the community does not see any of it. As a result, the communities feel left out of the development process and the companies feel they are unfairly targeted by communities," adds Gopaul. Companies like Coastal Dynamics, in providing consulting services, often become middlemen between communities, companies and the government, negotiating terms in a space where no official ones exist.

A common complaint is that too often companies have shaped standards which the government then follows, rather than the other way around. Discussing the evolution of environmental standards in Trinidad and Tobago Douglas de Freitas, President of Canada-based environmental consultancy Kaizen Environmental, voices the concern that companies have shaped standards which the government then follows, rather than the other way around. "The international risk and requirements for due diligence have changed [...] nowadays any of the major players has environmental and safety management programs that are quite clearly defined and listed in their public literature. As a result, they can and are held accountable to those processes. In most cases, they are quite stringent with the targets they place for themselves. Their standards have evolved over time and the country has kept up with them."

As local communities become more aware of the environment and the effect industries can have upon it, the government will need to dedicate more resources to developing its own set of rules and regulations to govern waste management and project development; local relations and CSR efforts become all the more challenging when companies are wholly accountable for their actions with no system against which to check their performance and impact.

Despite being one of the largest emitters of CO_2 per capita in the world, Trinidad and Tobago was one of the first countries in the world to sign up and ratify the aims of the Kyoto Protocol. One of the country's largest engineering firms, TOSL Engineering Limited, is taking the lead along with the Energy Chamber in developing the country's first Clean Development Mechanism (CDM) project for Petrotrin. If successful, the project will reduce carbon emissions equivalent to 80,000 cars per year by capturing, processing, compressing and feeding associated gas into gas pipelines. Says TOSL's CEO, Shazan Ali, "Trinidad and Tobago's previous governments have never really paid attention to emission rates; their main focus has always been

Douglas de Freitas, President of Kaizen Environmental maximizing the economic potential of hydrocarbons […] the government now is putting into place a low carbon development strategy."

Though projects and strategies such as this are but a small step in developing environmental standards across the industry, they are a step in the right direction.

The NGC Model: Renegotiating Terms

The Point Lisas Industrial Estate, Trinidad and Tobago's economic gem, was created in 1976 to absorb and monetize the excess supply of natural gas that was, until then, being flared. The estate—a fully integrated petrochemical complex—is now home to 90 companies, including the largest methanol plant in the world which, along with five additional plants, produces 13% of global methanol output. The National Gas Co. of Trinidad and Tobago Ltd (NGC) was founded alongside this as an aggregator and distributor of feedstock provided by the upstream. The idea behind the NGC was to consolidate supply and provide guaranteed distribution to the various consumers at the ends of its 880-kilometer network of pipelines. The elimination, by and large, of individual contracts between upstream producers and downstream consumers created an efficient system of gas flow from which the estate was fed.

With the recent downturn in the country's oil and gas output, however, even the NGC model has failed to prevent a shortage in supply to Point Lisas' various petrochemical plants. As contracts are due for renewal in the coming years, suppliers question the pricing model and whether it is beneficial to them. "The model of supply from the NGC has historically worked well," says Eugene Tiah, President of Phoenix Park Gas Processors. "But with the current reduction in supply and maturity of the gas sector, the pros and cons of the model are now a subject for national discussion. Increasing efficiency and avoiding monopoly rates should be the goal."

Phoenix Park Gas Processors, a joint-venture partnership between the NGC NGL Co. Ltd. of Trinidad and Tobago, ConocoPhilips Inc. and Pan West Engineers and Constructors. This consortium of owners has allowed for a pooling of resources resulting in Phoenix Park becoming one of the largest processors of natural gas in the Americas.

Charles Percy, Managing Director and CEO of Methanex's Trinidad and Tobago operations, agrees with Garnett. "The face of the Trinidadian market is about to change completely," says Percy. "The government and the associations need to be nimble and wise enough to make the best decisions for the whole of the value chain." Methanex has recently made the decision to shut down its operations in Chile in favour of opening a methanol plant in the U.S., where cheaper gas prices and more favourable terms made it the more sensible location.

As if to counter this same skepticism in Trinidad and Tobago, industrial gas supplier Air Liquide's local Managing Director Garnett adds, "Both Trinidad and Tobago and the company have worked on mitigating risk through diversification … People are investing to build long-term plants, which indicates that there is a positive future for the industry as a whole." Garnett maintains that the country will

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- JSL's catering team has over 30 years' experience in the onshore and offshore industry;
- Our pricing model is based on the per Man per Day approach which is substantially cheaper than providing Manpower and Provision separately;
- JSL also supplies Provisions for Onshore and Offshore Installations

FOREIGN COMPANY'S ENTERING THE LOCAL MARKET

Has your Foreign Company recently been awarded a Contract in Trinidad?

JSL can provide you with the following services:

- Management Consultancy and Entry Strategy for Trinidad
- Business Registration and Set-Up
- VAT and Tax Registrations
- Real Estate Services and Vehicle Rentals
- Work Permit and Immigration Services
- Payroll and Taxation Services
- Family Relocations
- Office Furniture
- Customs and Brokerage
- Industrial and Domestic Transportation

JSL -Your One Point of Contact for all your service requirements.

INTRANSIT RIG AND VESSELS

Does your company have an Intransit Rig or Vessel coming through Trinidad and require the following?

- Advice on the Location Offshore and Port of Entry
- Customs and Immigration Clearances
- Port Health Inspections
- Crew Changes
- Refueling
- Loading Cargo and Provisions

JSL can provide you with total project support. JSL guarantees safety, cost effectiveness and limited down time.

JSL has office establishments in Houston, Trinidad and Suriname and has supported contracts in over seven countries worldwide.

JSL currently provides Drilling, Marine and Catering Crews for the Offshore Drillship, the PetroSaudi Discoverer, Drilling and Catering Crews for the Offshore Drilling Rig, the Atwood Beacon contracted by Murphy Oil to drill in the Economic Zone of Suriname and Catering and Logistical support to the Semi-Submersible Drilling Rig, the Ensco 8503 contracted by Tullow Oil Limited to drill in the Economic Zone of French Guiana.

In Trinidad, we celebrate our recent wins of providing full Agency Services, Drilling and Catering Crews for both Offshore Drilling Rigs, the Offshore Vigilant contracted by BHP Billiton (Trinidad-2C) Limited and the West Jaya contracted by BP Trinidad and Tobago LLC.

Both our Offshore Manpower Supply Company and Offshore Catering Company operate within a unionized environment and we have executed Memoranda of Agreement with the Oilfield Workers Trade Union.

have to work on maintaining its competitive edge in such a rapidly changing economy. "There are major economic headwinds to overcome in this regard," says Garnett.

Traditionally, the price of gas through the NGC has been set according to the price of downstream commodities. Producers are finding that they can receive better prices for their output by shipping more product abroad. While the NGC model is one that can be continued moving forward, its structure and those of its contracts needs to change.

bpTT's Norman Christie suggests that this conversation "must revolve around providing sufficient incentive for the upstream players in this changed paradigm to continue to produce the resources whilst still allowing the ultimate recipients of the gas—the downstream or midstream producers—enough of a return for Trinidad to remain an attractive place to buy the gas."

Using the analogy of a pie in discussing the reinvention of the industry here, one of the key "slices" to be examined is that of the NGC. "NGC plays an important role in this as an aggregator, and so receives part of the rent. NGC's role in the future will be determined by how we decide this pie needs to be distributed to incentivize upstream players and ultimate off-takers." Upstream players and ultimate off-takers also includes a number of smaller companies operating in Trinidad and Tobago's fields using gas in their recovery methods. Mora Oil, one such player, fears that the NGC model does not cater to small businesses. Kirk La Borde, Offshore Installations Manager of Mora Oil Ventures Ltd., says, "For smaller producers, we need to foster a better working relationship with the NGC … they do not seem to take smaller operators seriously given the relatively small amounts of gas we purchase from them. As contributors to the oil and gas industry of Trinidad and Tobago, we should be treated with the same respect as the multinational companies are."

A good deal of the country's reservoirs fall under the radar of global majors; while BP and BG may find Trinidad to be of utmost importance to their network, juniors and smaller operators are finding opportunities in Trinidad and Tobago to be of the perfect risk and investment profile. These companies need to be encouraged and reassured that the industry can and will adjust to their presence as it becomes more relevant.

Onshore Opportunities: Shifting Focus

Recent years have seen proven reserves depleting in the face of no new exploration. While the government prepares to announce the results of the latest successful (and oversubscribed) deepwater bid round and gears up for several further editions in 2013, little attention has been paid to the potential of Trinidad's existing onshore fields. With an onshore bid round slated to take place early next year, the country need not wait until lengthy offshore exploration is carried out to see a resurgence in its production numbers; a spate of smaller players have had their eyes on opportunities provided by the state oil company's lease operatorship and farm-out programs in the onshore space.

Petrotrin believes that only 20% of the estimated 1.5 billion barrels initially in place on shore have been recov-

Neil Ritson, CEO, Leni Gas & Oil plc

Typical well (GY-200) on the Goudron Field

ered in Trinidad's 104-year production history. Granted an automatic stake in all exploration and production licenses issued in the country, the company has taken a renewed interest along with the Ministry to increase the current onshore production of just under 14,000 bopd. Since 2005, Petrotrin has been granting licenses to private operators to perform workover activities on idle wells. By the end of the 2005 fiscal year alone, 19.1 million barrels of oil were produced from these programs. With the market dominated by global players such as BP, BG, and EOG Resources, junior operators from across the globe are beginning to realize the underexplored niche market that awaits them.

The program allows for companies to revitalize the significant onshore acreage under Petrotrin's jurisdiction that it could not exploit on its own. Dwight Mahabir, Chairman of onshore producer-turned-contractor Damus Oil Ltd., says, "Onshore programs are critical for both employment reasons and for putting idle assets to work. The refinery processes about 160,000 bopd, of which only 55-60,000 are locally sourced, because the refinery cannot produce the very light oils from the east coast. Therefore, it has also been very important to reduce the costs of import." While Damus Oil Ltd. found the opportunities associated with onshore acreage to be numerous, it also found the associated risks to be unsuitable for the company and gave up its position as one of the key lease operators. The importance and viability of the program for other operators must not be forgotten in Trinidad and Tobago's reinvention.

Wilson Lalla, key architect of the Ministry of Energy and Energy Affairs (MEEA) for the upcoming onshore bid round, points out that, even with a successful deepwater bid round, it may be five to seven years before new and existing players move from exploration, through development and into production. "The need to take initiatives to arrest the decline and increase production is extremely important," says Lalla. "This is precisely why we are promoting the onshore bid round; it can have an immediate effect on production numbers. Being onshore and in the middle of production country, both the risk and the timeline for seeing results are significantly lowered."

Trinidad and Tobago has, for much of its history, employed various Enhanced Oil Recovery (EOR) techniques to maximize production. The continued use of EOR in rejuvenating the country's mature oilfields will also result in increased production almost immediately.

Leni Gas & Oil plc, an AIM-listed junior with assets in Spain, has just sold its operations in the Gulf of Mexico as a part of its strategy to bring increased focus to Trinidad and Tobago. In addition to the company's 1,900-acre Icacos Oilfield on the Cedros Peninsula, Leni has just acquired the underexplored Gourdon Oilfield in the island's southeast, which has an estimated production potential in the range of 1,000 to 4,000 bopd. Neil Ritson, Leni's CEO, sees the mix of already-producing wells and unexplored territory as a golden opportunity for publicly-listed, independent oil companies such as Leni, Range Resources and Trinity (with its newly-acquired Bayfield assets) to experience some healthy competition. Although these assets are situated in the middle of proven and producing fields, increased attention to deep-water exploration and production has left onshore infrastructure to fall behind. Insufficient rigs and service providers are a persistent impediment to companies looking to ramp up their onshore assets quickly.

Range Resources, a junior exploration and production company double listed on AIM and the ASX, has adopted a similar tactic to Leni Gas & Oil in making Trinidad and Tobago the center of its operations. Walter Cukavac, Range's Country Manager for Trinidad and Tobago, says, "Trinidad and Tobago provided an interesting option for Range mainly because there are different levels of projects with different levels of associated risk. Instead of simply offering exploration […] Trinidad offered turnkey opportunities that had existing production and infrastructure."

Cukavac and Leni's Ritson both agree that the country's onshore fields provide investors with an attractive mix of opportunities from across the value chain. The exploration required onshore would also mean several years before production can begin but, as Cukavac points out, the capital flow from wells that are already producing would eliminate any downtime—indeed a luxury in the exploration phase of this industry.

Geologically speaking, the onshore possibilities by and large run along the same trends that feed Trinidad's massive offshore wells. One of Range's two main controlling areas falls along a series of anticlines on the Southern Range just off the island's south coast. A geologist by profession, Cukavac says, "there are over 200 oil seeps along the Southern Range anticline, […] and many of the structures have never actually been drilled onshore, so there are tremendous opportunities that have smaller reservoirs of 5 to 10 million barrels."

Both the government and the industry would do well to keep in mind the role that EOR can play in boosting the sector through other means. Dr Krishna Persad, one of Trinidad and Tobago's most senior geologists, argues that 90% of the oil recovered to date in Trinidad and Tobago is primary oil. "As much as 4 billion of the 12 billion barrels of oil remaining in the ground is economically recoverable at today's oil prices using carbon dioxide as the EOR mechanism," says Dr Persad. With 210,000 acres spread across two blocks just below the Herrera Field, 500 million barrels lie untouched in a low-risk setting ideal for more junior companies to occupy.


Walter Cukavac, Country Manager for Trinidad and Tobago, Range Resources

Doing Business: Reinventing The Fiscal Regime

Trinidad and Tobago ranks 69th in the World Bank's "Ease of Doing Business" survey, making it an extremely uncompetitive jurisdiction in which to operate for oil and gas companies. While its attractiveness as a resource-rich destination has kept the industry afloat until now, increasing capital and equipment mobility mean that investors and operators have significantly wider footprints. Companies can afford to be much more fickle in their decision making and with significant oil and natural gas finds in several locations around the world, Trinidad and Tobago can no longer rely on its convenient location and relatively cheap supply. In order to remain competitive, it is imperative that the government re-examine the fiscal regime that governs the oil and gas industry to ensure that current operators remain interested and potential players are attracted to the market. As Minister Ramnarine stated, reinvention of the industry is his main goal, and the financials governing the industry are at the top of the list.

The country has gone through a series of production sharing contracts (PSCs) which govern the relationship and tax structure between the government and the industry. Since the 1970s, the PSC has undergone several reincarnations and adjustments; the 1996 model was the most successful and Trinidad saw some of its best performance years ensue as a result. In 2006, the government of former Prime Minister Patrick Manning's revisited the PSC and created a new model which introduced less favourable terms for cost recovery. This slowed down interest in exploring Trinidad and Tobago's field any further, and subsequent bid rounds were largely unsuccessful as a result. Under Minister Kevin Ramnarine, this structure has been revisited and a new PSC has been put into place taking into account the shortcomings of previous models. The latest bid round was oversubscribed for five of the six blocks included, drawing attention from such varied parts of the world as Israel, Azerbaijan, and China. A series of bid rounds is scheduled for 2013 aimed at encouraging further exploration and given the continued interest being shown, indicators point towards the fiscal regime being on its way to recovery.

Ernst & Young's Gregory Hannays believes that the face of the industry would have been quite different were it not for the hiccup caused by the 2006 PSC revision. "The momentum which Trinidad and Tobago had from contracts signed between 1996 and 2006 should have continued quite nicely to keep our replacement ratios high," says Hannays. "The activity that is taking place today with the current bid rounds is really a natural progression of the run that Trinidad and Tobago had between 1996 and 2006."

Given the rising costs associated with the various parts of the industry value chain, Trinidad and Tobago will have to reconsider government take in profits to ensure a more balanced and reasonable environment for incoming and existing operators. ■

Rikhi Rampersad, Partner, Deloitte

Speaks to GBR about the steps Trinidad and Tobago must take to continue attracting foreign direct investment.

Deloitte is the youngest of the 'big four' in Trinidad and Tobago; what was the impetus behind entering the market?
Deloitte Trinidad began operating in early 2009 and has grown from a firm of four partners and 35 staff to six partners and nearly 100 staff. Deloitte Canada has just acquired a geological consultancy firm called AJM Petroleum Consultants, which they have rebranded as AJM Deloitte. We are looking at establishing a branch in Trinidad and Tobago to service the Caribbean cluster as well as South America. Although we are the youngest of the 'big four,' we have seen tremendous growth and remain confident in our growth potential here. Deloitte Trinidad is currently not seen as a player in the oil and gas consulting or advisory space, but we are hopeful that we will be able to carve out a niche for ourselves with the establishment of AJM Deloitte here.

How do you find the operating environment for companies in Trinidad and Tobago?
The operating environment in Trinidad and Tobago is definitely an issue. We ranked quite poorly in the World Bank's 'Ease of Doing Business' survey and need to fix that. The corruption perception needs to be corrected and a change in cultural mindset needs to occur to invite renewed investment in the country.


Photo courtesy of Range Resources

What needs to be done to improve Trinidad and Tobago's ranking in the World Bank's 'Ease of Doing Business' survey?
One of the biggest stumbling blocks for doing business here is the lack of automation and computerization; far too much paperwork still has to be completed on actual paper instead of digitally. The public sector as a whole needs a boost in its training and work ethic. Before we can push local content laws on foreign companies, we need to ensure that our local content undergoes a transformation that makes it competitive on a more global scale. We do have a very skilled workforce in the energy sector, but poor investment has slowed down the development of Trinidad and Tobago into a first world country.

It is a common complaint in the sector that access to finance is very difficult to come by locally. Foreign Direct Investment (FDI) accounts for a great deal of financing in the energy sector because, despite being liquid, banks are not willing to support the industry. Why is that?
Trinidad and Tobago is a very closed society that functions in large part on relationships. Banks are not willing to provide reasonable rates to projects and people they are not familiar with. As a result, many of the smaller players that could propel the country and sector forward have a difficult time breaking into this circle. The entire mindset needs to change and become more open before local banks would be willing to support the industry. Once that happens, local investment may surpass FDI.

Where do you hope to see the firm in a few years' time and how indicative would this be of the industry's potential?
We are placing a strong focus on getting AJM Deloitte established in the country, which will improve our perception in the oil and gas industry while adding to our staff and capabilities. Energy should become our number one priority in the next year and we hope to expand our team to include senior geologists and reservoir engineers. Essentially, we are working on driving our energy practice forward. This outlook is indicative of our thoughts on the industry's potential; there are some hurdles to its development and these do need to be overcome, but we are confident that this will happen. The government has been working towards improving the framework surrounding the energy sector for the past two years and we believe that this will become more apparent in the coming year. ■

Reinvention: On The Global Stage

No longer able to rely on consistent demand from the U.S, Trinidad and Tobago is looking to diversify its trading and business partners.

While individuals from Trinidad and Tobago are well-known globally, the Trinidad and Tobago 'name' has a much weaker recognition than Canada, the U.S., the United Kingdom or any of the world's other established producers. Of the spate of service and support companies—and even producers—present on the island, remarkably few have a footprint that spreads beyond the Caribbean. As global economic headwinds begin to change, Trinidad and Tobago's traditional advantages might be diminishing in importance, but the country still has several of them at its disposal that it can—and should—develop in order to maintain its industry and expand its recognition abroad. Desmond Roberts, CEO of Perfection Services Ltd., believes that several factors are in place for Trinidad and Tobago's energy sector to maintain interest both at home and abroad. "More so than the competitiveness, or lack thereof, the problem is not grasping the opportunities when they present themselves … things are lining up for Trinidad and Tobago to establish itself as a leader and hub in the Caribbean oil and gas industry; we just need to be sure to take advantage of this," says Roberts.

Perfection Services Ltd. provides offshore container accommodation units for most of Trinidad and Tobago's major operators and has seen an increase in business during maintenance season as clients upgrade the accommodations on their rigs.

Shifting Sands: Casting The LNG Export Net Wider

Necessity may, as the old English proverb suggests, be the mother of all invention, but shale gas finds in the U.S. may prove to be the unlikely mother of reinvention if Trinidad and Tobago is to learn from recent developments in North American gas markets. Only three years ago, approximately 75% of the country's LNG exports went to the U.S. This has plunged to less than 20% in 2012. Minister Ramnarine has even suggested that American imports of Trinidadian LNG could fall to zero in the coming years. Ernst and Young's Gregory Hannays says, "the hallmarks of the energy sector here—cheap gas and proximity to key markets—are no longer advantages found only in Trinidad and Tobago. As a result, it is absolutely vital that the industry reinvent itself."

The potential remaining for the country's assets even after more than 100 years of production is remarkable, and must not be overlooked. An estimated 1 billion barrels of oil remain onshore alone.

Diversification is a key feature of the country's reinvention, and it has already begun casting its export net wider to take into account shrinking demand in the U.S. and growing demand elsewhere. Research from Australian bank Macquarie suggests that LNG trading will rise by over four % per year between now and 2020. Trinidad and Tobago already exports 15 % of its gas to Asia, and continued growth across the region means that markets such as Korea and Japan will provide the majority of this increased demand for the foreseeable future. Demanding far higher LNG prices than the US, where shale gas discoveries have slashed prices in half on the Henry Hub index over the past four years, Asian markets will come to absorb a substantial shore of Trinidad and Tobago's gas at higher prices, and the widening of the Panama Canal will only serve to facilitate this avenue of great opportunity. Nigel Darlow, CEO of Atlantic—operator of one of the world's largest LNG trains—suggests that both his company's and their client's diversification to further markets has poised the industry to remain strong in coming years.

Roger Packer, President of the Energy Chamber and Managing Director of Tucker Energy Services, agrees with this outlook. "We have been able to change and move our shipments into different areas of the world. If you look at where our LNG shipments are going today, it will show you how we have really changed direction and been able to take advantage of better-priced markets," says Packer. Atlantic's Darlow also points to further key research

Nigel Darlow, CEO, Atlantic LNG

indicating global demand to increase to 425 million tonnes in the next ten years. "With the current global LNG network, supply in reservoirs is not being replaced by new finds; so not only is demand increasing and shifting, but we are seeing major changes in the markets from which the supply originates." Despite the gas shortfall that Trinidad and Tobago has experienced recently, once most upstream players complete their integrity programs, the outlook for the country is bright," says Darlow.

While markets in the Far East do hold enormous potential, Trinidad and Tobago's location holds several advantages in its proximity to South American markets as well; Minister Ramnarine sees Trinidad and Tobago as the Atlantic Basin's "LNG pioneer." Talks are underway to develop an LNG-export network within the Caribbean, both through a pipeline to Barbados and in medium-sized tankers shipping CNG throughout the region. Roland Fisher, CEO of Gasfin says, "We have been besieged by people in the region wanting a small-scale LNG receiving service." Gasfin, a Luxembourg-registered company specializing in mid-scale LNG infrastructure, has also identified Trinidad and Tobago as a potential supplier to nearby Caribbean islands. While American shale gas finds have thrown the traditional structure of Trinidad's gas markets into question, Minister Ramnarine believes that gas will replace oil as the fuel of the 21st century, creating a reinvented and diversified—but not diminished—space for Trinidad and Tobago on the global gas stage.

Roger Packer, President of the Energy Chamber and Managing Director of Tucker Energy Services

Point Lisas And The NGC: Models In High Demand

Each successive Trinidadian government has been accused of not fully understanding the previous one, leading to a series of disconnected policies and regimes that have hampered the development of the country's energy sector. If there are two projects, however, that are models of government and policy success, they are the Point Lisas Industrial Estate and the NGC. From contentious beginnings, Point Lisas has been the fundamental driving force in pushing the Caribbean island to becoming the world's leading producer and exporter of methanol and ammonia, allowing Trinidad to export value-added petrochemical production rather than raw commodities. In tandem with the estate, the NGC has been key in ensuring that the country's gas has been successfully captured, distributed and monetized in a centralized and efficient manner.

The MEEA and Energy Chamber have engaged in a number of trade missions recently to discuss the demand for these two models in a variety of markets. Desmond Roberts of Perfection Services Ltd. says, "The vein coming in from West Africa to French Guyana and Suriname continues into our waters and looks to provide some promising finds." Following this vein to its origins, West African markets have been developing their own vibrant energy sectors and have been looking westwards for help in setting up efficient models to drive their economies.

Yara Tringen, Trinidad and Tobago's largest producer of ammonia has been in existence since before the

The Point Lisas Estate in Couva has been a major engine of Trinidad's growth since its establishment in 1976

Point Lisas estate was created. Yara's President, Richard de la Bastide, says "there are several advantages to the Point Lisas Industrial Estate beyond just concentrating several companies in one geographical area. Local contractors have been able to develop and gain experience from a variety of companies involved in one wider industry." The synergy that Point Lisas has encouraged has allowed for a more in depth development of Trinidad and Tobago's downstream sector while providing substantial employment in the area around Couva, where the estate is based. "By creating an industry-focused estate, a number of job opportunities were created which may not have arisen in a more diluted setting," remarks de la Bastide, speaking to what might be one of Point Lisas' greatest strengths.

Today, the NGC has an asset base of over US$4 billion, making it one of the Caribbean's most lucrative enterprises. This model, along with the industrial estate setup to create a domestic value chain, is more or less a pioneering effort by the Trinidadian government and has seen remarkable success. Emerging oil and gas economies in West Africa and beyond would benefit immensely from this shared knowledge. Both companies have, hand in hand, allowed for Trinidadian business to flourish through the thorough utilization and processing of the country's resources.

Production, Service And Support: Expanding The Value Chain & Taking It Abroad

As lucrative and successful as the industrial estate and NGC models would be abroad, so would any number of Trinidadian companies that constitute the country's energy sector. In fact, in the face of a general downturn in activity across the industry, service companies have fared exceptionally well as ongoing integrity works at home have pushed companies to opportunities abroad. Edsel Lee, Regional Manager for Team Industrial Services, says "even with the downturn in production, we have not seen a

*"**This is where** much of the opportunity for other Trinidadian companies lies; in identifying their strengths and niches where they would be needed. The opportunities are numerous."*

–Roger Packer

lapse in service work. As a matter of fact, service companies have seen increased performance in recent years, with Team marking record years for each of the past four years." Team's success has lead its U.S.-based head office to place the management of the company's Angola branch under Lee's supervision from Trinidad and Tobago. The diversification of service companies in Trinidad and Tobago—both in terms of their offerings and their locations—is demonstrative of a business acumen aimed at ensuring that the service sector remains strong regardless of domestic economic conditions.

Tucker Energy Services Limited, one of the oldest companies in the country's industry, is also one of its biggest success stories of a Trinidadian company operating abroad. Tucker's Packer believes that local partners are one of the most important aspects of taking a company abroad into new markets. In discussing Tucker's strengths, Packer identifies completions, wire line logging tools, sand control and, in particular, cementing as areas in which the company has managed to bring a particular 'Trinidadian operational model' overseas. "We have succeeded in entering niche markets where our strengths—such as cementing—are in high demand," says Packer. "This is where much of the opportunity for other Trinidadian companies lies; in identifying their strengths and niches where they would be needed. The opportunities are numerous."

Douglas Boyce, COO of marine support services company Hull Support Services Limited, believes that Trinidadian companies will have an advantage over their European coun-

Kenneth Ferguson, President, The Kenson Group of Companies

terparts in West African markets. "A mentality of favorable south-to-south relations … stems from a similar history or even a similar soul between West Africa and the Caribbean," says Boyce. Hull Support Services is looking to brand themselves as a Trinidadian company abroad by creating strategic partnerships with companies in foreign markets, similar to the partnership they are offering to foreign companies wishing to enter their home market. The strong currents where the Caribbean sea meets the Atlantic ocean means that subsea service companies originating from Trinidad and Tobago have the added experience of working in particularly complex conditions, which serves them well in applying that expertise overseas.

In the small space that Trinidad and Tobago occupies, the number of niche services required to support the island nation's industry alone provides a wealth of opportunity. The Kenson School of Production Technology (KSPT) was founded by Chairman Kenneth Ferguson to fill a gap in education geared towards the energy sector, and has successfully identified yet another niche for expansion abroad. In the late 1990s, when Ferguson founded the school, he says "most petroleum companies were having great difficulty in sourcing locally skilled and experienced nationals to work offshore." Ferguson built KSPT around the model of placing students directly from colleges and technical schools with multinationals operating offshore. This on-the-job training has been increasingly popular locally, with most operators having ties to KSPT directly or indirectly. Kenson's management has been exploring opportunities in West Africa and Tanzania to export both their technical and educational services to the region. KSPT has already seen a round of students from Uganda who will be returning to their country to join the industry, thus creating a network of qualified individuals to continue sharing knowledge locally.

National Helicopter Services Limited (NHSL), a formerly government-owned transportation logistics company, will begin construction of a new, comprehensive heliport at its current site in Couva in 2013. The company plans to add a certified repair center for helicopters from throughout the region as well. Joshey Mahabir, the company's Managing Director, says "in the past two years, we have seen an increase in the exploration and drilling activity in Trinidad and Tobago's waters, mainly on the northeast coast of the country." Being one of two helicopter operators on the island, NHSL's growth is reflective not only of the company's successes, but of the industries projected performance. "Due to the amount of clients we have already gained as a result of this interest," continues Mahabir, "our two current check-in locations have outgrown the size of our operations." NHSL's heliport and repair center will make air transport across the island's onshore fields and to its offshore rigs more efficient and comprehensive. NHSL has identified and is already working on expanding its presence in the region, beginning with Guyana and Suriname. If the government can embody a similar attitude to ensuring the country's road network is expanded, the industry will truly be prepared for the growth it is set to experience.

Entering the Trinidadian market can prove to be somewhat of a challenge for new companies, as indicated by Trinidad and Tobago's low ranking in the World Bank's Ease of Doing Business Survey. In this context, companies like JSL International have also been successful in establishing a one-stop-shop solution to provide advisory and practical services to newcomers. Javid Ramcharitar, JSL's Managing Director, says "a well-prepared entry strategy is essential, as is a key service provider who will navigate a company through the often complicated set-up procedure; the current government has introduced incentives for oil and gas companies to set up in Trinidad and Tobago, including a reduction in petroleum taxes."

Ramcharitar hopes to take his one-stop-shop model of helping companies establish operations abroad; he has already seen success regionally and believes that the experience provided by Trinidad and Tobago's industry will be particularly useful in other emerging markets. "From the gas viewpoint," he says, "Trinidad and Tobago has a skilled resource base that should be exported." JSL maintains a running database of qualified CVs for use both domestically and abroad, should the last-minute need arise. Given JSL's success in establishing companies within the country in recent years, there is no reason why exporting Trinidad's skilled resource base will not prove equally successful.

Bridging A Disconnect: Financing And The Energy Sector

With capital being as globally mobile as it is today, pitching to and securing investors is given as much importance as evaluating the technicalities and geographical impact of a project. It is only natural, then, for the finance and energy sectors to experience significant overlaps. Trinidad and Tobago, however, breaks the mold for this overlap and the lack of any real relationship between the country's energy sector and the remainder of its economy—finances included—is intriguing. As Anthony Jordan, Regional Corporate Manager of Republic Bank, Trinidad's largest, points out, "Our liquidity situation is very decent and with the right circumstances, we have a great deal of money to lend." Jordan is not the only figure to endorse the liquidity of banks in Trinidad and Tobago, nor is he the only one to be both hopeful and skeptical about chances for investing in the energy sector. "There certainly is potential in this area of the financial sector, but for this to happen … the government has to provide more incentives for banks to lend to the upstream exploration and production sector," explains Jordan.

> *"**Our liquidity** situation is very decent and with the right circumstances, we have a great deal of money to lend."*
> *–Anthony Jordan*

Naturally, the lag between initial exploration, drilling and actual production is a significant risk for smaller banks to get involved in. Jordan has identified service companies as the ideal investment, because their capital expenditure for equipment lies within a more manageable range. Besides the relatively easy availability of capital for E&P's in North America and Europe, there is a general lack of understanding of the energy industry from the perspective of the financial institutions. Joel Pemberton, CEO of Trinidadian-owned Trinity Exploration and Production, is attempting to mend this gap. "Providing loans to the oil and gas industry can be very technical and local banks need to build their internal expertise," Pemberton says. "We are bringing the top analysts from RBC London to Trinidad to host a session with local banks on how to value oil and gas companies and structure their finances".

Trinity is the country's seventh largest operator and the only company operating onshore and on both coasts. With its name meant to reflect its Trinidadian heritage, Trinity is setting the example for what successful reinvention will mean for Trinidad and Tobago, both at home and abroad. Taking the lead in reforming the financing of the oil and gas sector while promoting Trinidad-based investment abroad, Pemberton hopes that Trinity is only the first of many such companies that truly rep-

Rikhi Rampersad, Managing Partner, Deloitte

Wain Iton, CEO, Trinidad and Tobago Stock Exchange (TTSE)

resent Trinidad and Tobago's potential in the oil and gas world.

This financial disconnect is made all the more acute given the further complexities of such a small market. "Trinidad and Tobago is a very closed society that functions in a large part on relationships. Banks are not willing to provide reasonable rates to projects and people they are not familiar with," explains Rikhi Rampersad, Managing Partner at Deloitte's Trinidad and Tobago office, the most recent arrival of the Big Four to the island. Deloitte has just acquired geological consultancy firm AJM Petroleum Consultants, rebranding the partnership as AJM Deloitte. Rampersad intends to see 2013 bring the expansion of Deloitte's offices in Port of Spain to include AJM Deloitte and a team of geologists dedicated to improving the company's service offerings to the sector. "As a result, many of the smaller players that could propel the country and sector forward have a difficult time breaking into this circle," says Rampersad. In order for Trinidad and

Diver prepares to inspect a rig

Tobago's local production and service companies to develop, the mindset in the local finance industry needs to change to help foster smaller business growth.

This is a sentiment echoed by Wain Iton, CEO of the Trinidad and Tobago Stock Exchange (TTSE). By way of explaining the lack of companies listed on the TTSE, Iton says, "It is an entrenched business ethic for smaller companies not to go public." Similar to Trinity, the TTSE is also working towards educating potential investors to the benefits of listing on Trinidad's admittedly stagnant stock exchange. Currently, Mora Oil Ventures is the only oil company listed on the secondary exchange.

Reinvention encompasses a change in attitude, target markets and competitiveness. At the same time, reinvention does require funding. In order for the finance sector to grow—and thus encourage greater economic diversification—and for local companies to spread the 'Trinidad' name across the globe, local banks will have to themselves invest in developing teams dedicated to oil and gas research and risk capital finance.

Beyond Expertise: Technology

The technology available for monitoring activity at both onshore and offshore oil wells have developed into extremely advanced systems as new terrains and geological challenges have been ecountered across the globe. Not to be left out, in addition to its highly skilled people, Trinidad and Tobago has made some contributions to the technological side of things as well. Gregory Boyles, President of Houston-based New Horizon Exploration Ltd., came to Trinidad and Tobago with the goal of introducing a new technology to a market in which he saw opportunity. In describing New Horizon's artificial lift work in the southern Parrylands block, Boyles says, "During the last ten years of drilling the horizontal wells and using injectors, we found the reservoirs to be very compartmentalized, and that the highly viscous, heavy crude, was very difficult to produce. If specific fluid levels are not maintained during drilling, the well will cease to produce oil, and that was the impetus to develop our technology." The efficiency and cost-effectiveness of the Smart Pumper technology developed by Boyles and distributed by its sister company PetroCom promises to be popular amongst smaller companies such as New Horizon, which often cannot afford the more expensive SCADA technologies to monitor their wells.

Anton Paul, Managing Director, Hydrocarb TT

Hydrocarb TT, a family-owned lease operator and service provider, has seen a similar demand in the arena of enhanced recovery optimization. Hydrocarb TT recently launched a tar-sands patent for a similar technology that aids in extracting oil from sand grains in an economically viable manner, without producing any environmental waste. Anton Paul, Hydrocarb TT's Managing Director, wishes to see Trinidad and Tobago pursue stricter intellectual property rules in order to protect local innovations. He also sees technology as a way for Hydrocarb TT and other local companies to compete on a global scale. "Gaining respect in the global arena by multinationals is an ongoing challenge," says Paul. "The development of these technologies shows the greatest potential we have." If companies like New Horizon, PetroCom and Hydrocarb are able to dedicate resources to research and development pursuits, they will be setting yet another example of how Trinidad and Tobago can focus on remaining a key player. ■

TRINIDAD AND TOBAGO'S OIL & GAS INDUSTRY

Looking Forward

A renaissance.

At the height of the downturn Trinidad and Tobago is currently experiencing, when shale gas discoveries in the U.S. dominated headlines, there was a sense of worry that the country's long-standing oil and gas sector would not recover. This fear has since dissipated and turned into a more cautious optimism for the future of Trinidad and Tobago's energy sector. While comments on the industry's complacency are not unfounded, there is every indication that both the government and key players are aware of the need to reexamine the current structures and relationships that define Trinidad and Tobago's energy sector. Being at the crossroads that it is, even with its mature oil and gas sector, Trinidad and Tobago is set to experience continued growth in the coming years, both domestically and overseas. Although the outlook for the sector is generally positive, it is important to maintain an edge of caution when projecting Trinidad and Tobago's future. As with any global industry, trends are not isolated to any one market, even in an island economy. ■