

THE NGC GROUP OF COMPANIES CORPORATE QUARTERLY JOURNAL

# GASCO news

VOLUME 29 | NO.3 | OCTOBER 2019



IN  
**SERVICE**  
OF A  
**NATION**





#### 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

Nicola J. Ghouralal  
Head, Communications  
and Brand

#### SUB-EDITOR

Nadine Ramharack  
Public Relations Officer I  
Communications and Brand

#### EDITORIAL COMMITTEE

Nicola J. Ghouralal  
Nadine Ramharack  
Sheila McIntosh  
Sonelle Dalton-Brown  
Roger Sant

#### CONTRIBUTORS

Nadine Ramharack  
Carlton Thomas  
Kellee Ann St. Clair  
Shane Wilson

#### PHOTOGRAPHY

NGC Archives  
Marlon James  
Shaun Rambaran

#### DESIGN

Lonsdale Saatchi and Saatchi  
Advertising Limited

#### PRINTING

SCRIP-J

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

©2019 Material in this publication,  
with the exception of photography,  
may be reproduced once credit is  
given to GASCO NEWS.



## PRESIDENT'S MESSAGE

Reflecting on our journey  
as an energy company

| 01

### BUILDING THE ECONOMY



Orange is the new black gold -  
NGC backs the orange economy

| 02

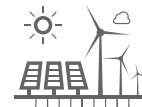
Supporting downstream  
development in T&T for 40 years -  
National Energy's contribution to  
the national economy

| 09

The diversification quest: PPGPL  
accepts the challenge

| 14

### GREENING ENERGY



Focusing energy on conservation  
and efficiency

| 19

Think again - a closer look at  
CNG's value proposition

| 25

### SERVING COMMUNITIES



Filling the gap - NGC invests in  
vocational training for youth

| 29



## PRESIDENT'S MESSAGE

# Reflecting on our journey as an energy company

**A**NNIVERSARIES call for reflection – on where you've come from, where you find yourself, and where that path is taking you. This quarter, three milestones prompted us to give thought to our journey as a company.

On August 22nd, NGC commemorated 44 years of operations, while our subsidiary National Energy turned 40 on September 7th. Amidst our celebrations, on August 31st, Trinidad and Tobago marked its 57th anniversary as an independent nation.

The narratives raised during those two weeks of celebration allowed us to see, clearer than usual, the intersections of our stories – that of company and country. Everything that we achieved and continue to achieve as a Group of Companies, has an impact on the history and development of our nation.

### IN SERVICE

In this issue of *Gasco News*, we spotlight just some of the ways in which we have served or are serving the people of Trinidad and Tobago.

Wealth generation is the most common yardstick of added value. While NGC's contributions to national coffers are often cited, the contributions of subsidiaries such as National Energy and Phoenix Park Gas Processors Limited (PPGPL) are less known. The fact is that over its 40 years of existence, National Energy has been an axis of economic development. PPGPL has been equally important to our story, more so now that it is diversifying its business to strengthen its income stream.

Importantly, the NGC Group has also been adding value by assuming leadership roles in clean energy conversations and efforts. NGC has a direct voice in national discussions around what can be done to help the country off the starting block through its participation in a Cabinet-appointed clean energy committee. Meanwhile, CNG remains key to the national effort, and NGC CNG has strengthened its case to consumers.



*Mark Loquan, President, NGC*

Any talk of service must necessarily come round to our portfolio of Corporate Social Responsibility investments. The hosting of Carifesta XIV in Trinidad and Tobago this year trained a spotlight on the value of the arts and culture to the Caribbean identity and economy. NGC appreciates that value, and continued to invest in such causes as NGC Sanfest, NGC Bocas Lit Fest and tassa and steelband sponsorships. This year, the Company also sought to deepen its impact on local film, partnering on a special programme with the Trinidad and Tobago Film Festival.

In addition to the creative industries, NGC looked to build capacity in local trades, by investing in vocational skills training for young people through a strategic partnership with Police Youth Clubs and the Youth Training and Employment Partnership Programme (YTEPP). As with all other social investments, NGC's goal was to empower our citizens to build sustainable futures.

### FOR COUNTRY

It is a perspective too often overlooked, but seeing the big picture impact of our work over past years makes us appreciate the need for us to keep growing and giving back. If our stories are linked, then how we work and what we aim to do will ultimately have bearing on the future of Trinidad and Tobago. These are high stakes but we embrace the opportunity to be of service to our nation. ■

**Mark Loquan**  
President





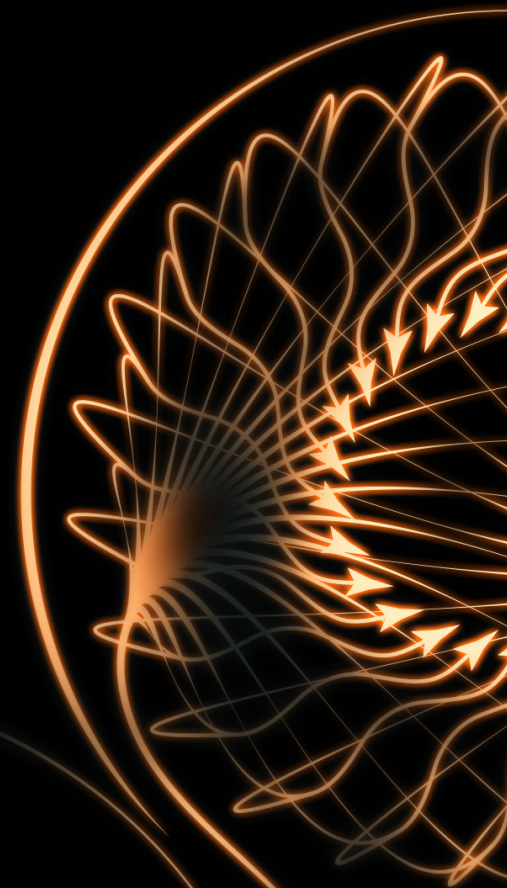
Building the Economy

**Orange**

is the new

**black gold**

NGC backs the  
**orange** economy











**Y**OU have heard of ‘black gold’, and certainly ‘green technologies’, but if the term ‘orange economy’ makes you think you are settling in to read about citrus, you would be forgiven the error.

Although the term is unfamiliar, everyone knows the orange economy, and many contribute to and earn a living through it. Coined by the Inter-American Development Bank (IDB) based on historical associations with the colour, the orange economy refers to ‘the set of activities that, in combination, allow for ideas to be transformed into goods and services whose value can be based on intellectual property’.<sup>1</sup> It subsumes the creative and cultural industries such as crafts, design, fashion, film, music, publishing and visual and performing arts (among several others).

The United Nations Conference on Trade and Development (UNCTAD) reported that in 2012, the value of the global market for creative goods approximated US\$509 billion – more than twice the figure for 2002 (US\$208 billion).<sup>2</sup> A mere six years later, PricewaterhouseCoopers put revenues from global entertainment and media – just a slice of the orange economy – at US\$2.1 trillion.<sup>3</sup> The seemingly inexorable growth in this space can be tied to fewer global barriers, greater cultural and economic exchange and near-universal access to digital marketing platforms.

What is the significance of this development? For Trinidad and Tobago and the region at large, where ‘black gold’ would have earned us money, and ‘green technologies’

<sup>1</sup> <https://publications.iadb.org/en/orange-economy-infinite-opportunity>

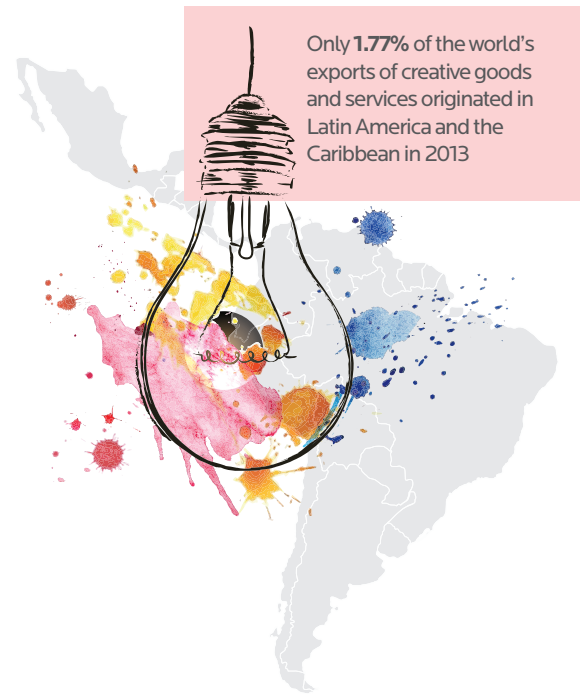
<sup>2</sup> [https://unctad.org/en/PublicationsLibrary/ditcted2018d3\\_en.pdf](https://unctad.org/en/PublicationsLibrary/ditcted2018d3_en.pdf)

<sup>3</sup> <https://www.pwc.com/gx/en/entertainment-media/outlook-2019/entertainment-and-media-outlook-perspectives-2019-2023.pdf>



Revenues from  
global entertainment  
and media in 2018

US **\$2.1** trillion



are saving us money, in the orange economy, there is untold wealth that we have not begun to tap.

## TAPPING GLOBAL MARKETS

Latin America and the Caribbean, for all their rich heritage and diversity, have grossly underrepresented themselves in world markets for creative products. According to UNCTAD, the last available data (2013) showed that only 1.77% of the world’s exports of creative goods and services originated in the region.<sup>4</sup> Today, more than ever, there is opportunity for these countries to profit tremendously by leveraging the orange economy and participating more actively in that market.

One area that is particularly ripe for investment is the space of entertainment and media. Online databases, social media and streaming services, as well as the Internet of Things, have revolutionised how people consume media. Programmes no longer need to be aired on a network at a fixed time to reach audiences, nor are they limited by geography. Music can be uploaded to such sites as YouTube and travel the world within seconds. This makes it much easier for content creators to enter the market.

This ease of entry has a downside. The media is saturated with content, which puts pressure on its producers to be original in order to get noticed. Here, the fact that Latin America and the Caribbean have contributed relatively little endogenous content to global media can work in their favour.

<sup>4</sup> <https://publications.iadb.org/en/orange-economy-infinite-opportunity>





## Film

Zoning in on film, the region is often represented by external artists as a virgin space with exotic people and cultures. If those people were to assume more agency in storytelling, it would make for standout TV and cinema. Trinidad and Tobago has a particularly rich history and complex heritage, which lend to intriguing plotlines. The language alone is intoxicating enough to attract viewers - as many would attest, foreigners fawn over the lilting Trini accent.

Interestingly, UNCTAD noted that of the 1.77% of creative goods and services that the region marketed globally, less than one third was directed intra-regionally.<sup>5</sup> This statistic suggests that locally produced content can even be a lucrative novelty among Caribbean audiences. In fact, just as people are drawn to the exotic, they are also drawn to stories to which they can relate. Seeing their own faces, hearing their own vernaculars and seeing their personal dramas played out on the big (or small) screen can be very appealing. What this all means is that from many angles, there are opportunities for local media producers to tap into a multibillion-dollar global industry. The catch, of course, is that the standard of media production has soared, and good stories can only take a film so far - equally important are the acting, costuming, direction, musical score, and so on. Therefore, the extent

to which local film and TV producers can have success in regional and international markets will depend to a large extent on the investment made in the filmmaking process, both in terms of capital injection and training.

Recognising the potential and need in this area, NGC has been partnering with the trinidad+tobago film festival (ttff) for many years. Having an outlet through which to market local films is a necessary precondition for the growth of a filmmaking industry, and through this partnership, NGC has helped build that platform for the development of local directors, producers, cast and crew. More specifically, NGC's investment has supported training and networking for filmmaking professionals; international promotion of local media content through ttff marketing campaigns; and annual screenings which connect stories with audiences, raising the profile of and demand for local film.

In 2018, the Company decided to take its support further by sponsoring the ttff's Shooting Stars initiative, geared towards training young filmmakers at the secondary school level. Four schools were selected to participate in the pilot project - San Juan North Secondary, Couva East Secondary, Holy Faith Convent, Penal and Signal Hill Secondary School, Tobago.

In Phase One of the programme, students received training in project management, time planning and basic filmmaking skills. The output of the first phase were short

<sup>5</sup> <https://publications.iadb.org/en/orange-economy-infinite-opportunity>



Winners of ttff Shooting Stars competition – Couva East Secondary School



films produced by each school, which were premiered at the ttff/19 in July 2019. Over the next two years, students will be trained more intensively in scriptwriting and the overall film production process to build proficiency and prepare them for possible careers in the industry.

## Literature

Despite the dominance of audio-visual media, books continue to be a popular source of entertainment. Grand View Research Inc. projected that based on market drivers and the industry's growth rate, the global books market will be valued at US\$124.2 billion by 2025.<sup>6</sup>

As is the case with film, there is room for more regional voices in world literature. One of the initiatives making commendable progress in bringing Caribbean voices to the fore has been the NGC Bocas Lit Fest. Since its inception in 2011, the festival has turned the page for scores of regional writers, poets and dramatists whose work needed an outlet and platform.

NGC's involvement with the festival as title sponsor was born of a desire to attract and connect more writers and readers to regional literature. In the same way that

<sup>6</sup> <https://www.grandviewresearch.com/press-release/global-books-market>



a film industry cannot flourish without a public, this industry can only generate real economic value if there is a healthy market. Going further, if the market exists, more 'suppliers' will emerge, competitiveness will drive standards up, and in a virtuous cycle, more consumers will be drawn into the market.

Through sponsorship of this festival, NGC has enabled unpublished writers to sell their work, aspiring writers to access fundamental training and advisory services and poets to perform for captive audiences. Since the start of the festival, thousands have been introduced to regional authors and their work. Of these, many new readers are based outside the region, as the NGC Bocas Lit Fest has shared Caribbean stories at international book fairs and festivals, and writers spotlighted by the festival have received international awards and recognition. With the footprint of the local industry expanding, there is greater scope for profitable and sustainable employment in this area, which NGC sees as a welcome development for the economy.

Beyond that, the festival is stimulating cultural tourism by drawing literary enthusiasts to Trinidad and Tobago every April into May. In 2017, Penguin Random House: The Writer's Academy named the NGC Bocas Lit Fest one of the top 20 literary festivals of the world, which has no doubt fanned the interest around this event.

Besides this festival, other organisations have helped raise the profile of regional literature through the platform of theatre. NGC recently backed a local production of Derek Walcott's acclaimed work *Ti-Jean and His Brothers*, which was performed in September 2019 for Secondary School students. Such events not only help preserve local stories, but they make regional literature accessible, drawing more readers to the genre.

## BUILDING THE TOURISM SECTOR

In the course of relic-hunting for visitors from abroad, have



NGC Bocas Lit Fest (Photo by Marlon James)





you ever noticed - perhaps with some embarrassment - that many souvenirs emblazoned with such mottos as 'Trini to de Bone' simultaneously disclose themselves to be 'made in China'? (Better send your guests back with a fruit cake instead).

The propagation of tangible and intangible artefacts of culture is a core activity within the orange economy. If we are serious about building tourism in Trinidad and Tobago, then we must anticipate and service increasing demand for local culture.

We need to pre-emptively invest in building our creative industries for production of handicrafts, clothing, miniatures and collectibles, books, officially licensed music and artwork, to name a few. Importantly, besides policy and infrastructure, there must be investment and encouragement to help people become career artisans, producing goods and services for purchase.

In addition to local trinkets, tourists also seek experiences of local culture and traditions. Theatre, concerts, festivals and tours are all immersive products with big appeal for visitors and even local tourists. To ensure the quality of these products is of sufficiently high caliber to attract interest and income, the respective exponents of culture must have the requisite talent and training. In some instances, the cultural draws may be traditional art forms that are not widely practised. These must be deliberately engaged to keep them alive (such as traditional African and Indian dance). It is therefore critical that investment attention be given to programmes that seek to develop capacity in the arts and culture, both in the interest of preserving art forms and honing talent.

A number of NGC's signature sponsorships address these concerns. One of NGC's first long-standing commitments was with the Lydian Singers, a decorated local choir that performed with accompaniment from a steel orchestra, African and tassa drummers, and dancers from folk and ballet disciplines. Sponsored by NGC from 1991 to 2014, the choir provided an avenue for young people to develop as artistes in song and music, and to build a name for Trinidad and Tobago in international circles through their extensive travels and impressive repertoire.

Another long-standing sponsorship is the San Fernando Junior Arts Festival, NGC Sanfest. This is the longest-running festival of its kind, going strong at 49. Every year, this event provides a platform for Primary and Secondary School students to train and compete in an array of categories, ranging from song and dance to the visual and dramatic arts.

What distinguishes this festival is its perennial emphasis on exposing youth to traditional art forms. On the Sanfest stage, folk songs and dances (First Peoples, African, Indian, European), steelpan, tassa and African drumming, as well as folk characters and theatre have a



*NGC Sanfest participant*

place alongside contemporary renditions. There are also categories for ceramics, handicrafts, fabric design and print making. This varied syllabus is helping to build a cadre of artisans and artists capable of producing and performing at the highest level, which is exactly what our country will need to support the tourism industry in the future.

In addition to this flagship festival, NGC also supports national music through sponsorship of steel and tassa bands. The steelpan is a quintessential symbol of Trinbagonian culture, and Caribbean culture as a whole, and it would be a tragic loss for the country if capacity in the industry were to wane. NGC has been supporting unsponsored steelbands for over 15 years and today, is title sponsor of three - NGC Couva Joylanders, NGC La Brea Nightingales and NGC Steel Xplosion. The Company not only invests in outfitting the bands for competitions, but in training to manufacture and tune the instruments, music literacy for band members, and most recently, scoring of compositions for posterity.

Two tassa bands receive a similar level of support to build capacity and sustainability. Under NGC's sponsorship, the NGC Sweet Tassa Academy grew from a young band into a nationally recognised group with both male and female members. Creditably, the band was able to move from just performing tassa to teaching the art form to students in both Primary and Secondary schools across the country. More than 100 young persons have received training from the NGC Sweet Tassa Academy, strengthening the future of the instrument and opening avenues for those so minded to start bands of their own. This doubles the impact of NGC's investment.



*Ladies of NGC Sweet Tassa Academy flanked by their Manager, Lenny Kumar (left) and NGC Community Relations Officer, Alistar Narinesingh (right).*

In addition, the NGC Sweet Tassa Academy as well as the second supported band, NGC Bao Simba Entertainers from Tobago, have both performed internationally, marketing tassa drumming in the USA and carving a space for the instrument in global music. Raising the profile of the art form in this way will no doubt help tempt more visitors to our shores and keep this industry viable for its artistes.

## SECTORAL INTERSECTIONS

Another reason why investment in the orange economy is worthwhile becomes evident when we look at its intersections with other productive sectors. The creative output of artists and performers has intrinsic value, but when paired with other sectors, that value can be multiplied.

Just think of marketing for any product or service. Music, performance and visual art are utilised as cornerstones of marketing strategies - think of catchy jingles, funny commercials and attention-grabbing billboards. Big business, small business, private and public organisations all rely on advertising, and by extension, on the services of the orange economy.

In social services, creative arts are used for rehabilitative purposes and to pre-empt delinquency among disadvantaged youth. As an example, NGC gives support to five Police Youth Clubs, and the arts feature in their curriculum of activities to keep young members

productively engaged. Participants are exposed to steelpan, tassa and African drumming as well as dance, which not only occupy their time, but open opportunities for them to convert these arts into income generators.

Looking at the bigger picture, perhaps one of the most compelling reasons to invest in the orange economy is that it is much more stable than other economic sectors. Since it is based on ideas and talent, its potential to generate value does not fluctuate wildly with the market as other commodities do. For example, during the 2008 global recession, creative goods and services suffered a reduction of just 12%, compared to oil exports which contracted 40% in 2009.<sup>7</sup> Faced with many uncertainties around the future of energy, it is in Trinidad and Tobago's interest to build other stable economic bases to bolster its balance sheet going forward.

## SQUEEZING THE ORANGE

Without question, the orange economy deserves study, validation and investment. If real attention is paid to the value that it contributes, often times invisibly, and the wealth it can generate for the country on so many levels, then perhaps it will become a front-burner focus for development agendas. In the meantime, NGC will continue the work it has been doing for over 20 years to support creative industries, build capacity and mobilise the sector to take a leading role in development. As the IDB exhorts, we must aim to squeeze as much juice from the orange as we can. ■

<sup>7</sup> <https://publications.iadb.org/en/orange-economy-infinite-opportunity>





Building the Economy

# Supporting downstream development in T&T for 40 Years

National Energy's contribution  
to the national economy





## INTRODUCTION

In 1975, Trinidad and Tobago's downstream energy-intensive sector had one ammonia plant. The Coordinating Task Force oversaw the completion of Tringen 1 in 1977 and in 1979, the Task Force was formalised into the National Energy Corporation of Trinidad and Tobago (National Energy) and given a specific mandate to "guide the development and management of oil, gas and other mineral resources of Trinidad and Tobago and to assist the Government in the formulation of energy and industrial policy and strategy" (NEC Annual Report, 1980). Forty years later, Trinidad and Tobago (T&T) has a significantly different energy landscape.

Multiple reports and articles have accurately captured the relative scale and importance of the downstream energy sector and its economic significance to The National Gas Company of Trinidad and Tobago Limited (NGC), the Government and the wider T&T economy.

However, there is less emphasis placed on the amount of work that went into successfully achieving the suite of projects that have transformed the energy sector of T&T over the past 40 years.

## GAS-BASED BUSINESS DEVELOPMENT

Armed with a team of highly skilled personnel with expertise in both gas business and project development, National Energy actively carried out its mandate to develop the downstream energy and energy-intensive industry locally. This involved the simultaneous development of projects on behalf of the Government of the Republic of Trinidad and Tobago (GORTT), together with the infrastructural work necessary to support plant construction and exportation of product.

National Energy also built a reputation as a reliable marine services provider, which was essential in its thrust

*National Energy tug - NEC Majestic*







Supporting downstream development in Trinidad and Tobago for 40 years | CONTINUED

to continue the gas-led industrialisation process by attracting new entrants. With the expansion of multi-user marine terminals at Savonetta, port facilities at Brighton, the establishment of world-class porting facilities at Galeota and the acquisition of an expanded fleet of tugs and workboats, National Energy has also continued to ensure that the downstream and wider energy industry remains competitive.

The natural gas to petrochemicals complex under construction in La Brea is the latest example of projects which National Energy played a crucial role in realising. While the plant is expected to begin production in 2020, the work that National Energy embarked on in support of this project actually commenced in 2012. As part of its typical project development and business development activities, National Energy carries out extensive work including: the assessment of projects on behalf of, and often times, in collaboration with, Ministry of Energy and

Energy Industries (MEEI) and GORTT representatives; the promotion of targeted energy subsectors to international investors; provision of infrastructural and marine support services to the industry; and serving as the main facilitation agency for investments in the downstream energy and energy-related industries.

These project and business developmental activities are carried out in support of the development of energy and energy-intensive industries that have the potential to deliver significant returns to T&T. As Barclay (2004) outlined, the process of attracting and successfully securing foreign investments into the country “is not an effortless process.” In fact, a critical feature of the work of National Energy over the last 40 years is the often-unseen value brought in the attraction and assessment of projects on behalf of the State, a task which continued from the days of the Task Force, the merger with NGC and the re-emergence and reaffirmation of the business development mandate from 2004 onwards. This is critical since analyses allow the State to better understand the best arrangements for balancing country competitiveness with value creation for any approved project concept.

## NATIONAL ENERGY'S ECONOMIC CONTRIBUTION

In assessing National Energy's economic contribution, it is not a straightforward process of calculating the taxes paid to GORTT, dividend contributions, payments to suppliers, employee benefits and funds voluntarily invested in social projects across its host communities. As the State's project development and investment facilitation agency for downstream energy and energy-intensive projects, National Energy's contribution to the economy is really in the value it brings in successfully attracting, facilitating, and developing projects on the one hand and supporting their activities by providing the relevant land and marine infrastructural support on the other. It is in these core areas that National Energy has contributed to the realisation of the policy directive given in 1977 to “take the more difficult road of iron and steel, ammonia, urea and methanol.”<sup>1</sup>

As a result, over the last 40 years, Trinidad and Tobago was able to attract roughly US\$11 billion<sup>2</sup> in foreign direct investment (FDI) for metal processing, ammonia,

<sup>1</sup> E. Williams (1976), cited in “Eric Williams and the Emergence of the National Energy Sector” (2005), Nineteenth Lecture in the Dr. Eric Williams Memorial Lecture Series.

<sup>2</sup> See Furlonge and Bahaw (2009) “A Review of the Dynamics between the Energy Sector and the Economy of Trinidad and Tobago.” NGC Gasco News. Also recall the US\$1 billion Methanol to DME investment in La Brea. Further, note that the replacement cost for this US\$11 billion in capacity, using data from Farrell (2019) and the Oxford Energy Institute (2019), is equal to roughly US\$30 billion.





methanol, urea, LNG and other niche downstream gas-based products for the export market. In fact, an IDB report by Khadan and Ruprah (2016) highlighted that while there has been limited diversification in the wider Trinidad and Tobago economy, the energy sector “has been continuously diversifying since the late 70s both in terms of products as well as in export markets.” While recognising the contributions and collaborations that would have led to the successful realisation of most, if not all, of these projects from other State organisations, their existence is no doubt a testament of the major developmental effort that National Energy would have provided and the continued reliable provision of export support services.

### Economic impact to wider Trinidad and Tobago economy

By now one would agree that National Energy’s efforts have created not just significant, but sustained value to the economy of Trinidad and Tobago. It is a long-known fact that the wider energy sector is the single major

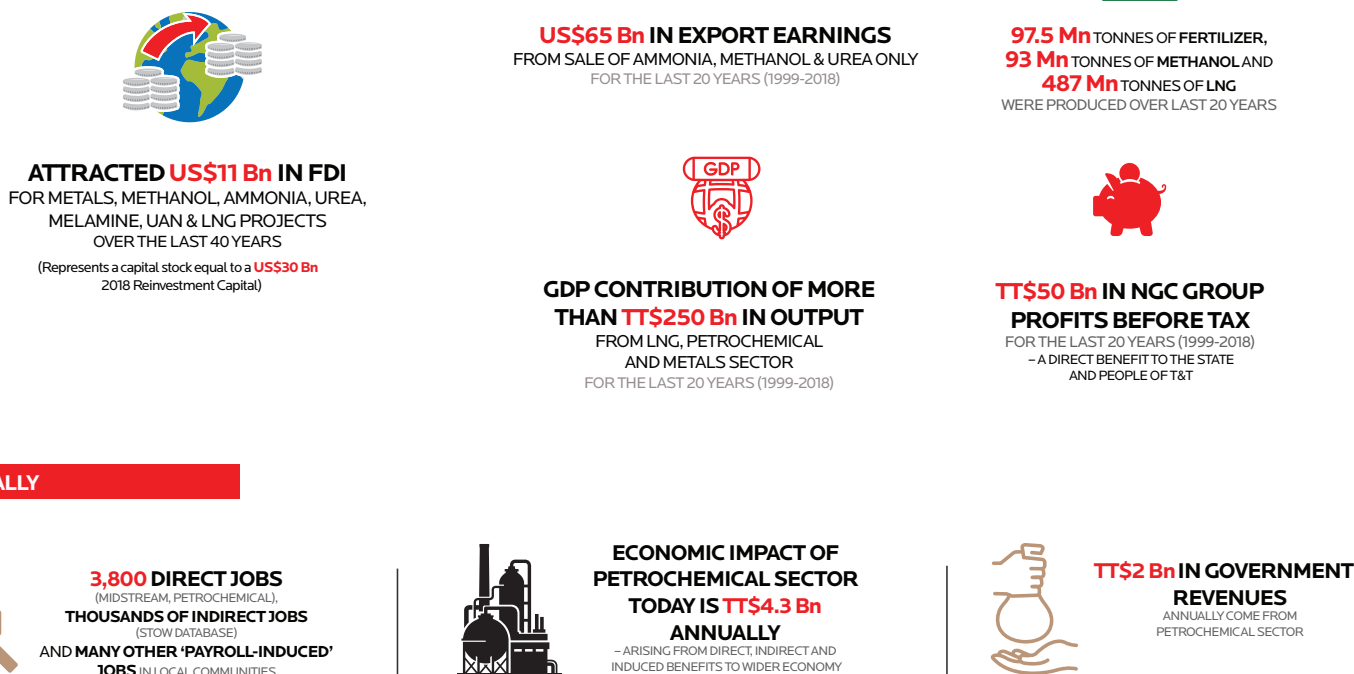
driver of the economy and that the natural-gas based sector has increasingly become more important to the economy over the decades. Figure 1 provides a summary of the impact on Government revenues, jobs and GDP contribution, among others.

### Output

A review of official data from the Central Statistical Office (CSO) indicates that the petrochemical sector contributed on average 5.4% to nominal GDP over the last two decades. Petrochemical and LNG real GDP averaged a share of 13.5% of total real output over the 2013-2018 period.<sup>3</sup> In fact, Central Bank data highlights that the downstream gas-based sector over the same 20-year period, accounted for 97.5 million tonnes of fertilizer exports and 93 million tonnes of methanol. Further, for the last 20 years, approximately 487 million tonnes of LNG were produced as well as large volumes of intermediate and downstream iron and steel product.

<sup>3</sup> See Ministry of Finance’s “Review of the Economy 2018.”

**FIGURE 1: ECONOMIC IMPACT OF NATIONAL ENERGY’S EFFORTS ON ECONOMY**







Supporting downstream development in Trinidad and Tobago for 40 years | CONTINUED

## GORTT Revenues

National Energy's efforts have also provided a sustainable stream of revenue to the State via taxes from the companies. A cursory review of the NGC Group's financials from Annual Reports for the last 20 years (1999-2018) reveals that as much as TT\$50 billion in profits before taxes were generated by NGC (including National Energy) on behalf of GORTT.

Further, the wider metals, petrochemicals and LNG sectors have contributed significantly to GORTT revenues annually. Atlantic for example, in the last six years (2013-2018) has paid over TT\$10 billion in direct corporation taxes to GORTT. Revenue data from the Ministry of Finance revealed that between 2009-2017, taxes and levies received from ammonia and methanol producers amounted to TT\$17.35 billion. Over this same period, annual petrochemical sector revenues ranged between TT\$1 billion and TT\$3.1 billion. Over the last two decades therefore, roughly TT\$2 billion, or 7% of Government revenues, came from the petrochemical sector annually.

## Employment

While the energy sector does not employ a large number of workers directly in relation to capital deployed, through the activities of the sector, indirect employment is generated. Estimates suggest the petrochemical sector employs roughly 1,700 - 2,000 persons. However, if we include the direct jobs from LNG and across the NGC Group (~ 1,030) we get another 1,800 direct jobs that are primarily supported as a result of the existence of the mid and downstream gas industry in Trinidad and Tobago.

Further, significant indirect labour is utilised from contractors who do specific activities on behalf of companies, such as the provision of maintenance, transportation, security and other short-term services during plant turnarounds. In fact, the Energy Chamber's STOW database has over 22,000 workers registered to work in the energy sector.

## Foreign exchange and export earnings

The downstream gas-based industry is also an important source of foreign exchange earnings for the country. In fact, from a revenue perspective alone, Central Bank data shows that National Energy's efforts over the decades have directly and indirectly resulted in cumulative foreign exchange earnings of US\$70 billion (or TT\$476 billion) arising from the exportation of ammonia, methanol and urea over the 1985-2018 period. For the last two decades, this figure was US\$65 billion. Over the 2005-2015 period,

the petrochemical and LNG sub-sectors contributed on average 21% and 23% towards export earnings respectively (UN Comtrade).

## CONCLUSION

When account is taken of the indirect and induced impact the downstream petrochemical industry has had on the economy, the significance of the efforts made by National Energy to support such development is even more astounding. In reiterating that the overall real contribution to the local economy extends far beyond plant output and the value fetched via exportation, Farrell (2019) noted that for only the petrochemical players, "the total impact on the economy, applying a multiplier of 1.9, is US\$642 million or TT\$4.3 billion annually". A critical point to note is that gas prices and volumes are lower than what was realised in the earlier decade. Similarly, if Atlantic's average direct contribution is used for the last five years, we get an annual average contribution of TT\$3.2 billion annually.<sup>4</sup>

Trinidad and Tobago today benefits significantly from the efforts that National Energy has consistently made in supporting the transition of the energy sector from a mono-commodity sector (oil) to one in which the export suite now involves the exportation of multiple gas-based and energy intensive products – all supporting "a very definite industrialisation process."

Forty years on, National Energy is poised to continue the process of value creation for the GORTT, the NGC Group and the people of Trinidad and Tobago. ■

## REFERENCES

- Barclay, Lou Anne (2003). "Foreign Direct Investment – Facilitated Development: the case of the Natural Gas Industry of Trinidad and Tobago." *Oxford Development Studies*.
- Central Bank of Trinidad and Tobago. (various years). "Annual Economic Survey".
- Central Statistical Office. (various years). *Annual Statistical Digest*.
- Farrell (2018) "At a Point of Inflexion: The Downstream Petrochemicals Industry in Trinidad & Tobago."
- Furlonge, H.I. and E. Bahaw. (2009). "A Review of the Dynamics between the Energy Sector and the Economy of Trinidad and Tobago." *NGC Gasco News*.
- Khadan, J. and I. Ruprah (2016). "Diversification in Trinidad and Tobago: Waiting for Godot?" IDB Policy Brief; 256. Inter-American Development Bank.
- Ministry of Finance. (various years). "Review of the T&T Economy."
- NGC Gasco Magazine* (Various Years)
- NGC Annual Reports* (Various Years)

<sup>4</sup> See Atlantic's Sustainability Reports (2012-2018).



Building the Economy





The diversification quest:

# PPGPL accepts the challenge







*The Panama Canal has opened up NGLs trading in the Americas*

FOR such countries as Trinidad and Tobago, dependent on producing and exporting primary goods, there is a desire to revamp the economy. This aspiration is driven by the vision of creating a more diverse production and trade structure that would widen its economic base. With revenues dependent on commodities such as minerals, oil or gas, these countries are particularly vulnerable to natural depletion, natural disasters, unpredictable weather conditions, and in some cases geopolitics.

As such, they walk a tight rope. They grapple with issues of supply and price shocks which lead to lower revenues, economic instability and depleted resources. Any variability in revenue, especially at a sustained level, can cost a country its development ideals. Often this can lead to lack of investment in key areas such as infrastructure, utilities, healthcare and education. It also starves the country of the opportunity to divert funds

from the primary sector to reinvest in other sectors such as manufacturing and tourism.

#### **Why seek diversification?**

Diversification offers countries the opportunity to create structural shifts in the productive assets of their economy. This inevitably results in the movement of economic resources within and between economic sectors which results in the transformation of a nation. The base of economic contributors becomes wider, creating a financial “cushion.” Diversification could be horizontal, which entails venturing into new goods and sectors to reduce dependence on a narrow range of commodities; or vertical, which involves moving throughout the value chain of a commodity to increase its worth.

In Trinidad and Tobago, this particular effort has not come without challenges. Weaning away from the





primary, and in particular the extractive sector, is not a clear-cut transaction. It is especially daunting if there are no viable replacements for the tax revenues or foreign exchange previously available through the extractive sector. Whilst there is a prevailing expectation that diversification efforts should be propelled by the executive arm of government, perhaps it is the right moment to adopt an alternative view. At this juncture of our 57th independence anniversary, local companies need to contemplate and reframe their contribution to national development through the diversification thrust.

PPGPL has taken up the mantle and embarked on that mission.

### **A call to adventure**

PPGPL continues to provide a significant service to the energy sector. Since it commenced operations in June 1991, the company has processed natural gas, aggregated and fractionated the natural gas liquids (NGLs) propane, butane and natural gasoline. PPGPL has ensured that the local downstream sector can run safe and efficient operations by delivering natural gas which is free of heavy hydrocarbons, which could negatively affect equipment on downstream petrochemical plants. PPGPL runs a 24-hour loading operation and supplies all its product from its docks. Its facilities include 1.25 million barrels of storage and two docks which can supply both pressurised and refrigerated vessels. This allows the company to serve smaller markets that have limited storage, as well as larger markets that can accommodate larger cargo sizes. PPGPL has also established itself as the NGL hub of the Americas and has marketed its NGLs to not only Latin America, but on occasion African and Pacific territories.

This business model has served the company well for many years, however the local energy sector has changed. It now operates within the constraints of low natural gas production, lower gas quality and natural gas streams with less suspended NGLs. "Wet gas" indicates a high average ratio of NGL to gas in production; "dry gas," a low ratio. If gas production declines, NGL output inevitably follows that direction as well. Drier gas production has meant lower NGL production and narrowing market options, which has negatively impacted PPGPL's revenue potential. Through the 90s to mid-2000s, PPGPL barrels served as the main anchor for several Caribbean territories that relied on the company to feed their propane and butane requirements. This has changed with the US shale revolution.

### **A quest isn't a quest without challenges**

The shale revolution has altered the relationship of gas to NGLs. Traditionally, NGLs were a by-product of gas

production. As gas prices remained at sustained lows during the course of 2009-2011, upstream operators increasingly turned to shale discoveries containing liquids with the focus on NGL-rich discoveries, such as the Eagle Ford and Marcellus/Utica/Permian basins. With developers increasing liquids, gas has gone from being the main product to a co-product, with some explorers purporting that it has become the by-product of NGL production. This has also had an impact on the traditional relationships between crude, gas and NGLs. In 2000, gas was still considered a "poor relation" of oil and though seen as an increasingly important part of US energy use, incremental supply was expected in the form of LNG. The shale revolution overturned these assumptions and changed the relationship of gas to NGLs. Shale development shifted NGLs from a by-product of gas output to a co-product, and increasingly as gas prices appeared to remain low (average US\$2 per MMBTU), NGLs have become a production driver, just like oil.

The United States is now at the forefront of NGL production and is the largest producer of NGLs in the world, accounting for more than 1/3 of global production. The US has benefitted from increased operating experience, new well fluids, better surveying methods while decreasing costs and increasing operational efficiency. Domestic NGL production has more than doubled in the 10 years since 2008, reaching 1.381 billion barrels in 2017. Ethane and propane are the two most prevalent NGLs, and together they account for more than 70% of all domestic production. The increased NGL production has had a dampening effect on prices which has made Mont Belvieu prices the lowest, and now the primary benchmark for all supply territories to compete. Infiltration of US barrels into Latin America has also been occurring by larger ships that can traverse the Panama Canal allowing increased volumes of product to be transported to the west coast of Central and South America. According to IHS Markit, 35% of the traffic going through the Panama Canal is now propane cargoes.

As NGL production has risen, it has increasingly outstripped domestic consumption, which has remained relatively flat since 2010 (EIA). This has led to increased exports to territories such as Canada, India, Japan, and China. Though these territories are the largest importers of US NGLs, there has been a significant influx of US NGLs into the Caribbean and other Latin American territories. As such, the Caribbean region has become more dependent on US supplies and PPGPL's market footprint has been impacted. Whilst these events have impacted PPGPL's profitability, it has not daunted the company's spirit. In fact, it has sharpened its focus.

Greek philosopher Heraclitus, coined the phrase "Change is the only constant in life". This statement may be cliché,



*PPGPL has marketed NGLs to Latin America, Africa and even Pacific territories.*

but for PPGPL, it is a beacon for action and a spark to prepare for opportunities to come.

It means that we have deliberately redefined our business, and remodelled our ambitions to shed the skins of glories past, to rise and focus on the new opportunities to come. The company understands that there are many in the community who have a stake in the viability of its business. It also acknowledges its additional responsibilities to shareholders as it is the main underlying asset in Trinidad and Tobago NGL Limited (TTNGL) which is listed on the Trinidad and Tobago Stock Exchange. Our national contribution therefore, must extend beyond dividends and corporate social responsibility. PPGPL is responding to the diversification quest by diversifying its business model, and creating a business machine that can be sustainable despite the challenges.

Early on when shale gas was just a random reference in conversation and not the buzzword it has now become, PPGPL, through its enterprise risk management system, detected the early warning signals and recognised the implications to its business. Back then, increased shale resources signalled the potential of increased competition with more US barrels entering the region and reduced market share. PPGPL recognised that it could not compete on scale, but it had strategic assets, and intangible value drivers that would allow it to consolidate its efforts and ensure that its barrels still went to its niche markets within the Caribbean territory.

Under the umbrella of physical product trading, PPGPL entered into collaborations and pursued more direct sales to end markets rather than through traders. This has allowed the company to capture more value along its supply network. Whereas in the past lower production

meant underutilised storage assets, in 2019 there is full asset optimisation. The company has sought creative means to leverage its storage assets and import facilities. These have been able to create multiple revenue streams beyond traditional sales transactions.

The Business Development team is also not standing still. They have been pursuing inorganic growth opportunities regionally and internationally. One element of this growth has been in the area of technical services. In 2018, PPGPL executed a Technical Services Agreement (TSA) with Ghana National Gas Company Limited (GNGC). This included the development of a risk-based inspection (RBI) program for GNGC, and training of their staff to sustain the programme in the future.

Whilst the organisation's Commercial and Business Development teams forge ahead, the company continues to make its systems more robust. These include making its technology, market intelligence and strategic risk management platforms more predictive and value-driven. The company recognises the role that data analytics will continue to play in helping it to position itself for the future. It is therefore integrating it into all its business operations. The PPGPL team has taken stock of who they are and who they want to be. They have demonstrated this commitment by embarking on the redesign of culture to one that is constructive and fully endorsed by all employees. PPGPL remains steadfast in its safety objectives, and believes that people-centered leadership will continue to support those ideals.

PPGPL has made some gains but the best is yet to come.

It isn't over yet. The quest continues... ■





Greening Energy

# Focusing energy on conservation and efficiency





## INTRODUCTION

Since 2017, one of the themes dominating conversations in local energy has been the need for an energy policy focusing on Energy Conservation and Energy Efficiency (EC&EE). Advocates for change point to features of the domestic energy environment:

- Shifts in hydrocarbon fortunes
- International environmental commitments
- Higher upstream cost for natural gas
- Aged energy intensive industries
- Wasteful energy culture

Evidence of just how energy intensive Trinidad and Tobago is (based on energy consumption per unit of Gross Domestic Product) was highlighted in the latest Tracking SDG7 Energy Progress Report in 2019. Trinidad and Tobago is among the top five most energy intensive countries in the world. Benchmarked against other countries, our per capita consumption is more than double the global average and almost four times the average for Latin America and the Caribbean (LAC).

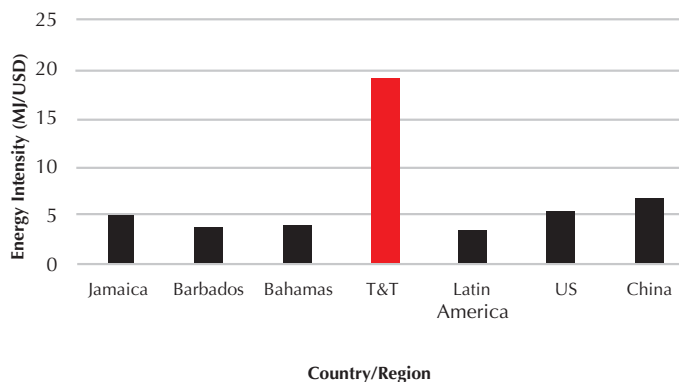
Within the last decade, the Government of Trinidad and Tobago has developed strategic plans incorporating elements of EC&EE. These include:

- 2011 National Climate Change Policy
- 2015 Strategy for Reduction in Carbon Emissions
- 2018 Revised National Environment Policy
- 2016 – 2030 National Development Strategy (Vision 2030 plan)

Guided by these plans, renewable energy (RE) is expected to be integrated into power generation by 2021 to diversify the country's energy mix. However, the Minister of Public Utilities has insisted that a hierarchical approach focusing on conservation and efficiency to address wasteful energy behaviours is necessary for building a sustainable energy future.<sup>1</sup>

Further evidence that RE alone is insufficient for sustainably meeting growth in energy demand was

Per Capita Energy Intensity 2016



presented in BP's Statistical Review report in 2019. Despite renewables occupying their highest share yet of the global energy mix, greenhouse gas emissions levels are similar to those of 30 years ago.

Bearing all this mind, in June of this year, the Government established a Cabinet-appointed multi-sectoral committee to develop a five-year action plan to help the country transition to more responsible energy use. Several NGC Group representatives were appointed to this team and have been working with other stakeholders to design a strategy that can help Trinidad and Tobago expedite its efforts in the area of improving energy productivity.

## WHERE IS EVERYONE ELSE?

In determining best fit strategies for the local context, it was useful to first explore regional and international progress in the energy transition.

The value proposition of EC&EE on a global scale was highlighted by studies from the International Energy Agency (IEA), which indicated that between 2000 and 2017, the world avoided 12% increase in energy demand. Countries that have excelled in EC&EE implementation



<sup>1</sup> "Energy policy necessary for efficiency" – Business Guardian (Thursday, July 4, 2019)





## Focusing energy on conservation and efficiency | CONTINUED

have achieved this through the following mechanisms:

- Developing a long-term national energy efficiency plan with goals and targets for various sectors;
- Supporting institutions to promote the execution of policies and implementation of actions;
- Mandatory and voluntary policies with regulations for minimum energy performance requirements for appliances and equipment, mandatory building codes, fuel economy standards and targets for industry;
- Political support for driving the transition;
- Enabling environment through switching incentives, technologies and special funding arrangements for green financing;
- Public awareness and education around tangible benefits; and
- Continuous monitoring of progress.

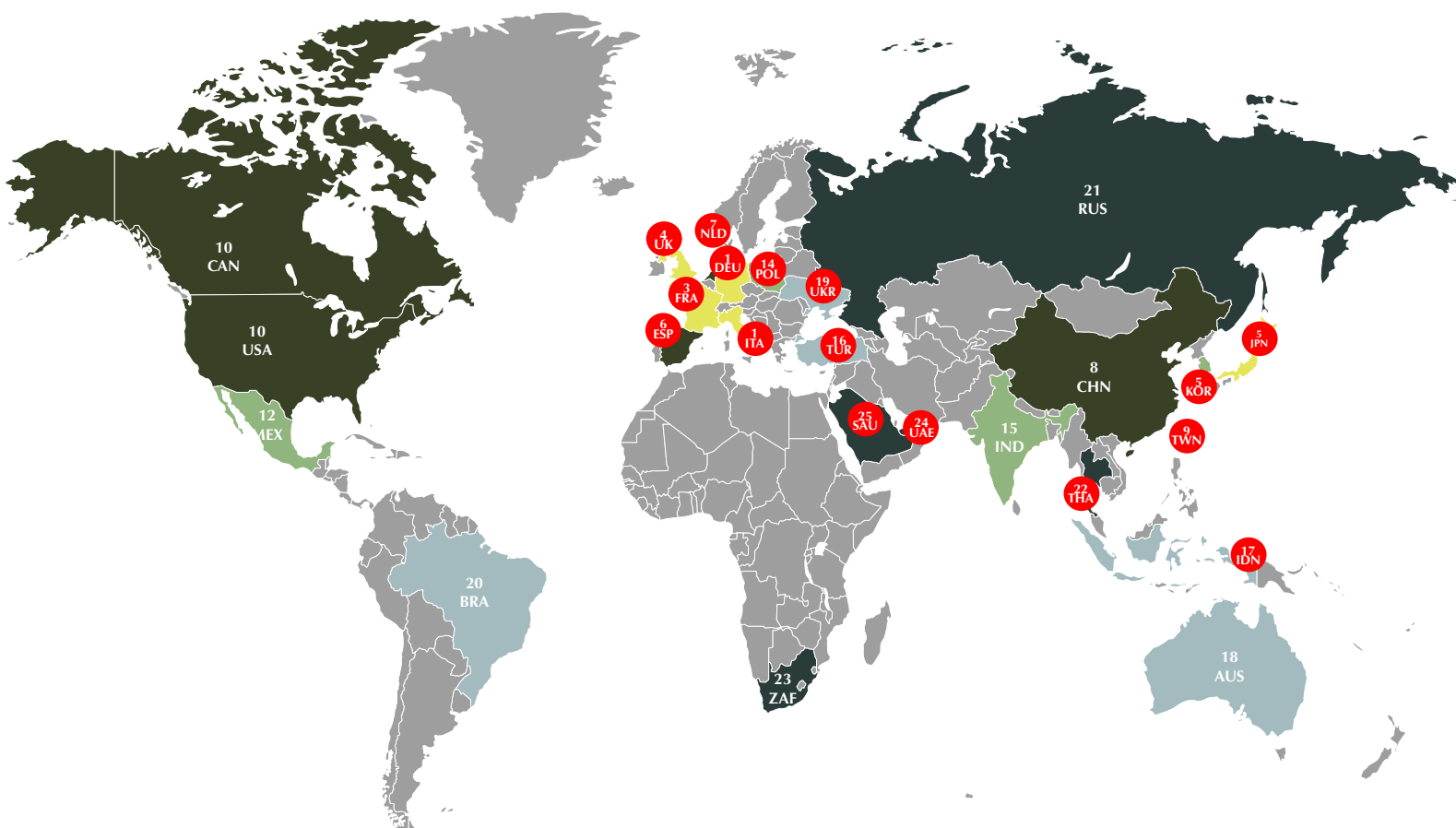
### Latin America and the Caribbean

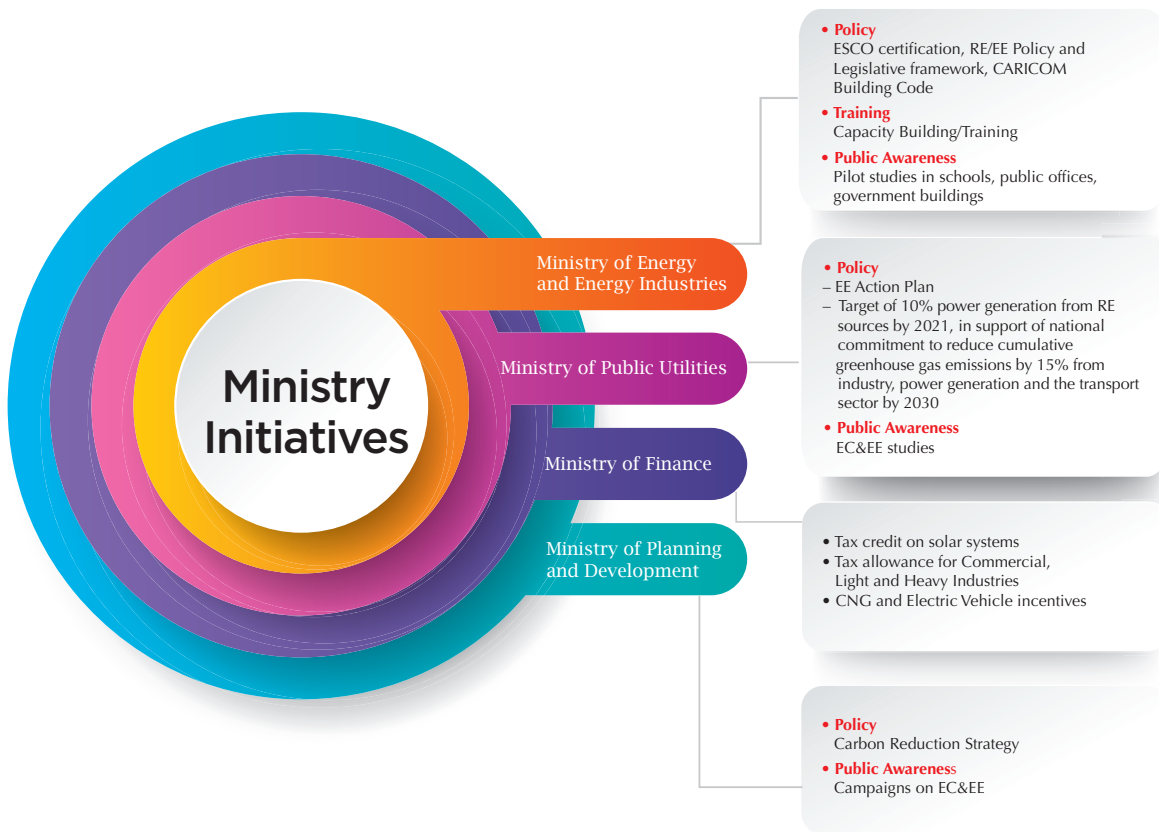
Within the region, the American Council for an Energy Efficient Economy has ranked Brazil and Mexico within

their top 25 most energy efficient countries in the world. Brazil has been recognised for its performance in the transportation sector through effective passenger-vehicle fuel economy standards, while Mexico has benefited from policy measures implemented since 2013 for reducing energy intensity within their industrial sector.

Countries such as Chile, Uruguay, Colombia, Ecuador and Panama have intermediate policy frameworks for energy efficiency. Progress has been made through efforts in national planning for EC&EE, capacity building for EC&EE entities, public awareness and demonstration campaigns, establishing incentives and regulations for sectors via energy labelling schemes and minimum energy performance standards.

In terms of CARICOM, in 2019 the CARICOM Regional Organisation for Standards and Quality (CROSQ), International Code Council, and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) released a regional energy efficiency building code guide to assist member states with building





## National Agency Initiatives



Figure 1 showing different EC&EE initiatives being pursued





## Focusing energy on conservation and efficiency | CONTINUED

efficiency and conservation efforts in both commercial and residential construction. This initiative was developed as part of the ongoing implementation of the Caribbean Sustainable Energy Roadmap and Strategy (C-SERM) programme that is aimed at encouraging the adoption of more effective technologies for renewable energy, energy conservation and efficiency.

Most countries have developed national energy policies focused on reducing emissions and improving energy security with greater priority placed on RE development. Few states within the region have placed a core focus on EC&EE. Jamaica, Barbados, Antigua and Barbuda and St. Vincent and the Grenadines are among the few countries with energy policies reflecting national targets for reducing energy intensity and engaging national programmes targeting the public sector. Greater momentum is however expected to occur in EC&EE activities as there is a greater regional focus on building energy system resilience against climate change.

### LOCAL CONTEXT – PUZZLE PIECES COMING TOGETHER?

Compared with regional and international efforts, the pace of deployment of EC&EE strategies in Trinidad and Tobago has been sluggish. Within the local context, much attention has been placed on the RE option for diversifying the local energy mix. In the context of EC&EE, however, fragmented organisational efforts were being pursued (Figure 1).

The Government acknowledged that a more collaborative approach was required for capitalising on EC&EE opportunities. This led to the formulation of the multi-sectoral committee to deliver an action plan by September 2019 for discussion. The plan was submitted and is currently under review.

#### The EC&EE Action Plan for T&T

The primary objective of this plan was to ensure that EC&EE secure and support the national vision to achieve developed nation status by 2030. It follows the sort of structured approach used by most countries for ensuring a strategic national framework is in place to quantify short-, medium- and long-term targets and accelerate the uptake of EC&EE measures.

Strategies and actions for initiatives identified on the plan were centred around specific goals that placed emphasis on the following themes:

- Embedding an EC&EE consciousness within the local energy culture
- Maximising economic output of fossil fuel resources
- Accelerating the uptake within the industrial,

commercial, residential, Government, transportation and power sectors

- Reforming institutional barriers to enable autonomy for implementing EC&EE policies and programmes
- Assisting Tobago with its campaign to become an Eco-Tourism destination
- Stimulating activities for research and development
- Ensuring EC&EE standards are implemented to regulate consumer end-usage.

The plan identified opportunities throughout the following sectors:

- LNG
- Petrochemical
- Non-Petrochemical
- Industry
- Power Generation
- Government
- Commercial and Residential
- Transportation

The vision of the plan after the first five-year cycle in 2024 included:

- Improved grid reliability and resilience
- New industry and jobs created to support ongoing activities
- Increased foreign exchange earnings due to diversion of natural gas from power to higher-earning economic sectors
- Increased downstream productivity
- Decreased public maintenance cost
- Decreased utility bills for consumers
- Reduction in greenhouse gas emissions

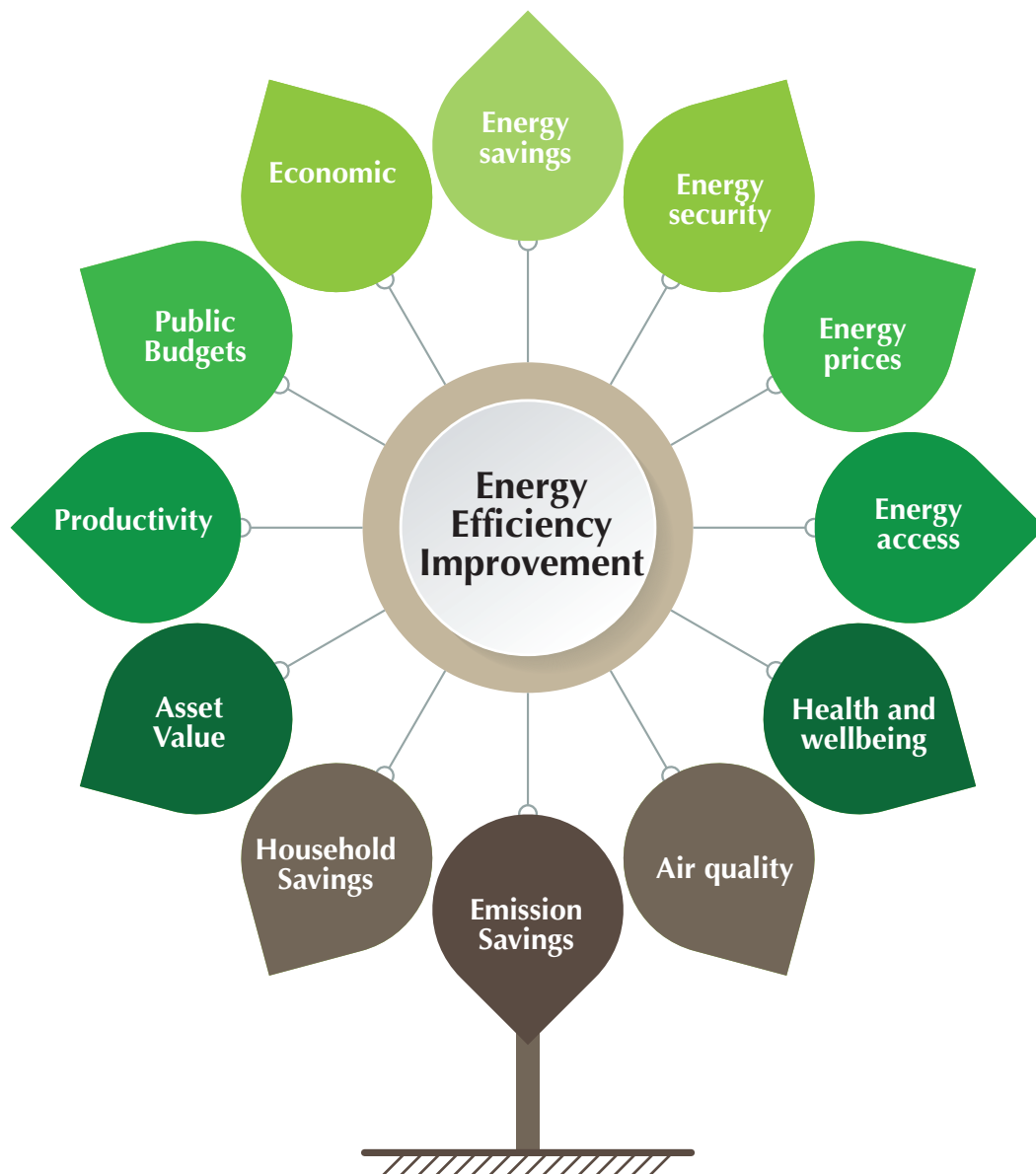
In addition to these, the IEA highlighted multiple benefits for societies adopting EC&EE policies (Figure 2).

Once the plan is approved, the document will be used to help transition Trinidad and Tobago to greater energy efficiency and conservation. Early initiatives should include:

- Adjustments to fiscal measures encouraging EE products
- Development of an EC&EE agency to oversee sustainable energy
- Implementation of measures by Government Ministries to improve energy efficiency

### THE NGC GROUP STAKE

From the NGC Group perspective, it is important that work is accelerating to implement a national EC&EE agenda. The liberation of gas molecules from power generation for use in the downstream sector has been an outcome



*Figure 2 showing benefits of energy efficiency improvement*

for which NGC's leadership has been lobbying over the past few years. This is an outcome that can be achieved with greater EC&EE. For its part, National Energy has been actively involved in pushing industry toward EC&EE through its Super ESCO programme which aims to help companies audit and improve their energy consumption and efficiency. Of course, Compressed Natural Gas (CNG) continues to be a viable solution for cleaning up the transportation sector, and NGC CNG continues to build the domestic market for this fuel.

With EC&EE already a focal point of the NGC Group's

work programme, having a voice in the Cabinet-appointed committee to design a national action plan was extremely useful. Not only did the Group bring an authoritative perspective to discussions, but its work will have been integrated into a broader national offensive. In partnership with other stakeholders, efforts can be multiplied, and much more can be achieved for Trinidad and Tobago.

The Group stands ready to support the implementation of the national EC&EE Action Plan over the coming months. ■





Greening Energy



**Think again – a closer look  
at CNG's value proposition**



Think again - a closer look at CNG's value proposition | CONTINUED

**N**GC CNG Company Limited has an important mandate – to expand the use of Compressed Natural Gas (CNG) as a vehicular fuel in Trinidad and Tobago, for the sake of national economic development and in support of global environmental sustainability.

This is a tall order for any entity to fulfil, let alone a small, state-owned company staffed by 23 persons. For President Curtis Mohammed, the task is made that much harder by past and present misguided commentaries and false impressions about the product the company works to market.

In defence of his company's cause, Mr. Mohammed seeks here to defuse some of those misconceptions and bring some measure of reason to conversations around the future of the CNG industry.

#### Whither CNG?

In the automotive industry, discussion is heavy around electric vehicles (EVs) and hybrids, with many expecting them to make deep incursions into the transportation sector. In Trinidad and Tobago, this expectation feeds a belief that the CNG industry will soon be dead in the water.

It is certainly true that car manufacturers are responding to demand for greener transportation technology through EV and hybrid development, but they are not the only options being explored. Natural gas is the cleanest burning fossil fuel and is projected to play a major role in the global energy mix to 2040 as the world transitions to a lower carbon future. The fuel's compatibility with decarbonisation strategies has led to increased investment and innovation in the natural gas vehicle (NGV) industry.

The catalogue of the world's largest car manufacturer gives evidence of this. The Volkswagen Group currently offers 17 natural gas models in different vehicle segments, and two others are to be launched soon.<sup>1</sup> Moreover, at the company's 2019 annual general meeting, its Chairman announced that CNG will continue to play an important role for the group in the future, on the basis of being a 'sufficiently proven, immediately available, efficient and cost-effective' fuelling option.<sup>2</sup>

The investment decisions of this and other automotive giants should give assurances that NGVs and CNG have

<sup>1</sup> <https://www.volkswagen-newsroom.com/en/press-releases/volkswagen-group-and-industry-partners-from-the-energy-economy-further-expand-cng-mobility-5111>

<sup>2</sup> Ibid

T&T TO CUT EMISSIONS FROM THE  
TRANSPORTATION SECTOR BY



**30%** BY  
2030

.....

a future alongside electric and hybrid vehicles, as the technologies will cohabit the global market for years to come.

Now, there are those who would be quick to point out that just because more NGVs are coming to market doesn't mean that in Trinidad and Tobago, people will choose to buy them over EVs, hybrids or gasoline-powered vehicles. Be that as it may, there are compelling reasons why CNG will nevertheless remain relevant and important as a fuel in the local context.

#### The urgency of change

The first and most obvious reason has to do with climate change. Trinidad and Tobago has made a promise to the international community to cut emissions from the transportation sector by 30% or 1,700,000 tonnes CO<sub>2</sub> by the year 2030. If latest forecasts tell it true, national commitments across the world have gone from being desirable to essentially obligatory if the planet is to avoid irreversible warming and destruction.

If we use the US Environmental Protection Agency's estimate that each gallon of gasoline burned emits approximately 8,887 grams of CO<sub>2</sub> (10,180 grams for

.....

**8,887**

GRAMS OF CO<sub>2</sub>  
EMITTED WHEN WE BURN  
GASOLINE



**10,180**

GRAMS OF CO<sub>2</sub> EMITTED WHEN WE  
BURN DIESEL





Think again - a closer look at CNG's value proposition | CONTINUED

Almost  
**1,000,000**  
REGISTERED VEHICLES  
(AS AT AUGUST 2019)

diesel),<sup>3</sup> then in order for our country to meet its target, we would need to displace hundreds of millions of litres of liquid fuel with cleaner options. In the context of a national consumption total of just over 1.1 billion litres (2018), the required displacement is significant. Moreover, effecting the necessary change within the space of 10 years is a tough ask.

In Trinidad and Tobago, there are almost 1 million registered vehicles (as at August 2019). Market data suggests that each year, the total will grow by around 3%, with a relatively small percentage of vehicles being retired as new ones come in. Realistically, only a fraction of the new vehicles will be hybrid, electric or NGV. Moreover, a person purchasing a new green vehicle will not destroy his or her gasoline-powered car if it is functional, but more likely sell it for someone else to use. As a result, the net emissions impact of introducing new green vehicles into the mix would be soft in the medium term.

Similarly, while shared mobility solutions such as carpooling and public transportation can play a part, as can reduction in time spent on the road, behaviours can be difficult to change, especially when they have cultural and systemic roots. Depending on persons to drive less or rideshare to reduce emissions would only take us so far.

CNG conversion offers a workable solution to these issues. CNG burns cleaner than other fuels, outputting

up to 95% fewer harmful emissions. Since every internal combustion engine can be converted to run on CNG, this puts a cleaner automobile within reach of every vehicle owner. The same drive-time and routines can yield lower emissions without the need for vehicle replacement or behaviour adjustment. Furthermore, the cost of conversion is orders of magnitude lower than the cost of purchasing a new hybrid or electric vehicle, which makes it more pragmatic for large-scale buy-in and uptake. Importantly, since conversion can be done fairly quickly, this solution can deliver appreciable results within an acceptable timeframe.

What this all means is that CNG conversion stands a better chance of success in Trinidad and Tobago than other emission reduction strategies for the transportation sector. If we are serious about curbing emissions – and there is no doubt we need to be – then the value of CNG cannot be overstated or overlooked.

### The gas scenario

When comments are made against the viability of CNG, they are often followed with some variation of the argument that EVs are the future. However, such commentary overlooks an important consideration as far as Trinidad and Tobago is concerned. At present, natural gas availability is tight, and a close look at the numbers reveals, somewhat counterintuitively, that widespread CNG use can be easier accommodated in the gas allocation budget than electric vehicles.

<sup>3</sup> <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>



Think again - a closer look at CNG's value proposition | CONTINUED

Currently, Trinidad and Tobago's electricity is generated using natural gas. Introducing more electric vehicles into the market will increase the demand for both. In a hypothetical scenario where 10,000 electric cars are brought into the system, about 14.2 million standard cubic feet per day (mmscfd) of additional gas will need to be fed into power generation.<sup>4</sup> In contrast, the equivalent number of CNG vehicles will only demand 7.4 mmscfd.<sup>5</sup>

Although the Government has set a target of generating 10% of electricity using renewable sources by the year 2021, this has been slow to realise. Until and unless renewables are incorporated in a meaningful way in power generation to displace natural gas, electric vehicles will require more gas for operation than will CNG vehicles.

### Dollars and sense

Since 1974, citizens of Trinidad and Tobago have enjoyed access to affordable, subsidised fuel. This ensured that whatever the international price of oil, citizens would not feel the effects at the pump. This subsidy was partly funded by a production levy on the income of oil companies, but when oil prices were high, the levy alone could not pay the difference to keep prices stable. The Government therefore had to step in and supplement. In the past five years alone, subsidising the price of fuel has cost the Government almost \$4 billion. Indeed, prior to that time, some years would have incurred subsidies at the level of \$4 billion per year.

For the period 2015 to 2019, diesel received the highest share of total subsidy at \$2.6 billion. The primary reason for keeping diesel artificially low (to a greater extent than other fuels) was because most commercial and public transportation fleets rely heavily on this fuel. Increasing the price of diesel would have inflationary effects on the prices of consumer goods and services.

Understanding the fuel market is key to appreciating the role that CNG has to play. There is little question that the fuel subsidy will eventually be removed, and as fuel becomes more expensive - diesel in particular - the public will be forced to pay more for food and other consumables.

<sup>4</sup> Assumes average electrical car needs 6kW of power to charge per day.

<sup>5</sup> Assumes average NGV uses 7.5 lge of CNG per day for the fuel as CNG as well as the natural gas for associated power generation to run the CNG compression units.



However, the unsubsidised price of CNG will be several dollars lower than all other options.

Businesses therefore have substantial financial motivation to convert their fleets to CNG to maintain healthy margins. The same is true of cars for hire such as taxis and maxis. Keeping their costs low will keep their net income comfortable. Even the general public will see value in switching fuels to increase their disposable income if prices of goods and services rise. CNG will therefore have a critical function in the country's economic future. It will be - as indeed it already is - the fuel that saves people money.

### The sticking point

So, if we accept that CNG has value on so many levels, why is there pushback? If CNG is the cheapest fuel, why haven't more people converted to capture the savings on offer? The problem is not public opposition to using the fuel. It boils down to the fact that in this instance, you have to spend money before you can save. Parting with hard-earned dollars today on the promise of future gains can be difficult for the average and even the informed individual to do.

This is not unique to the CNG story. Think of energy saving appliances or new gadgets such as solar-powered water heaters. Unless someone is in immediate need of a refrigerator or water heater and is open to considering an energy saving model, chances are that person is not going to switch a perfectly functional appliance for an energy efficient upgrade (at a higher price) in order to save on energy costs down the road. Spending thousands upfront to save dollars on every bill going forward is something many people would find it hard to do, even if the return in the long run is exponentially higher than the investment.

This inability to take the long view is what prevents some persons from seeing the real value in CNG. Annual fuel savings would amount to thousands, but savings are not accrued and paid off as a lump sum. Savings are pocketed with each fill, and for this reason, the persons who make the switch are more often drivers for whom that extra \$100 (and in the case of taxi drivers, \$1,000) a week is worth a lot, or whose income margin is closely tied to fuel expenditure, such as taxis and maxis.

NGC CNG has tailored its marketing strategy with an understanding of these behaviours and consumer motivations. However, past a certain point, it will fall to the consumer to recognise and appreciate the payoff from CNG from the perspectives of personal finance, the national economy and the world environment.

This can only happen if the public is willing to listen past the noise to the truth about CNG's value proposition and commit to making the switch. ■





Serving Communities



## Filling the gap – NGC invests in vocational training for youth

*Michael George learns to braid*





*"In capitalist societies, the law of supply and demand is what drives markets and makes people money. Very simply, if a good or a service is in high demand but supply is limited, then the price of that good or service goes up. If a business can offer products that people need or want but cannot easily find elsewhere, then that business is bound to succeed. The job market operates on the same principle: skillsets that are in high demand will fetch high prices."*

- LISA BURKETT, MANAGER, CORPORATE COMMUNICATIONS, NGC

NGC has been directly supporting the work of the Trinidad and Tobago Police Service (TTPS) since 2013, when the Company began sponsoring five Police Youth Clubs (PYCs) in its fenceline communities. The PYCs connect youth in their respective communities with support systems in the form of tutoring and mentoring, as well as opportunities to pursue extra-curricular activities. With many club members coming from broken or low-income homes, the PYCs have been delivering an invaluable community service over their years of operation, keeping young people on a positive path.

This good work notwithstanding, in 2019, NGC was moved to help its sponsored PYCs in Laventille Road, Couva, Penal, La Brea and Mayaro achieve even greater impact. The Company wanted to go beyond remedial and pre-emptive interventions to invest in a programme that would teach employable skills. With the understanding that not all children are academically inclined or have the wherewithal to take their studies far, a programme of vocational study would give them a platform on which to build viable careers.

This is a philosophy supported by movements in the global job market where technical and vocational skills are gaining ground - educational institutions in more developed countries are already mainstreaming such courses. Over the past few decades, the job market in Trinidad and Tobago has also evolved. Today, the numbers entering the workforce with tertiary level degrees are increasing, people are retiring at an older age and more persons are working multiple jobs. It is therefore tougher

for young people to find employment.

For many, the solution lies in entrepreneurship and self-made businesses, particularly in the trades. Where people qualified for white-collar jobs are in high supply and have to compete for limited vacancies, there are wide market gaps for individuals with vocational training. NGC therefore saw skills training as an avenue to position club members alongside ripe opportunities in the job market.

On another level, poverty is a major trigger of juvenile delinquency, especially when exacerbated in broken homes by the loss of a breadwinner. For many young offenders, crime is the means to an income. Communities would therefore profit greatly if their youth could be set on a path for gainful employment.

Departing from the premise that skills training could enable young people to build sustainable futures, help fill market gaps as well as moderate the temptation of criminal activity, NGC decided to approach the Youth Training and Employment Partnership Programme (YTEPP) to tailor a special programme for its sponsored PYCs.

So it was that over the school vacation period, July through August 2019, 138 young men and women aged nine to 25 from in and around Laventille, Couva, Penal, La Brea and Mayaro accessed customised YTEPP courses in hair braiding and weaving, barbering, electrical installation and introductory electronics.

## THE VALUE OF AN OPPORTUNITY

### "I want to break the stigma"

In a community threatened by gangs and career criminals, it takes courage to choose a different path. Twenty-one year-old Michael George joined the Laventille Road PYC when he was 14, a decision he says he will never regret.

"I joined the PYC because I wanted a change in my life and somewhere I could discover my full potential and talents."

Born and bred in Laventille, Michael is the eldest of four children, and was raised largely by his mother and grandmother. "They worked hard and did the best they could to raise me in the right way. Being the eldest child, I know that I have to set an example for the younger children."

Since joining the club, Michael has done just that, owning every opportunity he was given. He is now the Public Relations Officer of the Youth Arm of the PYC, captain of the steel orchestra and enrolled in different club programmes such as martial arts and boxing. When the





*Graduands from the YTEPP programme with NGC, PYC and YTEPP representatives*

opportunity presented to be part of a YTEPP-delivered course, Michael jumped at it. The course he elected to pursue was hair braiding and weaving.

"I chose this course because I wanted to be one of the guys to break the stigma that comes with males being hairdressers. I want to be one of those people who could create that change and influence other males who may want to do the same but are afraid."

Youth Club leader, Curtis Paul, praised the young man's outlook and spirit. "We live in a time where a lot of stereotypes are being challenged. Michael George will be the example to follow in future." According to Paul, the training Michael received will serve him well in business as several female club members have already indicated their interest in having their hair done by Michael.

Michael agrees: "I think this course will help me in the future because I have developed a skill that I can use to start my own business and probably teach others what I have learnt."

He expressed deep gratitude to the PYC for its role in guiding young men and women from his community. He added:

"NGC and YTEPP have been doing a wonderful job where the youths are concerned. They should keep these courses going because I have seen the good it can do for the youths of this country."

### **"We can build our own empire"**

Within sight of the Mayaro shoreline, where the Naparima Mayaro Road curves up to meet the Manzanilla stretch, the

Mayaro Police Station stands sentry over the community. Over July and August, as buses trundled families past the station toward the beach, a number of young people from the area were engaged in diligent study inside with YTEPP instructors.

Justin Jarvis, 23, joined the Mayaro PYC in 2015. He was drawn to the organisation after seeing club members practising a marching routine.

"I soon realised that marching and sporting events weren't the only things that the club had to offer. I was exposed to the wide variety of activities and academic initiatives the youth club often held or participated in. From Christmas functions, where we stepped out in suits and dresses and danced the evening away, to mentorship and peer counselling programmes; from Dancing Extravaganza to beach and community clean-ups - the Mayaro PYC kept us occupied in and out of school."

Justin credits the PYC with teaching him valuable life lessons about communication, respect and self-worth.

"Interacting with others, I've learned discipline and respect. Being one of the older ones in the group, the younger ones look up to us for guidance when necessary and we become role models. I've learned a lot about myself too - senior members of the club have said I have great teaching skills."

Justin chose to study introductory electronics with YTEPP to overcome his fear of working with electricity. Over the course of study, he was introduced to the theory of electricity, proper procedures for handling electrical equipment and emergency protocols in the event of an accident. He was then taught how to build circuits from



scratch, construct extension cords and even engineer racing cars. As an additional component of the course, Justin and his classmates received training in life skills such as communication and goal-setting.

For Justin, one of the standout features of the course was the instructor.

“Despite the fact that we all came from different walks of life, we all had great respect for him and vice versa. He’d also ask us what we planned to do in the future and would push us to achieve whatever goals we had set out. He told us to never stop the drive for betterment and to do an honest day’s work.”

Justin now has big plans for the skills he has acquired.

“This was just the beginning. Thanks to this experience and knowledge, I’ve already begun planning to further myself in the electrical field and get certified. I plan to open various companies, some of which will be with my fellow classmates. We can share our knowledge, skills and potential to build our own empire of companies and businesses.”

### “Out of my comfort zone”

Fifteen year-old Denisha Katwaroo has big dreams.

“My goal in life is to learn as many languages as possible so that I can serve the country in interpreting and teaching other students that are interested. I would also like to participate in Miss Trinidad and Tobago pageants when I get older.”

A student of Parvati Girls’ Hindu College, Denisha lives in a single-parent home in Penal. Her mother works hard as a labourer to ensure that Denisha’s and her little brother’s necessities are met.

“My mom is my role model because she displays qualities of both mother and father, so that I can be where I am today.”

Denisha and her brother joined the Penal PYC in 2018 to fill their idle time with extra-curricular activities. Through the club, she has been able to participate in dance, poetry recital and drama exercises. Most recently, she decided to enrol in the electrical installation course offered through YTEPP.

“I chose this activity because I had no idea what it was about. My curiosity grew so I decided that I needed to exit my comfort zone and try new things.”

As a student of Business, Denisha appreciates the opportunities on offer after learning these new skills.

“This course could help me in the future to become an



*Justin Jarvis receives his certificate from Myles Lewis, Head Corporate Social Responsibility, NGC*



*Denisha Katwaroo (right) with YTEPP instructor and classmates*

entrepreneur because this field has many innovative features and potential for profitability. As an entrepreneur, I would be able to provide my own electrical services to potential customers to make a daily living. It would also be useful for me to use the skills learnt in this course in my home when I can.”

### A promising future

On August 23rd, 2019, 138 young men and women crossed the stage at the Couva Chamber of Commerce to loud cheers and applause from parents and well-wishers, all gathered to see them graduate from the NGC-sponsored YTEPP programme. In full graduation regalia and smartly coiffed, the young graduands from Laventille Road, Couva, Penal, La Brea and Mayaro had one thing in common - pride in their accomplishments. By all accounts, they left the programme enriched, empowered and emboldened to convert what they learned into real value for their families and their communities.

For NGC, there could be no greater reward. ■



One Moment Please



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

*Butterfly alights  
Photo by Shaun Rambaran*





---

THE NGC GROUP OF COMPANIES

---