THE NATIONAL GAS COMPANY OF TRINIDAD AND TOBAGO LIMITED CORPORATE QUARTERLY JOURNAL



Transformation Within the Energy Sector - p 4



VOLUME 27 NO.2

CONTENTS

PRODUCED BY

The National Gas Company of Trinidad and Tobago Limited (NGC) Orinoco Drive Point Lisas Industrial Estate, Couva Republic of Trinidad and Tobago West Indies

MANAGING EDITOR

Christine Punnett Head, External Communications, NGC

SUB-EDITORS

Joselle G. Sirju Public Relations Officer II External Communications, NGC

Coretta-Lee Clifford Public Relations Officer I External Communications, NGC

PHOTOGRAPHY

NGC Archives

DESIGN

Lonsdale Saatchi and Saatchi Advertising Limited

PRINTING

SCRIP-J

Please address all correspondence to GASCO NEWS c/o NGC Communication and Brand Management P.O. Box 1127, Port of Spain Tel: (868) 636-4662,4680 Fax: (868) 679-2384 Email: info@ngc.co.tt Website: www.ngc.co.tt

©2017 Material in this publication, with the exception of photography, may be reproduced once credit is given to GASCO NEWS.

PRESIDENT'S MESSAGE

Expanding Our Business Opportunities

03

BUSINESS DEVELOPMENT

A Kaleidoscope of Change: National Energy Leads Transformation Within the Energy Sector

 \bigcirc

PPVS Project Upgrade

11

20

ENVIRONMENT AND SAFETY

T&T'S Inaugural Clean
Energy Conference 13

Enhancing Ocean Governance: NGC Supports UTT Symposium

NGC NEWS

Transformative Business for a Sustainable Future - NGC Group
Annual Technical Meeting

TTNGL Launches Successful Additional Public Offering

Securing Our Business Through Gas Supply Agreements

Sharing Our Expertise - NGC Hosts Delegations from Africa

Strengthening Our National Contribution NATIONAL ENERGY NEWS

Fish Landing Facility Handover

23

LABIDCO NEWS

First CGCL Shipment Arrives at Port of Brighton

24

PPGPL NEWS

PPGPL Leads NGC Group's Participation in UWI World of Work

25

NGC CNG NEWS

CNG Vehicle Management: RFID Coming for CNG Vehicle Safety

26

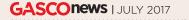
CNG Supply Now in Arima











PRESIDENT'S MESSAGE

Expanding Our Business Opportunities

Over the last few months, NGC's focus has been on addressing a number of strategic items that are important to the sustainability of the Company.

At the start of the quarter, Trinidad and Tobago NGL Limited (TTNGL) was high on the agenda. The company's second Annual General Meeting (AGM) was held on April 25th, 2017. In updating shareholders on the performance of TTNGL over the past year, Chairman Gerry C. Brooks highlighted that TTNGL had delivered a 23% return to investors since the IPO in 2015, and could boast of having the highest dividend yield on the Trinidad and Tobago Stock Exchange at 7.14%. On June 5th, 2017 an Additional Public Offering (APO) in TTNGL was launched. The closing date was June 28th, 2017. The offer included the sale of 40,248,000 Class B shares in TTNGL at a price of TT\$21.00 per share. We are proud to report that the APO was a tremendous success and was oversubscribed.

Another major priority for NGC this quarter was securing our business, particularly with respect to gas supply. We concluded negotiations and executed natural gas supply contracts with BPTT and EOG Resources. These new contracts will secure our natural gas supply for the medium term, ending 2023. NGC's existing contracts with BPTT and EOG will expire in 2018. Additionally, the new discoveries by BPTT in the Savannah and Macadamia marine fields provide an additional two (2) tcf of gas and support the long-term development of the domestic gas-based sector.

In addition to the measures being taken domestically to shore up our gas supply, NGC continues to work assiduously to advance the Dragon marine field project. The Dragon field is part of the Mariscal Sucre region which includes four fields located within Venezuela's territorial waters. The Dragon, Patao, Mejillones and Río Caribe fields, located around 25 miles off the Paria Peninsula at a water depth of 328-427 feet, hold an estimated 1,200 MMscf/d of gas. The Dragon project, which involves tripartite discussions and agreements between NGC, Shell and Petróleos de Venezuela S.A. (PDVSA), aims to export gas from Dragon to Trinidad. This should mitigate gas curtailment and provide the much-needed natural gas to the domestic and LNG markets at commercially acceptable prices. To date, the project is progressing in both the commercial and technical areas, and on track towards agreement and sign-off of a binding term sheet. The NGC Technical Team



Mark Loquan, President, NGC

is progressing works toward the completion of a pipeline tie-in to Phoenix Park Valve Station (PPVS) by Q4 2019.

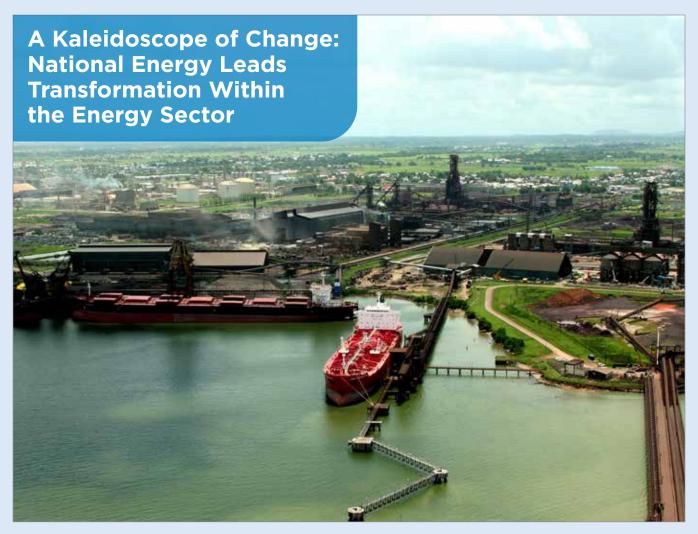
As a high-performing state-owned company, NGC continues to reinforce its presence at conferences and workshops. NGC's employees, members of the Executive Management Team (EMT) and the Board presented at various events to highlight the competence and expertise resident in NGC. This strategy supports our internationalisation thrust to showcase our energy expertise and services, as well as heighten NGC's brand as a transformative and adaptive organisation that is weathering the challenges of the marketplace in which it operates.

We have been navigating through these challenging times, and as such, the Board and Executive Management wish to acknowledge the contribution made by our employees. We have achieved many milestones for the first half of 2017, but there is significant work still to be done if we are to achieve our long-term goals. We must remain steadfast in our dedication to our mandate to build and expand our business on behalf of the people of Trinidad and Tobago.

Mark Loquan, President



BUSINESS DEVELOPMENT



Aerial view of Port Point Lisas

MR. BRIAN BRANKER

Administrative Assistant IV (Ag), assigned to the office of the Vice President, Investment Facilitation & Infrastructure Development, National Energy

MS. ANALEISE RAMGATTIE

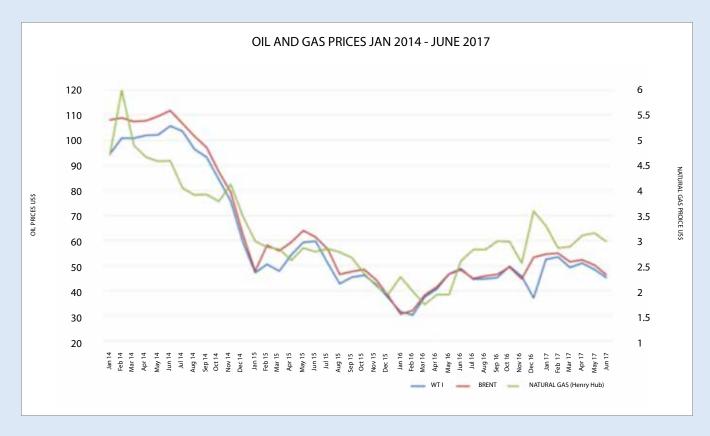
Business Analyst, assigned to the Engineering Designs & Technical Services (ED&TS) Department, National Energy

MS. TAMARA BLACKMAN

Business Analyst, assigned to the office of Vice President Investment Facilitation & Infrastructure Development (IF&ID), National Energy

Today's corporate watchword is *transformation*, and for good reason. Transformation is a cross-functional effort to alter the financial, operational and strategic trajectory of a business, with a stated goal of producing game-changing results. Such results can include 'fast to-market strategies', increased return on investments, cost efficiencies, new product innovations and the ability of the organisation to maintain momentum as the market changes.

With the fall in oil prices to levels not seen in more than a decade, economists are of the view that the new era of cheaper oil will be with us for a while. These changes have created a shift in the energy landscape, influenced by strong crude oil supply and weak global demand, shale gas revolution, environmental regulations, alternative energy sources and technological advances. Developing resilient strategies to combat these changing dynamics have become top priority for industry leaders, who have begun to look at redefining their business approach through transformation initiatives in an effort to adapt to the evolving energy mix.



Source: US Energy Information Administration 2017 (EIA) Figure 1: Chart showing Oil & Gas Prices for period Jan 2014 - June 2017

KEY DRIVING FORCES BEHIND ENERGY SECTOR TRANSFORMATION

Strong Crude Oil Supply and Weak Demand

The combination of strong crude oil supply and weak global demand has pushed crude oil prices to their lowest levels since 2014 (see Figure 1 above). The volatility of the global oil market has been heightened based on a culmination of various factors currently afflicting energy markets, including geopolitical unrest as well as economic uncertainties.

Shale Gas Revolution

The biggest innovation in energy so far, this century has been the development of shale gas and the associated resource known as 'tight oil.' Shale energy ranks as a top game-changer, not only because of its abundance in the United States, but also because of its profound global impact. America's shale gas and tight oil are already changing global energy markets and reducing both Europe's competitiveness, and China's overall manufacturing competitiveness. Emerging shale gas production has brought oil prices down from highs of US\$144 per barrel in 2008 to

lows of US\$42 per barrel in 2016. These changes have encouraged the revival of some idled ammonia plants and the decision by Methanex Corporation to move their methanol plant from Chile to Louisiana in 2015 to take advantage of North America's abundant supply and low cost of natural gas.

Changes in Environmental Regulations

Changes to environmental regulations are another serious driver behind the changing energy landscape. For example, with progressive enforcement of strict sulfur emission regulations globally, shipping companies and vessel operators have started exploring new avenues to comply with environmental emission standards to be imposed in the future. Indeed, more stringent sulfur content limits of marine bunker fuel are being imposed within Emission Control Areas (ECAs), reducing from current limit of 1% to 0.1%. With the rising sulfur emission legislations implemented through the International Maritime Organisation (IMO) MARPOL Annex VI, LNG bunker fuel is being viewed as a potential solution to comply with regulations.

Additionally, on December 12, 2015, an agreement to combat climate change and unleash actions and





Point Lisas Industrial Estate

investment towards a low carbon, resilient and sustainable future was agreed to by 195 nations. The aim of this agreement is to keep a global temperature rise well below 2°C and to drive efforts to limit the temperature increase even further to 1.5°C above preindustrial levels. The adoption of this agreement is said to have the effect of reversing the global energy mix towards less fossil fuel consumption, which can result in economies embracing alternative sources of energy on a high level.

Renewable Energy

Natural gas production from non-traditional sources is also revolutionising the global energy sector. From 2000 to 2010, US-based oil and gas companies invested roughly \$9 billion in renewable technology, and in many countries, the economic tide is turning in favour of renewables over fossil fuels. According to *Time* magazine, February 2017, clean energy grew at a record pace as the United States added 22GW of capacity to the grid from renewable sources in 2016, significantly trumping new fossil fuel additions. The declining cost of wind and solar power due largely to advances in technology has been cited as the primary reason for the rapid adoption of renewables in the United States.

Further, according to the US Energy Information Administration (EIA) energy outlook for 2017, the rise in renewables will outstrip that of gas on a percentage

basis, to become the single largest source of electricity on the grid by 2030.

Technological Advances

The energy sector has also been touched by technological changes which are reshaping oil and gas exploration and production activities. Digital transformation is causing a paradigm shift within the oil and gas sector with the new era of "smart" technology, which has emerged during a period of low crude oil and gas prices, decommissioning of rigs and reduction in investment for oil and gas exploration and production. Many leading oil and gas companies have recognized the importance of adopting a holistic approach to new technologies in order to remain competitive. The lower oil prices are pushing the upstream segment to not only improve vulnerabilities in exploration and production, but to enhance operational capabilities. The oil and gas sector is now focused on developing technological solutions, geared towards increasing the world's producible reserves and creating the "new normal" of exploration and production.

GLOBAL ENERGY TRANSFORMATION AND TRINIDAD & TOBAGO

Trinidad and Tobago boasts of over 100 years of experience in the petroleum sector, with considerable

National Energy Strategic Objectives NGC GROUP STRATEGIC PILLARS NATIONAL ENERGY STRATEGIC OBJECTIVES **DEVELOP ORGANISATION** To match the new level of dynamism required of • Talent Management • Organisational Restructure and Capacity Building the NGC Group to succeed in a more complex, internationally competitive arena SECURE CURRENT BUSINESS • Optimise Commerical & Contractual Arrangements To safeguard current business returns in • Stakeholder Engagement challenging supply and demand environment • Operational Excellence • Improved Customer Management **GROW LOCALLY & INTERNATIONALLY** To diversify by expanding into adjacent part of the • Pursue Strategic Partnerships (Ports, Estate, Towage) • Grow Customer Base (new markets) energy value chain locally, and investing to capture value from global discontinuities STRENGTHEN NATIONAL CONTRIBUTION • Investment Facilitation (Renewables) To deepen our contribution to the country through • Infrastructural Development both financial and non-financial activities • Stakeholder Engagement

Figure 2: The Strategic Objectives of National Energy

oil and gas exploration activities and cumulative production totaling over 3.5 billion barrels of oil between 1908 to 2016. As the largest oil and natural gas producer in the Caribbean, Trinidad and Tobago's hydrocarbon sector moved from an oil dominant to a mostly natural gas-driven sector by the mid-1990s. In 2016, the country produced 3.3Bcf per day of natural gas. Trinidad and Tobago also houses one of the largest natural gas processing facilities in the Western Hemisphere, the Phoenix Park Gas Processors Limited (PPGPL) and the electricity sector is fueled entirely by natural gas. Additionally, the domestic sector also comprises one oil refinery, ten ammonia plants, seven methanol plants, one AUM complex, one urea plant and four LNG Trains (Ministry of Energy and Energy Industries, 2017).

With the worldwide energy markets experiencing the disruptive effects of depressed commodity prices, technological changes, and stricter environmental regulations, Trinidad and Tobago has not been left unscathed, with challenges being compounded by ongoing natural gas curtailment issues. The energy sector is therefore fundamental to the Trinidad and Tobago economy, accounting for an average of 32% of GDP, in 2015; from 43% in 2006 (Ministry of Energy and Energy Industries, 2016). This sector has provided 53% of government revenue and almost 85% of merchandise export receipts over the last five years. This dependency places the country in a vulnerable position as swings in the global oil and

gas markets directly impact the performance of the domestic economy, with tightening foreign exchange, falling commodity prices, reduced revenues and decreasing foreign direct investments. The security of natural gas volumes required to maintain and support the demands of the industry will remain a top priority for the economy and in particular, the NGC Group of Companies.

NATIONAL ENERGY TRANSFORMATION

The NGC Group includes subsidiaries and investee companies involved in different activities in the natural gas sector. Its major subsidiaries include Phoenix Park Gas Processors Limited (PPGPL), National Energy Corporation of Trinidad and Tobago Limited (National Energy), and NGC CNG.

PPGPL is the country's sole cryogenic gas processing facility, which extracts the associated natural gas liquids (NGL's) from the gas stream and redelivers cleaner, high quality residue gas to NGC for distribution to its customers. National Energy is charged with the development and management of new industrial estates and associated marine infrastructure to support the energy industry. NGC CNG as part of government's mandate is responsible for the acceleration and expansion of the use of Compressed Natural Gas (CNG) as a major alternative, transportation fuel in Trinidad and Tobago.



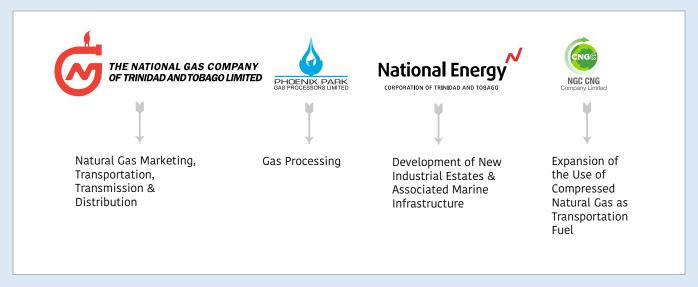


Figure 3: NGC Group Major Business Centres

With parallel shifts in the global energy landscape, the NGC Group has recognised that the new operating energy sector environment calls for a new approach to doing business. Locally, the economy has been faced with depleting proven gas reserves from 20.8 tcf in 2002 to 11.5 tcf in 2014 (Ryder Scott Report 2014 - Extract), costly exploration in deep waters, and lower demand for energy and energy commodities. The sustainability of operations therefore required a relook of NGC's approach. In 2016, the NGC Group embarked upon the development of an organisational strategy which would be better aligned to the changing environment and posited upon four pillars: (1) Develop Organisation (2) Secure Current Business (3) Grow Locally and Internationally and (4) Strengthen National Contribution.

Consistent with the global trend of transformation, NGC leverages its strength through its four subsidiaries in a synergistic manner to ensure the achievement of sustainable game-changing results.

To support this new strategy, National Energy has restructured to create the Investment Facilitation and Infrastructure Development (IF&ID) Division – a merger between the Energy Industry Development, Business and Technical Support and Infrastructure Planning and Development departments, with a focus on driving further expansion of the energy sector in the development of energy-based projects and infrastructure. Additionally, the IF&ID Division provides strategic support to facilitate National Energy's newly created Commercial Division which is charged with the effective utilisation and management of National Energy's assets towards revenue generation and cost efficiency.

PROMOTING SUSTAINABLE ENERGY-BASED DEVELOPMENT

A wholly owned subsidiary of the NGC, National Energy has been committed to the development of infrastructure to support the energy industry for more than 35 years. The company has been instrumental in the construction and operation of early petrochemical plants, and port and marine infrastructure which service all plants at the Point Lisas Industrial Estate. Today, National Energy is positioned to drive the expansion of Trinidad and Tobago's energy sector, through the development of energy projects and infrastructure.

As the state organisation responsible for the conceptualisation, promotion, development and facilitation of new energy-based industries in Trinidad and Tobago, National Energy has forged several energy-related developments aimed at fostering economic sustainability. With the changing energy landscape, National Energy is exploring potential areas of investment opportunities in the downstream energy sub-sector, including, but not limited to, petrochemicals, energy-based manufacturing, plastics and renewables.

Petrochemicals

According to research, rising shale gas exploration in North American countries and growing demand from end-use industries around the world, are propelling growth in the global petrochemical market. Accordingly, methanol is forecasted to emerge as the fastest growing product segment, growing at an annual rate of 8.1% from 2015 to 2021. The aspiration of national development not withstanding global



Solar House at UTT's Point Lisas Campus

challenges, has taken root in the construction of the methanol to di-methyl ether (DME) plant by Caribbean Gas Chemicals Limited (CGCL) on National Energy's Union Industrial Estate (UIE), a project in which National Energy has played a pivotal role. This project is a first for UIE and the first DME in Trinidad and Tobago.

UIE is well equipped to handle heavy-based industries that can bring to bear sustainable development activities for the Trinidad and Tobago energy sector, among others. The Estate is supplied with all amenities including connections for natural gas supply, drainage, water and telecommunications. UIE is also supported by the Port of Brighton. The Port of Brighton in its current configuration offers three berths approximately 660m in length, a dredged depth of 12.8 metres and a permissible bearing load of five tonnes per square metre. The Port is ISPS Level 1 certified with infrastructure for utilities, and a myriad of oil and gas logistical services.

Energy-Based Manufacturing

With expertise in methanol and past interest from entrepreneurs in local manufacturing, National Energy is looking at building further linkages downstream, in the area of derivative melamine. This initiative seeks to create strategic linkages between the energy and manufacturing sectors, given the lower investment capital required. It proposes to utilise locally produced melamine and methanol to manufacture melamine formaldehyde (MF) resins used globally in the manufacturing of engineered wood products. A pre-feasibility study is currently in progress, with

stakeholder and investor engagements providing the key inputs for the study.

Plastics

Additionally, according to market intelligence by the Rondon Group of the United States of America, the rapid evolution of the plastics industry is expected to continue. Advances in polymers and additives and the adoption of smart manufacturing, will continue to be on the forefront of industry trends in light-weighting from heavier metals to plastics. These new lightweight materials have already been tested in automobile impact studies and are now beginning to migrate into other products that require durability, especially within the construction industry. National Energy is currently looking at the Point Lisas Industrial Estate as a potential site for such facilities, supported by the already established and renowned Port Point Lisas. With its strategic location, Port Point Lisas is often referred to as the "Gateway to the Americas" catering for containerised cargo from the US, Europe, United Kingdom and the Far East.

Renewables

National Energy is also exploring the potential for the development of a 49.5 MW wind farm in Trinidad. Aligned with the national thrust to the diversify the energy mix, this project envisages the installation and use of roughly 15 horizontal axis wind turbines along the Guayaguayare ridge in south Trinidad, as a more sustainable power generation source.

Moreover, taking cognisance of government's thrust



La Brea Industrial Estate & Port of Brighton

towards achievement of 10% power generation from renewable energy by 2021, National Energy, on behalf of the Ministry of Energy and Energy Industries constructed a fully functioning Solar House on the University of Trinidad and Tobago's (UTT's) Point Lisas Campus in 2015.

Further, as part of its transformation initiative, National Energy through its newly formed business strategy development arm, is engaged in the conduct of a feasibility study for the development of new industrial sites in the Point Lisas area – Point Lisas North and Point Lisas South & East. These sites are earmarked for the development of a Solar Energy Park to support renewable energy development.

Indeed, the aim of National Energy's current business strategy is to identify potential industries requiring limited natural gas, given the existing energy climate; undertake feasibility studies; and actively seek potential investors interested in making Trinidad and Tobago their new home.

The company's new business strategy will create opportunities for new skills development, through capacity building initiatives geared towards the adoption of innovative technologies, greening operations and diversified strategies for energy sector progression. As global economies move through a myriad of transformations, National Energy is dedicated to doing its part in shaping the economy of the future; reducing its carbon footprint, enabling new job opportunities and creating centres of excellence to drive continued growth and development. The intent is to create a sustainable national economy which addresses the social, environmental and economic factors upon which a successful future is built.

National Energy, within the NGC Group, is committed to sustainable national development through the projects mentioned here. These are just a few of the areas of investment and development opportunities being explored. As we move forward in this transformed global space, it is National Energy's desire to continue delivering on its mandate through pioneering and innovative thinking to build a resilient energy that will continue to stand the test of time.



BUSINESS DEVELOPMENT



Mark Loquan, President, NGC, takes a tour of the facility, accompanied by Ron Adams, VP Operations

Background

The Phoenix Park Valve Station (PPVS) Facility, located at Point Lisas Industrial Estate in Couva, is owned and operated by The National Gas Company of Trinidad and Tobago Limited (NGC). It is a critical valve station in NGC's pipeline system that is designed for the collection and distribution of gas from three transmission pipelines with a present-rated capacity of 1.4 Bscf/d.

The facility is designed to remove liquids (both steady state liquids and pig-induced liquid slugs) from the gas flow before the natural gas is redirected to Phoenix Park Gas Processors Limited (PPGPL) for processing via a 48-inch-diameter pipeline. The station also receives dry (residue) gas from PPGPL via the Phoenix Park Intermediate Station (PPIS), which it feeds into the blending manifold for distribution to the end users

in the Point Lisas Industrial Estate, and pipelines to consumers in Port of Spain and Penal, among others. In the event that PPGPL cannot accommodate the entire gas flowrate from PPVS, there is the option to flow on a wet gas bypass directly to the residual gas system.

Project Scope

The PPVS project was initiated to expand the PPVS Facility to handle 2 Bscf/d of wet gas during 2006 to 2009 and 3 Bscf/d of wet gas from and beyond 2010. The deliverables included:

- Installation of a new slug catcher with increased capacity
- Replacement of the atmospheric condensate storage tank with pressurised storage
- Installation of a flare system to mitigate safety risks associated with vented gas.



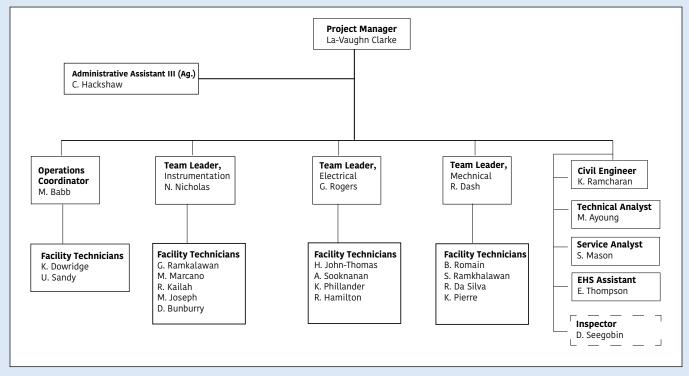


Figure 1: The PPVS Project Team

In 2008, the scope of the project was revised to include:

- An emergency shutdown system
- A fire and gas detection system
- Local control room
- CCTV security system
- Provision for wet gas by-pass.

Over the last year, the project team worked to close out all outstanding mechanical, electrical, controls, instrumentation and operational items necessary to introduce hydrocarbons into the system.

The efforts of all involved culminated with the first major activity, the lighting of the flare, which took place on June 28th, 2017.

On July 28th, NGC received 'first gas' approval, and in the ensuing months, hydrocarbon was introduced and the site commissioned successfully. At present, the team is awaiting the completion of the final review of the commissioning reports and related records by the Certified Verification Agent. Once these are acceptable, NGC can complete the tie-in between the old and new infrastructure and officially start up the upgraded facility.

The Project Manager, Ms. La-Vaughn Clarke, led the team of persons involved in supporting the completion of the project over the last 15 months. Each team/resource was given clear guidelines on the expectations over the period of the assignment.

Begun under the then Technical Services Group, the efforts of former project managers Lincoln Mathura and Roger Edghill, both of whom are no longer with the organisation, must be recognised.

"It was a fun and rewarding experience working towards this milestone achievement and working with every single team member. It was interesting to see how persons' perspectives/knowledge grew as the project transitioned through each phase. I am just happy I was a part of it and I am now ready to move on to the next interesting challenge".

La-Vaughn Clarke, Project Manager

All supporting team members must also be acknowledged for their invaluable contribution to the project.



ENVIRONMENT & SAFETY



NGC President, Mark Loquan, delivers sponsor's remarks at T&T's Inaugural Clean Energy Conference

NGC was a major sponsor of the inaugural Clean Energy Conference, which took place at the Arthur Lok Jack Graduate School of Business on June 8th and 9th, 2017. The conference was considered of key importance to the future of the energy sector in Trinidad and Tobago and aimed to highlight the need for energy efficiency in the downstream and power generation sectors, and renewable energy as a means toward optimising revenue gained through the gas value chain. This need for clean energy in Trinidad and Tobago is driven by more than just environmental and climate imperatives; clean energy has important economic implications for the country as well.

Traditionally, the third day of the Trinidad and Tobago Energy Conference was a dedicated Green Energy Day, which focused on renewable energy and energy efficiency in Trinidad and Tobago and the Caribbean, as well as the roles private sector organisations and project developers have in diversification within the energy sector. Realising the need for more focus on renewables as an imperative for future energy growth, the Energy Chamber launched its inaugural Clean Energy Conference in Trinidad and Tobago.

The Energy Chamber emphasised that "...this type of event is particularly important to the country as for the first time Trinidad and Tobago has a renewable energy target and an emissions reduction target. However, these targets are not as simple as they sound given the country's unique circumstance of having an economy sustained by a hydrocarbon industry. Also, the way in which the country generates its electricity is vastly different from any of our Caribbean neighbours. The drivers toward renewables and energy efficiency and the measurement of success must be different to that of the documented cases in our non-hydrocarbon based economy region."

Delivering remarks at the opening was NGC President, Mark Loquan. Referencing the Paris Agreement on climate change, Mr Loquan reminded the audience of the government's commitment for Trinidad and Tobago to achieve 10% energy from renewable sources by 2021 – a target equivalent to 250 MW of electricity. At present, despite being on the energy agenda for a decade, renewables account for less than 1% of our country's energy. As Mr Loquan pointed out, this meagre statistic is troubling because:

- Trinidad and Tobago has an abundance of readily available sun, sea, wind and biomass;
- Numerous studies on renewable energy have been commissioned by the government, industry bodies and even the NGC Group of Companies;
- Multiple offers of free technical support and funding have been received from developmental agencies;



- A number of well-researched and tested pilot efforts among universities, T&TEC and the NGC Group of Companies suggest that:
 - o solar power could reduce energy consumption by over 40% per household, and
 - o had the country started an aggressive energy efficiency programme on the Point Lisas Industrial Estate, using 2008 as a reference point, by 2023 emissions could have been reduced by 15% to 3.2 million tonnes CO₂, i.e. a natural gas equivalent of 58.1 million MMbtu.

Mr Loquan acknowledged that several tax incentives have been introduced to encourage development of a renewable and alternative energy industry and utilisation of solar-powered equipment. He added that legislation has been passed to ensure that companies in the energy sector, which account for over 50% of energy consumption and 47% of carbon emissions, pay a Green Levy tax to ensure funding is available for green projects. Moreover, the government completed a framework for renewable energy in 2011.

In spite of this important groundwork being laid, Mr Loquan lamented that little has been done to advance renewable energy uptake in Trinidad and Tobago because of economics. Trinidad's competitive advantage of low cost production comes in no small part from a fairly reliable supply of very cheap electricity. With some industrial sectors paying as little as US\$0.02/KW, there has been little drive to reduce consumption or convert to renewable energy. Moreover, with consumers unaware of the true cost of electricity, and the commercial arrangements that allow power generators an unlimited supply of gas, at no direct expense to them, there is even less incentive to pursue energy efficiency in a meaningful way.

In light of this, Mr Loquan issued a call to action to energy leaders, entrepreneurs, educators, researchers and citizens to resolve the apparent inertia with respect to renewable energy implementation. He pointed out that in 2012, Trinidad and Tobago was ranked second highest in the world for carbon emissions per capita. A gradual turn toward renewable energy is therefore necessary if the country is to help offset its carbon footprint.

Renewables assume greater significance in the current context of natural gas supply shortages. As Mr Loquan explained, electricity generation, which is 96% gas-fired, currently consumes about 280 MMscf/d, equivalent to five ammonia plants or 30 cargoes of LNG and 20% of NGC's total gas sales. With demand forecast to grow and gas curtailment persisting, continued use of natural gas for power generation

In spite of this important groundwork being laid,
Mr Loquan lamented that little has been done to advance renewable energy uptake in Trinidad and Tobago because of economics.



NGC President Mark Loquan

is untenable. Moreover, the low-price advantage for electricity assumed a supply of royalty gas to the government, but this was stopped in September 2016. While there has been no change in supply for power generation, NGC has had to fund the subsidy, resulting in significant lost revenue to the Company and the government through dividends and taxes.

With the imperatives for adoption of renewable technologies clear, Mr Loquan was optimistic that the country could achieve its 2021 target for clean energy with: legislative change to allow for the sale of renewable energy into the electricity grid; regulation of carbon emissions and implementation of energy efficiency mandates; private sector investment in renewable technology manufacture; energy education in schools and energy consciousness among consumers.

ENVIRONMENT & SAFETY



Danford Mapp, Manager, Business and Technical Support, National Energy, represents the NGC Group at UTT's Ocean Governance Symposium

On June 29th and 30th, 2017, the University of Trinidad and Tobago (UTT) hosted a symposium themed 'Enhancing Ocean Governance' at its Chaguaramas Campus. NGC was a sponsor of the important event, which brought together stakeholders from a number of different organisations, all with an interest in ocean governance.

An initiative spearheaded by UTT's Maritime Studies programme, the objective of the symposium was to facilitate discussions among relevant stakeholders to build cooperation and coordination around the issue of ocean governance. The symposium was predicated on the region's shared responsibility for the preservation and management of the marine life and resources in our waters, and the concomitant need for integrated communication and policy alignment among stakeholders with respect to ocean governance. The specific challenges identified as requiring attention were inconsistent legal and regulatory frameworks as well as poor enforcement of maritime law by Caribbean nations. In particular, the regulation of land-based sources of pollution, which account for more than 88% of marine pollution, is difficult to achieve without integrated, co-ordinated

Represented at the symposium were the International Tribunal for the Law of the Sea (ITLOS), the United Nations Environmental Programme (UNEP), the Institute of Marine Affairs, the International Maritime Organisation, the Trinidad and Tobago Coast Guard,

government ministries and agencies, and other sectors with marine interests.

Danford Mapp, Manager of Business and Technical Support at National Energy, delivered remarks on behalf of the NGC Group of Companies. He situated the matter of ocean governance within the wider context of sustainability, underscoring the need to ensure our oceans can continue to provide food, habitats, climate regulation and other essential services well into the future.

For the NGC Group, ocean governance is of particular importance with the emergence of cross-border natural gas fields as critical areas for future development. Moreover, the Group, through National Energy, manages piers at Port Point Lisas, as well as ports at Brighton and Galeota, and is working toward transforming the ports into regional logistics hubs. If realised, this will increase marine traffic around our islands and will necessitate enhanced management and protection of our territorial waters. Given these direct business linkages, Mr Mapp indicated the Group's willingness to partner with the relevant agencies to ensure that the right policies and mechanisms are implemented to police and protect the marine acreage that surrounds our country.

He commended the UTT for facilitating this timely symposium, and expressed the hope of the NGC Group that it would incite collective action toward strengthening maritime governance in the Caribbean Basin.



NGC NEWS

Transformative Business for a Sustainable Future - NGC Group Annual Technical Meeting



The first NGC Group ATM

The first NGC Group Annual Technical Meeting (ATM) took place at Hilton's Ballroom on April 26th 2017 under the theme, 'Transformative Business for a Sustainable Future'. Whereas NGC would have been the sole presenter at past ATMs, all member companies of the Group were present to report on their performance this year, in keeping with efforts to strengthen the Group's alignment and highlight synergies.

Attending the meeting were key representatives of the Ministry of Energy and Energy Industries (MEEI), the Ministry of Finance, Board of Inland Revenue (BIR), Environmental Management Authority (EMA), and the Standing Committee on Energy.

NGC's Chairman, Mr Gerry C. Brooks shared the Group's performance highlights, strategic insights and the proposed way forward. The NGC Group Strategic Pillars were also presented.

- Develop Organisation to match the new level of dynamism required of NGC to manoeuver in a more complex, internationally competitive arena
- Secure Current Business to safeguard current business returns in challenging supply and demand environment
- Grow Locally and Internationally to diversify by expanding into adjacent part of the energy value chain locally, and investing to capture value from global discontinuities
- Strengthen National Contribution to deepen our contribution to the country through both financial and non-financial activities

NGC's President, Mr Mark Loquan, set the stage for the meeting defining the current industry landscape and NGC's thrust to secure gas supplies in the short, medium and long terms. He also gave performance highlights with respect to Asset Integrity Management Systems (AIMS), Health, Security, Safety and Environment (HSSE) imperatives, strategic risks and other organisational development projects. The President highlighted critical corporate deliverables and NGC's commitment to a new and transformative business.

Presentations were then made by the Presidents of each of the NGC Group subsidiary companies:

- Mr. Dominic Rampersad President, PPGPL
- Mr. Curtis Mohammed President, NGC CNG
- Dr. Vernon Paltoo President, National Energy

Each President provided context for their respective business environment including their strategic risks, and the alignment of their strategic pillars to the NGC Group of Companies' strategic direction.

The session proved to be very beneficial as areas for further collaboration and synergies across the Group and with other governmental agencies were highlighted. There was also much conversation generated around updates regarding:

- T&TEC indebtedness
- Gas supply projects such as Dragon, TROC and Juniper
- Commodity trading
- Growth initiatives
- New partnerships (domestic, regional and national).

Following the presentations, there was a panel discussion which centred around issues such as regulatory approvals and support, MoUs and commercial arrangements.

TTNGL Launches Successful Additional Public Offering



Mr Gerry C. Brooks, TTNGL Chairman, addresses shareholders at the company's 2nd Annual General Meeting

This quarter was an eventful one for Trinidad and Tobago NGL Limited (TTNGL), with the company expanding its ownership base through a highly anticipated Additional Public Offering (APO) of shares.

At the company's AGM, held on April 25th at the Grand Ballroom, Hilton to present the 2016 Annual Report to shareholders and re-elect its Directors, Chairman Gerry C. Brooks shared positive news about the company's performance over the past year:

- TTNGL showed the highest dividend yield on the TT Stock Exchange (TTSE)
 Dividend yield: 2016 - 7.14%; 2015 - 6.98%
- There was robust trading on the TTSE for 2016 (3.4M shares valued at TT\$72.5M)
- There was a stable share price with capital appreciation
- The share consistently traded above the IPO price
- The total dividend paid was \$1.50 per share for 2015 and this was maintained for 2016 (TT\$464.4M paid to shareholders to date)
- The company had a very healthy cash position of US\$54.3 million or TT\$366 million at the end of 2016

Based on these solid financials and demonstrable

public interest in the TTNGL stock, the Board of Directors approved and announced on May 17th the additional sale of 40,248,000 Class B shares in TTNGL, owned by NGC. The APO commenced on June 5th, 2017 and closed on Wednesday June 28th, 2017. Shares were offered to the public at a price of TT\$21.00 per share. This offer price resulted in a trailing dividend yield of 7.14% – the highest on the TTSE. The shares created tremendous excitement on the local stock market, earning endorsements across the financial sector during the three and half weeks of the offer.

Following the launch of the APO, representatives of TTNGL, NGC and PPGPL, including Mr Brooks; TTNGL Chief Financial Officer, Mr Sheldon Sylvester; NGC Vice President, Finance and Information Management, Mr Narinejit Pariag; and PPGPL President, Mr Dominic Rampersad, facilitated a number of information sessions with members of the financial fraternity, including bankers and credit union representatives. First Citizens Investment Services (FCIS) facilitated a one-day visit to NGC to process employee applications for the APO.

The IPO of TTNGL shares in 2015 was the largest local IPO. It was oversubscribed by 1.77 times and at that time, also invigorated the local stock exchange. The

Continues on next page



TTNGL Launches Successful Additional Public Offering (continued)

From previous page



TTNGL Board and Management L to R: Vivek Charran (Director), Ashmeer Mohammed (Director), Kenneth Allum (Director), Gerry C. Brooks (Chairman), Sheldon Sylvester (CFO) and Prof. Andrew Jupiter (Director)

Chairman noted that the APO had a similar effect.

Chairman Brooks and the Board of TTNGL conveyed thanks to TTNGL's existing shareholders and reinvestors who, by their overwhelming subscriptions, reaffirmed their confidence in TTNGL. The Chairman also welcomed on board new investors who believed in the strength of TTNGL and its APO of NGC's 40,248,000 Class B Shares. According to Chairman Brooks, "The offer received a very robust response from existing and new investors. Initial indicators suggest that the APO was oversubscribed."

Mr Brooks, in issuing his thanks on behalf of the Boards of NGC and TTNGL, also stated, "We will continue to

work for all our investors to maximise the value of and returns on this important piece of our patrimony. This demonstration of support will fuel NGC's, PPGPL's and TTNGL's continued determination to distinguish ourselves in the energy sector."

Public investors will now hold 100% of Class B Shares of TTNGL. This shareholding will represent a 75% effective ownership interest in TTNGL. This amounts to 29.25% effective ownership interest in PPGPL. NGC's effective ownership of PPGPL will be reduced from 63% to 52% but NGC will still maintain control of the Board of PPGPL, allowing the Company to benefit from synergies across The NGC Group.



Securing Our Business Through Gas Supply Agreements



NGC's President, Mark Loquan, and BPTT's Regional President, Norman Christie, at the signing ceremony for the gas supply contract

One of the biggest challenges facing the domestic energy sector over the past few years, has been natural gas supply shortages. Given the impact of these shortages on NGC's customers and business, securing a reliable future supply of gas has been a priority for the Company's Board and Management. After many months of concerted and collaborative effort by NGC teams and upstream producers, significant milestones were achieved this quarter which will help boost supply certainty in the medium term.

On June 2nd, 2017, NGC announced that negotiations were substantially completed on a new supply agreement which would support the sanction of the Angelin project. BP proposed to invest US\$5 billion in future development which will greatly alleviate natural gas shortages. The Angelin project will come on the heels of recent game-changing initiatives in Trinidad and Tobago, such as the Trinidad Offshore Compression (TROC), Juniper, and Dragon projects. Taken together, these projects will help stabilise natural gas production against projected decline.

Another milestone was achieved on June 14th as NGC finalised an agreement with EOG Resources

Trinidad Limited (EOG) for a continued natural gas supply to the domestic market from 2019, following the execution of a natural gas supply contract for new reserves. NGC partners with the upstream producer in the South East Coast Consortium (SECC) Offshore Block, and EOG continues to be one of the main suppliers of natural gas for use by the domestic petrochemical sector. Remarking on the significance of this milestone, George Vieira, Managing Director of EOG, stated that, "EOG is grateful to NGC for negotiating in good faith as this charts the course for future investment and partnership opportunities."

Negotiations for renewing gas supply contracts have been ongoing for months, and the progress achieved is illustrative of NGC's commitment to its customers and the sector as a whole. It also demonstrates the Company's new strategic direction and mission to become a global player by building partnerships locally, regionally and internationally.

NGC recognises with gratitude the diligence and professionalism of all those who worked toward achieving these milestones, not just for the sake of the Company, but for the future of our energy sector.



Sharing Our Expertise - NGC Hosts Delegations from Africa

Ghana

NGC recently hosted a visiting delegation from Ghana. The 14-member delegation included representatives of the Ghana Ministry of Finance and the Ghana Revenue Authority. They were accompanied on this visit to the Point Lisas Industrial Estate by representatives of Trinidad and Tobago's Ministry of Energy and Energy Industries.

Since finding significant oil and gas reserves in Ghana, there have been concerns regarding gaps in legislative frameworks, poor spending of revenues and weak institutional collaborations. Trinidad and Tobago presents an opportunity for learning and exposure, with its fully-integrated petroleum industry – upstream, midstream and downstream. As such, the Ghanaians took the opportunity to study Trinidad and Tobago's energy sector successes.

The delegation received presentations from the NGC Group member companies which gave an overview of the Group's business activities and the model of gas-based development in Trinidad. Present to share this information were:

- Mr. Ronald Adams Vice President, Operations, NGC
- Ms. Aribeca Cazaubon Team Leader, EID, National Energy Corporation of Trinidad and Tobago
- Mr. Alvin Dookie Vice President, Business Development, Phoenix Park Gas Processors Limited
- Mr. Curtis Mohammed President, NGC CNG Company Limited

Following the presentations, technical discussions were held and the group then proceeded on a tour of the Point Lisas Industrial Estate.

Visits such as these are pertinent not just to NGC but to the wider national energy sector as we seek to cement our position as a recognised global leader in the development of sustainable energy-related businesses.

Tanzania

The National Gas Company of Trinidad and Tobago Limited (NGC) hosted a visiting delegation from the Government Negotiating Team (GNT) of the United Republic of Tanzania on 28th June, 2017 at its Point Lisas Head Office. The Government of Tanzania, through its Ministry of Energy and Minerals, opened discussions with International Oil Companies (IOCs) for the negotiation of a Host Government Agreement (HGA) with a view to developing an LNG project. Discussions began in September 2016 and the Government of Tanzania constituted the GNT to meet



Visiting delegates from Ghana sit with Alvin Dookie, VP Business Development, PPGPL (first from left), Curtis Mohammed President NGC CNG (second from left) and Ron Adams, VP Operations, NGC (second from right)

with negotiating teams for the IOCs. To date, the IOCs and GNT have agreed to develop a term sheet separately in order to start negotiations which will develop the HGA.

NGC's President Mark Loquan, along with NGC's Vice President, Operations, Ronald Adams, delivered a presentation which spoke to both the NGC Group and NGC's interest in LNG. Also representing the NGC Group were Verlier Quan Vie, Senior Manager, Commercial, NGC and Alvin Dookie, Vice President, Business Development, PPGPL. Mr. Loquan noted that these study tours are important to NGC as they cemented NGC's new strategy - transforming its business, growing along the value chain, moving into other jurisdictions and becoming a global player through strategic partnerships. NGC also expressed its interest in promoting not only NGC, but Trinidad's service sector and academic institutions if value could be created in Tanzania's critical stages of development.

The GNT's visit centred around learning more about Trinidad and Tobago's oil and gas industry. The purpose of the study tour is to help the team acquire knowledge and experience which will help to modify and develop a better term sheet. Leading the GNT was Prof. James Mdoe, Acting Permanent Secretary - Ministry of Energy and Minerals, who thanked NGC for sharing its experience and extended an invitation to visit Tanzania.

The appeal of Tanzania's 53.2 trillion cubic feet of recoverable natural gas resources has brought intense competition among the global energy players. Tanzania's economy has borne the brunt of slow-moving global economic growth and low commodity prices. The government is pushing for the development of the country's unexploited offshore gas reserves.

Strengthening Our National Contribution



L to R: Funso Aiyejina, Deputy Festival Director; Marina Salandy-Brown, Founder and Festival Director; Dr. the Honourable Keith Rowley, Prime Minister of Trinidad and Tobago; Gerry C. Brooks, Chairman of NGC

The NGC Corporate Social Responsibility (CSR) calendar this quarter featured some signature events, which have become much anticipated and attracted support and attention from the national community.

NGC Bocas Lit Fest

The 7th edition of the NGC Bocas Lit Fest took place from April 26th-30th 2017 at the National Library and Old Fire Station, downtown Port of Spain. This year's festival saw over 50 regional authors and speakers taking part in the programme including The Honourable Prime Minister, Dr Keith Rowley. Dr. Rowley joined the NGC Bocas Lit Fest for a candid, compelling session on his recently-published memoir, From Mason Hall to Whitehall. The one-on-one session was facilitated by the festival's Deputy Director, award-winning writer Funso Aiyejina on Thursday April 27th at the Old Fire Station.

Hundreds have attended the festival's readings, panel discussions, and performances since its inception. This year, the five-day event featured panel discussions on issues such as human rights, press freedom, and the criminal justice system.

Highlight events of the festival included:

- Human Rights Open Mic
- · Caribbean Poetry's New Wave
- Human Rights Ole Mas competition
- Stand up for Your Rights Open Mic

Judges announced the winners of the three genres for the Festival:

- Poetry: 'Cannibal', by Safiya Sinclair
- Fiction: Augustown, by Kei Miller
- Non-Fiction: Virtual Glimpses into the Past/A Walk Back in Time: Snapshots of the History of Trinidad and Tobago, by Angelo Bissessarsingh

The winner of the 2017 OCM Bocas Prize was Kei Miller, who received prize money of US\$10,000.

Founded in 2011, the festival has grown over the past six years to achieve recognition in February 2017 as one of the world's best literary festivals by Penguin Random House The Writers' Academy.

The Festival can now boast of adding another accolade to its belt: a feature in *The Financial Times*. The Publication's City Editor, Jonathan Ford, found himself immersed in history and literature when he attended the 7th Annual NGC Bocas Lit Fest, declaring, "Packing up after the NGC Bocas Lit Fest, the island's five-day celebration of writers, writing and ideas, you find yourself ditching shoes and shampoo to make room for more books, each signed with a flourish by their authors. Bocas — the word means 'mouth' — has none of the genteel complacency of British book festivals. The debates feel urgent, in your face."

The Festival was also featured in a Barbadian Arts Blog (Arts etc.) and two magazines in the Dutch-speaking island of Curacao. NGC's Bocas Lit Fest sponsorship has proven to be one of our fastest-growing and most successful partnerships, reaching thousands of people throughout Trinidad and Tobago and the wider Caribbean since its inception.



NAAA Championship Month

On May 10th 2017, the National Association of Athletics Administrations of Trinidad and Tobago (NAAA) Championship Month was launched. These Championship games see many of the top national athletes from T&T and elsewhere, competing, and hoping to qualify for spots in this year's CAC Championships in Colombia and IAAF World Championships in London. Athletes who are abroad for training or at college/university are also encouraged to return home to take part in the qualifiers.

NGC believes sport is an attractive area for corporate investment as it builds healthy bodies, characters and attitudes. This particular event also targets youth development, and fosters a sense of community while building national pride. NGC has partnered with NAAA over the past four years. During that period, the Company has contributed to assist in building a strong Trinidad and Tobago track and field legacy. This partnership is used to support developmental programmes for coaches, volunteers and high-performance athletes, and improve the governance and operational effectiveness of the NAAA.

The NAAA Championship Month includes:

- NGC/NAAA Juvenile Championships
- NGC/NAAA Junior Championships
- NGC/Sagicor National Open Championship

The events featured intense competition as each Championship category competed at the national level at the Hasely Crawford Stadium.

The 2017 Juvenile and Junior Games are aligned with the Company's focus on youth development. These games provide a forum for our young and gifted athletes to showcase their skills with an amazing display of discipline, determination and camaraderie.



NAAA Championship Month action

The 2017 NAAA Open Championships proved to be a great opportunity to view our country's top talent and an occasion for the national community to rally together to support our national athletes. This year, these games were qualifiers for the IAAF Games which will take place in London in August 2017.



NAAA Championship Month action



NATIONAL ENERGY NEWS

Fish Landing Facility Handover



Dr. Vernon Paltoo, President, National Energy, delivering opening remarks at the Fish Landing Facility Handover

National Energy officially handed over the Fish Landing Facility located at Guayaguayare to the Ministry of Agriculture, Land and Fisheries on June 28th, 2017. The Ministry's mandate includes management and operation of facilities related to the seafood industry. Minister of Agriculture, Land and Fisheries, Senator the Honourable Clarence Rambharat, was present to receive the keys from National Energy President Dr Vernon Paltoo.

In his opening remarks, Dr. Paltoo stated that the facility was part of the Port of Galeota Phase 1 Project. He explained, "This facility was conceptualised to promote the economic sustainability of the community". Dr Paltoo noted that this project illustrated National Energy's commitment to the advancement of non-energy-related industries in the local economy, "as we believe that diversification is key to the economic sustainability and well-being of this region".

The facility provides space for fisherfolk to carry out activities such as boat and net repair. It is also equipped with fuel, water, ice and cold storage, as well

as parking spaces, washrooms and 25 lockers. In receiving the keys to the compound, Minister Rambharat expressed his gratitude to National Energy for providing such an asset to the community. He expressed his intention to optimise use of the premises in the near future and was pleased with the overall condition of the compound. He urged community members to ensure that the facility is maintained at all times.

These sentiments were echoed by Member of Parliament for Mayaro, Mr Rushton Paray, who suggested that the fish landing facility could be used for multiple purposes that would benefit the residents of Mayaro and Guayaguayare.

Following the formal proceedings, the minister along with Senator Avinash Singh, Parliamentary Secretary in the Ministry of Agriculture, Land and Fisheries, Mr Paray and other specially invited guests were given a tour of the facility. After the handover, guests enjoyed a meal of seafood delicacies, including smoked fish prepared by a local vendor.



LABIDCO NEWS

First CGCL Shipment Arrives at Port of Brighton



The first shipment arrives for CGCL

June 7th, 2017 was a marquee day for La Brea Development Industrial Company Limited (LABIDCO) as the first shipment for Caribbean Gas Chemical Limited (CGCL) natural gas to a petrochemicals complex was unloaded from the Port of Brighton. This shipment signified the culmination of months of preparation which involved the repairs to Berth 2, reconstruction and widening of the LABIDCO main estate corridor and relocation of utilities along the roadway.

Seagoing vessel, the MV DA AN, arrived at Berth 2 from Masan, Korea during the evening of June 6th, 2017. The vessel was loaded with 112 items of cargo, weighing over 9,900 revenue tonnes (combination of weight and volume), to be discharged at the port. These included modules for CGCL's methanol and dimethyl ether production plants – the topping column which weighs 86.448 metric tons and the refining column which weighs 570.4 metric tons.

As manager of the Port of Brighton, LABIDCO played a crucial role in planning and coordinating the operation by ensuring that the dock was available for use without obstructions. Stevedoring services were

also provided for the efficient discharge of cargo and LABIDCO monitored the entire process, ensuring that the port's safety and security procedures were followed throughout. National Energy also provided critical towage support to ensure the safe berthing and unberthing of the MV DA AN, which sailed away on June 11th, 2017.

Prior to the arrival of the MV DA AN, Berth 2 was repaired by contractor, Soletanche Bachy Cimas, under the supervision of the Infrastructure Planning and Development Department. These works were completed in time for the loading out of BPTT's Juniper 'topsides' in January 2017.

CGCL is a joint venture enterprise led by the consortium of Mitsubishi Gas Chemical Company Inc., Mitsubishi Corporation and local conglomerate, Massy Holdings Ltd. Mitsubishi Heavy Industries Limited and NGC are equity investors of CGCL, with NGC having a 20% stake in the natural gas to petrochemicals complex project. The complex will be sited on the Union Industrial Estate, which is managed by National Energy. The company will continue to provide support to CGCL plant construction works.



PPGPL NEWS

PPGPL Leads NGC Group's Participation in UWI World of Work



The team engages students at UWI WOW 2017

On Thursday April 6th and Friday April 7th 2017, NGC and its subsidiaries - National Energy, NGC CNG and PPGPL - participated in the annual University of the West Indies (UWI) career fair - UWI World of Work (WOW). The fair offers students attending the university the unique opportunity to attend mock interview sessions, network, and visit company booths to obtain more information about the diverse range of businesses operating in the Trinidad and Tobago landscape.

With over 500 students attending UWI WOW, it is also a great place for companies to meet potential candidates for upcoming employment opportunities and vacation internships. This year's session allowed NGC and its subsidiaries to have discussions with some bright and innovative young people, and accept resumes for the companies' CV bank.

This year, PPGPL led the effort to organise the representation from the group of companies. Mock interviews were facilitated by PPGPL employee

Ameela Ragbir, while booth representatives for the days were as follows:

Thursday April 06th

- Shardana Beharry National Energy
- Tamara Blackman National Energy
- Shiva Persad NGC
- Marisa Ragoonath NGC

Friday April 07th

- Stacey Ramsamooj National Energy
- Tamara Gildharry National Energy
- Lyndon Mohammed NGC
- Robert Poon King NGC

Participation in the UWI WOW fair is perfectly aligned with the core values and strategies of NGC and its subsidiaries. Our collective commitment to Corporate Social Responsibility initiatives continues to help us build capacity within our communities and the wider society, through a variety of programmes targeting areas such as education, health and sport.



NGC CNG NEWS

CNG Vehicle Management System

RFID Coming for CNG Vehicle Safety

The NGC CNG Company Limited and Fujitsu Caribbean (Trinidad) Limited have signed a contract to operationalise a nationwide CNG Vehicle Management System (CVMS) which will improve the security and safety of drivers who operate compressed natural gs (CNG)-fuelled vehicles in the country.

The contract was signed by NGC CNG President Curtis Mohamed and Jean-Paul Dookie, EVP and Head of Managed Infrastructure Services, Fujitsu Caribbean on April 25th, 2017.

The CVMS will see the installation of Radio Frequency ID (RFID) tags on all CNG-powered vehicles. The RFID tags will be recognised by custom-designed reader antennas, which will be built into the nozzles that dispense CNG fuel at service stations across the country. When the driver of a RFID-enabled vehicle wishes to refill with CNG fuel, the software that supports the solution will scan the RFID tag on the vehicle and dispense fuel only after the tag is validated. A tag is valid once the CNG system was installed by a licensed converter and the vehicle meets the inspection schedule of the CNG kit and tank.

This automated system is designed for speed, accuracy, reliability, safety and security. It allows for quick authorisation at the pump, both online and offline, expediting refuelling for CNG customers. The core vehicle database will be stored locally in a secure datacentre and used for vehicle verification at the pump. Fuelling data will also be captured directly from the pumps allowing fleet managers greater insight into usage patterns for ongoing system planning, as well as enhanced reporting for performance and

safety purposes. From a security point of view, RFID tags offer a more secure solution than other forms of identification, reducing fraud and protecting customers' information.

According to Curtis Mohammed, the CVMS will be a key part of the CNG industry in Trinidad and Tobago. He noted, "NGC CNG is operating in the realm of fuel supply and demand creation, as well as ensuring that a sustainable industry is put in place with the necessary institutional supports and fortifications. A CNG vehicle inspection programme is, therefore, critical for ensuring a safe and sustainable industry for the ultimate customer, as well as supply stations".

Fujitsu Caribbean has designed the CVMS for Trinidad and Tobago with its solution partner, Orpak USA, which is a leading international provider of automated, vehicle fuel dispensing systems. Orpak has an installed base of 25,000 fuelling stations and five million vehicles worldwide.

Jean-Paul Dookie said, "We are proud to partner with NGC CNG on this important milestone. The successful implementation of this solution will ultimately have a direct impact on the uptake of the CNG initiative within the population of Trinidad and Tobago. It will also drive an increase in environmental sustainability and improve safety and security of drivers using CNG fuel. We are very happy to be working with NGC CNG, who will now join other leading fuel retailers worldwide operating Orpak FuelOmat on their networks".

The CVMS will be installed and tested first on NGC's own CNG vehicle fleet before it is rolled out across the country.

CNG Supply Now in Arima

CNG is now available again in the eastern borough of Arima, with the opening of the NP Tumpuna North station in June 2017. The station, which was opened to the public on June 16th, is ideally located at the intersection of the Churchill Roosevelt Highway and Tumpuna Road. Previously, Arima was served by a CNG supply at another NP station on the Eastern Main Road and also at the compound of Automotive Components Limited on O'Meara Road.

The Tumpuna North station is the second to be opened on the Churchill Roosevelt Highway in 2017, the first being the NP Ramco station in Orange Grove Trincity in January. At the opening ceremony, owners

Dr. Rochard & Joy Santo were proud to have opened the first station in the country with both liquid fuel and CNG at the same time. This station has two CNG dispensers and four hoses and can dispense fuel for more than 700 vehicles daily. Tumpuna North is now the 11th CNG station nationwide serving the public and fleets. NGC CNG is mandated to increase the number of CNG supply points across the country to 30, as well as increase the demand for CNG.

Two other CNG supply points will be opened in the next quarter - NP Starlite Diego Martin and NP Chaguanas.



TO REFLECT ON THE BEAUTY THAT SURROUNDS US HERE IN TRINIDAD AND TOBAGO

On the heels of the recently NGC co-sponsored UTT's Ocean Governance Symposium, we are reminded that healthy oceans are essential for humankind: as climate regulators, as a source for global food security, human health and as an engine for economic growth. The crashing waves taken on the Trinidad coastline remind us that oceans are also home to a rich and fragile biodiversity.

Photo by Nic-Connor Alexander



Orinoco Drive, Point Lisas Industrial Estate, Couva, Republic of Trinidad and Tobago, West Indies. P.O. Box 1127, Port of Spain

Tel: (868) 636-4662/4680 Fax: (868) 679-2384 Email: info@ngc.co.tt Website: www.ngc.co.tt