



NGC support for NewGen green hydrogen project

The NewGen green hydrogen project received another major boost with news that the National Gas Company of Trinidad & Tobago has signed a letter of intent to move towards a non-binding Heads of Agreement and a Definitive Agreement once acceptable terms can be reached between the parties.



L-R: Thibault Menage, Vice President Caribbean, HDF Energy, President of The National Gas Company of Trinidad and Tobago Limited (NGC), Mark Loquan, and Charlie Desmoulin, Chief Investment Officer, HDF Energy.

- TTNGL continues strong financial performance for Q1 2022 as global prices trend upwards**
- INOXCVA awarded contract to set up Mini LNG Terminal for Caribbean LNG in Antigua**
- NGC and CCCCC collaborate to tackle climate change in the region**
- Lightsource bp unlocks East Asia market with 150MW fishery solar project**



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NGC support for NewGen green hydrogen project

(continued)

Continued from page 1

NGC and NewGen have signalled their intention to work collaboratively to evaluate the development of NewGen's hydrogen production facility.

As the sole provider of natural gas to the domestic market and as an investor across the value chain, NGC plays a pivotal role in the gas industry of Trinidad & Tobago. Their support for the NewGen plant is an important boost for this innovative project.

In recent years, the NGC Group has been aggressively pursuing a "green agenda" aimed at responding to the climate challenge and reducing emissions of greenhouse gases, both from its own operations and acting as a catalyst for other national initiatives. The delivery of green hydrogen to the downstream industry will help offset shortfalls of natural gas, which have negatively impacted the sector in recent years.

Last month NewGen announced that a major French investor, HDF, had acquired a 70% majority stake in the NewGen project, with local company Kenesjay Green Ltd. retaining the remaining 30% of the share capital. Kenesjay announced their intention to use their shareholding as a vehicle to involve other local investors in the estimated US\$200 million project.

Once completed, the plant would be the world's largest clean hydrogen producing facility of its kind, using a smart combination of solar and energy efficiency-sourced power. It will competitively generate carbon-free hydrogen to meet 20% of the hydrogen requirement for an existing world-scale ammonia plant in the petrochemical hub of Point Lisas, Trinidad. Once up and running, the project will save approximately 200,000 t/CO₂ per year.

As well as providing direct foreign investment into the project, HDF also lends technical and operational support based on its successful existing projects in the Caribbean and around the world. This project would represent the first major investment into green hydrogen in Trinidad & Tobago.

The NewGen project has also been shortlisted for the inaugural Energy Chamber Innovation and Technology Challenge, and details of the project were presented on day two of the T&T Energy Conference on June 1, 2022.

Commenting on the LOI, President of NGC, Mark Loquan stated that "This LOI represents the next step between NGC and NewGen on deepening our collaboration towards the advancement on the first industrial scale low carbon hydrogen project in Point Lisas and the Caribbean. Once commercially feasible, the NewGen Project could potentially become a pivotal step towards medium- to longer-term decarbonisation

The NewGen project won the inaugural Energy Chamber Innovation and Technology Challenge, and details of the project were presented on day two of the T&T Energy Conference on June 1, 2022

of the petrochemical sector for Trinidad and Tobago, which is something that the NGC is committed to and working towards."

"NewGen is pleased to be taking our collaboration with NGC to the next level through this LOI," says Philip Julien, Chairman of NewGen. "We are committed to the establishment of a world-scale, world-class, low-carbon hydrogen production facility in Point Lisas, and are confident that this LOI with NGC will lead to greater collaboration with the other key stakeholders that will contribute to this shared vision of a decarbonising Trinidad and Tobago."

Damien Havard, Chairman and CEO, HDF explained the strategic fit for his company: "Having recently acquired the majority ownership of NewGen, we are heartened by the signing of this LOI, as it symbolises a key step towards optimising conditions for further increasing our investment both in NewGen and by extension in the energy sector of Trinidad and Tobago. In addition, given our international and regional history in green hydrogen project development, we stand ready to support this expanded NGC/NewGen collaboration as much as possible, including through our international expertise in new hydrogen technology and 'green' project financing."

The NewGen project won the inaugural Energy Chamber Innovation and Technology Challenge, and details of the project were presented on day two of the T&T Energy Conference on June 1, 2022.

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Woodside shareholders approve BHP Petroleum merger

Staff Writer | Energy Chamber

Woodside shareholders have voted in favour of the merger with BHP Group's petroleum arm. BHP and Woodside completed the merger on June 1, 2022.

BHP is expected to receive 914,768,948 newly issued Woodside ordinary shares. BHP will shortly provide a further update on the proposed in specie dividend of the Woodside shares. Completion of the merger created a top 10 global independent oil and gas producer worth US\$40 billion.

Woodside previously stated that on completion of the transaction, BHP Petroleum's oil and gas business would merge with Woodside, and Woodside would issue new shares to be distributed to BHP shareholders.

The expanded Woodside will be owned 52% by existing Woodside shareholders and 48% by BHP shareholders. The merged group has assets in Australia, the United States, Mexico, Senegal and Trinidad and Tobago.

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bpTT targets "Small Pool" gas opportunities

Staff Writer | Energy Chamber

bpTT announced the return of the Joe Douglas Jack Up rig, which will arrive in Trinidad in September 2022 and begin drilling operations in the fourth quarter.

The first phase of the drilling programme will involve development drilling of small pools; three wells in the Mango field and one well in the Savonette field. If this drilling phase is successful, these gas resources will be processed through the existing Mango and Savonette production platforms and could add production in early 2023. The second phase of the drilling programme includes the potential for three additional wells in the Angelin field; this phase is currently progressing through the sanction process. Following the drilling programme of the small pool opportunities, bpTT is also progressing work on an exploration campaign and is currently evaluating the exploration targets in the Columbus Basin and moving towards potentially adding these opportunities to the rig programme by early 2023.

"We are very excited to have the Joe Douglas rig back, and we have been working hard on identifying and continuing to develop small pools within our acreage," said Claire Fitzpatrick, bpTT's President. Smaller pools of resources are more challenging to access, but targeting resources closer to our existing infrastructure

allows us to develop those resources more economically and bring them into production immediately. At a time when the world needs more gas, we are pleased that we are ready to begin the first phase of this drilling campaign in the fourth quarter and look forward to subsequent phases as we continue to efficiently access viable gas resources and where possible bring them to market in the shortest possible time."

Once the first phase of the drilling programme is successful, identified gas resources will be put onto production by the first half of 2023 and will go towards fulfilling bpTT's existing gas supply contract obligations with the NGC and Atlantic.

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bpTT's Savonette platform

Preferred Bidder identified for Pointe-à-Pierre refinery

Staff Writer | Energy Chamber

Prime Minister the Dr. Honourable Keith Rowley has announced that Quanten has been selected for the sale or lease of the state-owned Pointe-à-Pierre refinery in Trinidad & Tobago. The refinery was moth-balled in 2018 amidst a radical restructuring of Petrotrin, the integrated national oil company. The upstream portion of Petrotrin was spun off into Heritage Petroleum (one of the sponsors of 2022 Trinidad and Tobago Energy Conference), while the refinery was put up for sale or lease.

This is the second attempt to find an investor for the refinery, with four international companies shortlisted and bids recently being submitted for evaluation. The first attempt to find a potential bidder failed to proceed after the identified investor, Patriotic Energies and Technologies Company Limited (owned by the Oilfield Workers Trade Union), was unable to complete the transaction.

Strategic location

With a history stretching back a hundred years, the refinery was at one time a key refining asset in the western hemisphere. During the Second World War, it provided fuel for convoys of Allied ships on the vital trans-Atlantic routes. At the time of its closure in 2018 it had a capacity of around 140,000 barrels per day and had undergone a series of upgrades over the decades.

The refinery had originally been established to process crude oil produced in Trinidad & Tobago for international markets, but as Trinidad's oil production began to decline in the 1980s, it increasingly relied upon imported crude for processing and exports to regional markets.

While the refinery faced challenges with high costs and an inflexible industrial relations framework, there are potential opportunities for the facility, not least because of its strategic geographical location and the availability of additional low carbon fuels for blending (including methanol and clean diesel from a co-located GTL facility).

Opportunities for contractors

At the time of the closure of the refinery, one of the key reasons given by the Board of Petrotrin was the fact that significant additional capital expenditure was required to complete the upgrade and in particular to complete and commission the ultra-low sulphur diesel plant.

News of a potential new investor in the refinery will be welcomed by local contractors who would hope to be able to offer many of the construction, refurbishment and maintenance services needed to bring the facility back into production. Prior to the closure, the refinery was an important customer for many contractors and service companies, including



Pointe-à-Pierre refinery

many small and medium-sized companies in south Trinidad. The significant investments needed in asset integrity for the facility could provide a significant boost to local contractors and service companies.

In a survey conducted at the time of the closure of the refinery in 2018, 59% of contractors certified to work in the energy sector reported that they provided goods or services to the refinery. On average, it accounted for 25% of the business of the contractors who had

the refinery as a customer ([hyperlnk: https://energynow.tt/blog/what-is-the-likely-impact-of-the-refinery-shut-down-on-contractor-and-energy-service-companies](https://energynow.tt/blog/what-is-the-likely-impact-of-the-refinery-shut-down-on-contractor-and-energy-service-companies))

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Rosco Petroavance Limited acquires Process Components Limited (ProCom)

Staff Writer | Energy Chamber

Rosco Petroavance Limited, a key player in the oil and gas supplies industry since 1950 and the sole local authorised distributor for many top tier oilfield products, announced the acquisition of Process Components Limited (ProCom). ProCom was founded in 1982 and has been recognised as a leading supplier of industrial, oilfield and energy related products and services.

The move to acquire ProCom began in early 2021, with the sale agreement being signed in September 2021. As of October 1, 2021, ProCom began operating as a Division of Rosco Petroavance Limited. All legal requirements have since been completed for the amalgamated company to operate under the new name of Rosco Procom Limited. This acquisition automatically increased the company's market share in the supply of products and services to the oil and gas, industrial, commercial, construction, automotive and marine industries.

The integration process commenced in October 2021 to address major items such as legal and financial requirements, systems, and organisational restructuring. The transition period will continue to take place over the next few months to ensure all areas of the business are properly aligned. During this period, customers will continue to receive the same high-quality products and services which they have come to expect.

"This merger is expected to result in a one stop shop for engineered products and services. Our combined experience will deliver greater efficiencies that will help us to achieve superior results for our customers and shareholders, while adding value to our employees and the communities we serve. We feel strongly that our acquisition of ProCom will allow us to be the benchmark solution provider and achieve our aggressive strategic goals," stated Wayne Bernard, CEO of Rosco Procom Limited.

Rosco Procom Limited employs over 145 employees across two locations in Point Lisas and San Fernando and is a subsidiary of the Agostini Group of Companies. Rosco Procom Limited is ISO 9001:2015 and Safe-To-Work (STOW) certified. The company is also established in DNV-GL certification for the manufacture of wire rope lifting sets for offshore containers.

EnergyNow spoke with Wayne Bernard and asked what prompted the acquisition of Procom. Bernard said Process Components Limited was a privately held and successfully run family business. ProCom became available for sale to the market in 2019. He indicated that the ProCom owners decided that there was a gap in their succession planning and that the timing was right for them to divest this business to invest in other areas. After two and a half years of negotiation and

completion of their due diligence, the Agostini Group, through its subsidiary company Rosco Petroavance Limited, purchased 100% of ProCom and took control of the company on October 1, 2021.

Bernard said that the amalgamation of these two powerful businesses was still ongoing. He added: "We don't have an end date for this process. We continue to find great synergies within these businesses and will further develop them as we go."

"From the onset we determined that the acquisition of ProCom would be a complete add-on to our Rosco business, therefore doubling our footprint in the sectors that we serve. The new joint Rosco Procom Limited is now the largest supplier and services provided to the Oil & Gas, Mechanical & Electrical, Rigging & Lifting and also to Commercial & Consumer sectors for Engineered Products in Trinidad. The depth of our capabilities makes us a formidable 'One Stop Shop' for all our customers' needs. As mentioned before, this acquisition is bringing together two benchmark businesses, making us the leading Engineered Products and Services provider in T&T with over 70 years of expertise and knowhow, highly trained technical staff and top tier products, in all sectors where we compete."

What's next for the company?

Bernard said: "We see Rosco Procom Ltd as being a true partner to our customers, able to bring exceptional value in the supply chain of engineered products and the highest level of competence in the engineered services we offer to our customers. The opportunity to grow and build our business within and outside Trinidad are exciting and we look forward to the future."

"We are looking internally at all aspects of our new amalgamated business and will be expanding those areas that would add the most benefits to our customer base," he added.

The launch of Rosco Procom Limited at the T&T Energy Conference

We asked Wayne Bernard why launch the company at the T&T Energy Conference? He said "To a large degree, our business is associated with the energy sector and most of our customers are also members of and part of the Energy Chamber, so this is the best opportunity to inform our valued customers about our new significantly larger and technically superior company Rosco Procom Limited."

Learn more and have your say online:
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Subsea 7 awarded contract offshore Trinidad and Tobago

Staff Writer | Energy Chamber

Subsea 7 announced the award of a sizeable project by BP for the TOPR project located offshore Trinidad and Tobago, in water depths of up to 280 feet.

The project covers the installation of a 96 km, 12 inch pipeline, associated shore approach and diver tie-in spools. Front end engineering and design (FEED) is underway and the EPC12 scope is scheduled to begin this month.

Project management and engineering will take place in Subsea 7's office in Houston, Texas.

Craig Broussard, Vice President for Subsea 7 US, said: "We are honoured to have been selected for the fast-track

delivery of the TOPR project and we look forward to continuing our collaborative relationship with BP"

Subsea7 is a Silver Sponsor at the T&T Energy Conference.

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TTNGL continues strong financial performance for Q1 2022 as global prices trend upwards

Staff Writer | Energy Chamber

The financial performance for the first quarter of 2022 continues to trend upwards as TTNGL has posted yet another strong quarterly performance, recording an after-tax profit of TT\$64.6 million for the first three months ended 31 March 2022.

This represents a 29.2% improvement of TT\$14.6 million over the comparable period in 2021, when a profit after tax of TT\$50.0 million was recorded. Earnings per share for the quarter were TT\$0.42, compared to TT\$0.32 for the corresponding period in 2021, which constitutes an increase of 31.3%.

According to the financials and report from NGC Group Chairman Conrad Enill, this marked improvement was driven by the solid financial performance of TTNGL's underlying asset, Phoenix Park Gas Processors Limited ('PPGPL'). Increasing energy commodity prices, which continued from 2021 into 2022, translated to higher recognised Mont Belvieu natural gas liquids ('NGLs') prices, which were 69.3% above those of the corresponding period of 2021. This global upward trending of prices served to buoy higher profits for PPGPL.

The first quarter of 2022 marked a major milestone in PPGPL's international growth strategy. In January 2022, PPGPL acquired the Hull Terminal in Texas, United States. Full integration of the new facility is expected in Quarter 2, 2022 with maximisation of throughput soon after. On the acquisition, Chairman Conrad Enill noted that, "...the development represents a yet another step in expanding the footprint of PPGPL's asset base in North America built solid investments that continue to deliver significant economic returns."

Furthermore, PPGPL's North American-based subsidiary, Phoenix Park Trinidad and Tobago Energy Holdings Limited ('PPTTEHL'), continued to show a robust performance. Through the intentional execution of carefully managed contracts, PPTTEHL has delivered high trading volumes and improved margins and for the period, contributed approximately



TTNGL's head office.

6% of PPGPL's profit after tax. Performance from this business segment is expected to positively contribute to PPGPL's future earnings potential.

NGL sales volumes for the first quarter of 2022 were 16.1% higher than in 2021. The increase in sales volumes resulted from a draw on inventory due to higher customer demand. These higher volumes benefitted from the robust NGL product prices during the quarter.

Commenting on the outlook for TTNGL and PPGPL, Chairman Enill stated, "We are

cognisant of the uncertainties in the market and we will continue to focus on delivering exceptional results to our customers and stakeholders. Through astute management we remain committed to retaining markets and maintaining high levels of plant reliability and availability. These efforts, coupled with a resolute pursuit of value-added growth strategies along the NGL value chain locally and in select territories regionally and internationally, will underpin the development of long-term shareholder value."

TTNGL's Summary Financial Statements for the three months ended 31 March 2022 may be viewed on TTNGL's website at <https://nngl.co.tt/ttn-gl-financial-statement/financial-statements-for-the-threemonths-ended-31-march-2022>

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European Commission and International Energy Agency in a common bid to reduce EU reliance on Russian fossil fuels

Staff Writer | Energy Chamber

The European Commission and the International Energy Agency are joining forces to help EU countries reduce their reliance on Russian fossil fuels.

By strengthening investments in clean energy and energy efficiency, the project aims to mitigate the impact of Russia's invasion of Ukraine on the EU energy sector.

In the framework of this common endeavour, the Commission is offering support to Member States to reduce their dependence on Russian fossil fuels through the Technical Support Instrument. 17 EU countries have already joined the project. This support is in line with the REPowerEU Plan presented by the Commission on 18 May, outlining how to phase out EU dependence on Russian fossil fuels and accelerate the clean energy transition.

The cooperation with the IEA will cover seven areas: supply and diversification of liquefied natural gas; production of biomethane; stepping up international trade in hydrogen; acceleration of rooftop solar and heat pumps roll-out; demand-side measures and energy efficiency; faster permitting of renewable projects; innovative hydrogen and renewables solutions for industry.

It will include workshops, meetings, analysis, and data tracking by the International Energy Agency.

The first workshop on 24 May focused on supporting the uptake of demand-side and energy efficiency measures. The workshop was attended by representatives of the Member States participating in the project, the Commission, IEA and by industry stakeholders.

Fatih Birol, the IEA Executive Director, said: "The sense of determination across

Europe to move rapidly away from Russian fossil fuels is impressive and inspiring. Clean energy technologies offer the best solutions to deal with the energy affordability and security crises we are witnessing today while also making progress in the fight against climate change. The IEA is very pleased to be working with the European Commission and EU Member States to help them accelerate the shift to a more secure and sustainable energy future."

Mario Nava, Director-General for Structural Reform Support, said: "Meeting the target of cutting our energy reliance on third countries' fossil fuels requires to mobilise all available means. Member States can rely on the Commission's help through the Technical Support instrument and we are very pleased to work with a knowledgeable partner such as the International Energy Agency to reach that important goal."

Ditte Juul-Jørgensen, Director-General for Energy, said: "The recently adopted REPowerEU plan brings actions and resources to shed EU dependence on Russian fossil fuel imports as quickly as possible, by advancing our clean energy transition and becoming more efficient in the way we consume energy, boosting our European Green Deal efforts. Supported by investments and reforms, we have a robust roadmap to follow. Member States' engagement, solidarity and cooperation are crucial in the process."

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Reducing fugitive emissions is a top priority in the battle against

climate change. That is why Dutch company Mokveld Valves BV is introducing a unique zero emission innovation - the world's first valve without dynamic seals to the atmosphere.

Mokveld has incorporated an electric actuator inside its new valve, eliminating the stem seal

to atmosphere entirely. Common valve designs rely on stem seals to prevent process fluid leakage to the environment. Such dynamic stem seals are prone to wear and tear and degradation, over time showing increased emissions. By eliminating the stem seal altogether, Mokveld's new Zero emission valve prevents any leakage to atmosphere throughout the valve's entire life cycle. This ground-breaking technology brings achieving Scope 1 GHG goals one step closer - zero fugitive emissions.

The Zero emission valve consumes very little power and requires a low actuation force. This is achieved by eliminating the stem seal and its associated friction in combination with Mokveld's trademark fully pressure balanced design. Power consumption over the valve's lifetime is reduced even further by cutting power to its drive under steady-state conditions, using a self-braking drive nut. This contributes towards achieving Scope 2 GHG goals - reduced indirect emissions.

The low actuation forces in combination with state-of-the-art servo control provides for unmatched control accuracy. The overall valve control performance is improved, with virtually zero dead time and zero overshoot.

Over eighteen months of field trials have fully confirmed the design's benefits, resulting in its TRL7 status.

Mokveld is well known for its tried-and-tested one-piece axial flow designs with its optimised flow path and full range of control trims. These served as the basis for developing this new valve. The valve's compact, lightweight design contributes towards achieving Scope 3 GHG goals - reduced value chain emissions.

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Leveraging the energy industry for innovation

Staff Writer | Energy Chamber

There is an unfortunate perception that there is little innovation which takes place in the Caribbean energy sector and that any new technology or new process improvements are simply imported from elsewhere. The Energy Chamber of Trinidad & Tobago's inaugural Innovation and Technology Challenge suggests that this perception is misplaced.

In response to a call for submissions from across the region, the Energy Chamber received seventeen applications from a wide range of different teams, covering a wide range of different innovations. An experienced and respected panel of judges narrowed this down to five shortlisted projects that were presented to the T&T Energy Conference on June 1, 2022.

The shortlisted submissions cover a wide range of different types of innovations, ranging from new battery-recycling technology to software solutions to improve field operations and process safety. Most of the submissions came from Trinidad and Tobago, though one of the shortlisted innovations covers projects implemented in Jamaica. The Energy Chamber hopes that in future years there will be more submissions from the wider Caribbean.

The T&T Energy Conference is the longstanding premier regional energy event and attracts the leadership of the major energy sector firms operating in Trinidad and Tobago and the wider region. The Innovation and Technology Challenge gave the shortlisted teams developing new ideas the chance to present their innovations to the audience at the conference, including many potential customers, investors or partners. The Energy Chamber designed this Challenge because of persistent complaints from smaller member companies that they were often unable to get their good new ideas in front of the leadership of the major customers. Delegates at the Conference (both in-person and virtual) had a chance to vote on the innovations that were pitched and to choose an overall winning submission.

The five shortlisted innovations are outlined below (in no particular order):

Battery recycling: "The Battery Alchemist" team of BELEC Ltd and PROTOFABTT have developed innovative new techniques for battery recycling and recertifying, which allows the batteries to be put back into productive use.

The team originally developed the innovations around lead-acid batteries, found in internal combustion engine vehicles, boats and many other uses, but have now developed the technology to also recycle lithium batteries found in electric vehicles and hybrids. With the projected massive increase in EV use and the general electrification of energy systems in response to climate change, this innovation promises to be increasingly relevant and to meet a growing market demand.

OperAid: the OperAid software is designed to reduce human error in operations and increase operational assurance. The software provides an automated audit trail of work as prescribed in Standard Operating Procedures (SOP), checklists, isolation (lockout/tagout) procedures and pre-start-up safety reviews (PSSR). By reducing the potential for human error in complex oil, gas and petrochemical operational processes, the system could help improve process safety and reduce potential environmental impacts and loss of life. The software verifies work as it is executed and therefore helps prevent field mistakes in real time.

Carbon-Neutral Hydrogen: the NewGen project is probably already well known to many people in the energy sector and beyond. NewGen will produce hydrogen through the electrolysis of water using electricity supplied from green and energy-efficient power sources. While the technology that drives the electrolysis is not new, the project takes an innovative approach to securing the necessary electricity from carbon-neutral sources and providing the hydrogen as feedstock to the existing ammonia industry in Point Lisas. The project is a major investment and will have a significant climate impact, removing approximately 165,000 metric tonnes of CO₂ per year compared to the current process.

Ecosystem partnerships to create microbial oil-degraders: a team comprising Dr. Sephra N. Rampersad and Amanda C. Ramdass from the University of the West Indies have developed novel biosurfactants and biocatalysts that are produced in an ecosystem partnership among specific microbial oil-degraders indigenous to Trinidad which have been isolated from several natural crude oil seeps and the Marac-Moruga Mud Volcano. These biosurfactants and

(continued on page 9)

Energy in transition

bpTT joins the T&T Energy Conference 2022

The world's shift to cleaner energy is a significant opportunity for Trinidad & Tobago's energy sector – especially for our advantaged gas resources. At bpTT, we're on a journey to a low carbon future and we are proud to once again be a platinum sponsor of the T&T Energy Conference.

We're looking forward to sharing our experiences and adding to the conversation as the conference explores the theme of 'Leveraging the industry's strengths for the energy transition'.

Claire Fitzpatrick,
President bpTT,
Sponsor's Panel



Craig Marshall,
Senior Vice-president, Investor Relations
The energy transition:
What's driving company strategy



Ian Hunter,
Commercial Manager,
Net Zero Teesside
Delivering green and
blue molecules



Michael Cohen,
Chief US Economist
Natural gas &
the energy transition

Katy Henderson-Moses,
Area Development Manager, Trinidad
Next generation leaders panel



You can find more
about bpTT at the T&T
Energy Conference at:



Continued from page 8

biocatalysts can be used to safely clean crude oil sludge from the bottom of tanks, pipelines and other pieces of equipment in an environmentally friendly manner. These oil degraders help reduce residues in equipment, improve performance and efficiency, and could be used to clean up polluted environments.

Sustainable, clean, climate-resilient energy: Energy Dynamics Ltd. submitted details of their projects in Jamaica as an example of their innovative approach to delivering sustainable and energy-efficient solutions. Their innovative approach uses waste heat from LNG generators to run absorption chillers and significantly reduce the energy used for cooling. Solar energy with battery storage can also be incorporated into their project-delivery approach, which delivers significant energy savings, lower carbon emissions and lower costs. One example of their approach has been at the Mona Campus of the University of the West Indies.

While the remaining twelve submissions unfortunately did not have the opportunity to present at the T&T Energy Conference 2022, details on all of the submissions and contact details of the teams were provided to delegates and anyone wanting further information or to follow-up with the relevant project teams can contact the Energy Chamber.

Learn more and have your say online:
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INOXCVA awarded contract to set up Mini LNG Terminal for Caribbean LNG in Antigua

Staff Writer | Energy Chamber

INOXCVA, an Indian multinational and one of the world's leading manufacturers of cryogenic equipment and solutions provider, has been awarded a contract by Caribbean LNG Inc. for Design, Engineering & Supply on a turnkey basis for a Mini LNG receiving and regasification terminal to be set up in Antigua.

Caribbean LNG Inc. is a Joint Venture between Eagle LNG Partners ('Eagle LNG') and Antigua Power Company (APC). The terminal will provide natural gas for APC's on-island 40MW power plant, and is expected to be a future template and anchor plant to service power and other energy requirements in the Eastern Caribbean Islands.

Speaking on the occasion, Mr. Vijay Kalaria, Global Head - LNG at INOXCVA, said: "We are excited and honoured to have been given this opportunity to set up this prestigious 'Mini LNG Terminal' with vacuum insulated storage tanks and a regasification system to feed the gas-based power plant. Caribbean LNG's terminal will be capable of receiving LNG through smaller ships, while provisioning for LNG distribution and ship bunkering in the



Mini LNG Terminal

future. Our innovative design and modularised concept will ensure minimum site activity and enable faster implementation of the project. All major critical equipment to be installed in the Mini LNG terminal will be manufactured in INOXCVA's state of the art manufacturing facility in Kandla, India."

This project comes soon after the successful commissioning and operations of a similar terminal set up by INOXCVA in Scotland.

"Caribbean LNG and our shareholders, Eagle LNG and APC, are proud to work with INOXCVA on this state-of-the-art modular terminal for Antigua and Barbuda, that serves as a template for our plans throughout the Eastern Caribbean, and hub for cost-effective, low-carbon fuel supply to the country and region," said Francis Hadeed, Director at Antigua Power Company Ltd. "With secure, affordable, sustainable, and reliable supply from Eagle LNG's facilities in Jacksonville, Florida, USA, and the unmatched experience and know-how of APC, Antigua and Barbuda will benefit from the use of this lower-carbon fuel creating opportunities for the country, and the Eastern Caribbean region. Moving to gas also enables the greater integration of renewable generation in the country, and the introduction of bio-LNG and hydrogen into the fuel mix will further reduce carbon footprint and meet committed goals for the country on carbon reduction."

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Securing new natural gas supplies

editorial

SECURING NEW NATURAL GAS SUPPLIES is a priority for Trinidad & Tobago. This means we need to attract significant capital into upstream gas exploration and development, while at the same time decreasing the carbon intensity of our products to allow continued market access. The Energy Chamber has developed a simple six-point plan outlining the major changes that are needed to make this a reality.

1) Fast-track bid rounds and the approval processes

Acreage needs to be awarded to competent operator companies for new exploration to take place. Improving the regulatory approval processes will reduce the time between the award of new acreage and first gas production. This will significantly improve project economics and make new gas available faster.

2) Reform upstream tax system to incentivise investment

The current structure of upstream royalties and taxation does not encourage companies to reinvest in exploration or in the development of new fields. The fiscal regime, inclusive of the VAT system, needs to be reformed to unlock new investment.

3) Invest in reducing the carbon intensity of operations and products

Cross border adjustment mechanisms (CBAM) for carbon taxes pose a threat to exports of LNG, petrochemicals and iron and steel from Trinidad & Tobago, especially to the European Union. If Trinidad & Tobago commodity exports are to be able to sell to higher price premium markets the carbon intensity of production must be able to compete with other jurisdictions. This will require the reduction of CO₂ emissions from operations, reducing methane emissions and flaring, accessing offsets, and the introduction of low carbon molecules into the product mix (including green and blue hydrogen).

4) Divert gas from domestic electricity generation through energy efficiency and renewables

Gas for electricity generation is sold at prices far below the market rates

We need to attract significant capital into upstream gas exploration and development, while at the same time decreasing the carbon intensity of our products to allow continued market access.

for petrochemicals or export markets through LNG, which acts as a disincentive for upstream companies to invest in gas production. Reducing gas going to electricity, through both increased renewable generation and improved energy efficiency, will make more gas available for these foreign exchange-earning sectors and should improve the profitability of upstream gas developments.

5) Encourage innovative approaches to small field development

As Trinidad & Tobago has matured as a gas province, new fields are often smaller and more difficult to develop. Working with the Ministry of Energy, operator companies need to find new ways of bringing this gas to market making the best use of existing infrastructure.

6) Secure cross and across border supplies

There are significant gas resources in neighbouring territories, especially Venezuela, but also potentially in Barbados and Grenada (in the longer-term). In addition to significant untapped offshore gas fields, more natural gas is flared on the North Monagas oilfields in eastern Venezuela alone than the current shortfall in Trinidad production. Securing these resources for export to Trinidad is politically challenging, but has huge potential economic benefits and, in the case of the flared gas in particular, significant climate change benefits as well.

Implementing these six actions will help secure additional gas and promote the continued sustainable development the T&T energy sector.

Learn more and have your say online:

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Leveraging the industry's strengths for the energy transition

TRINIDAD HAS BEEN in the oil industry for well over a century.

In fact, the world's first successful oil well was drilled in Trinidad by Captain Walter Darwent in 1867 (though it was never commercially developed). His descendants are active members of the Energy Chamber today. The Energy Chamber has indigenous member companies, like Tucker Energy, who have been in the industry for almost ninety years and are still going strong. Trinidad has been in the petrochemical sector for over sixty years, with the original Fed Chem ammonia plant coming on stream in 1959. Not only was the first oil well ever drilled here, but we were one of the first ever places to drill offshore and one of the earliest pioneers in horizontal drilling. More recently, we were early movers in the LNG industry and ahead of the huge surge in global LNG production that the world has seen in the last fifteen years.

We have been in oil and gas a lot longer than we have had a manufacturing sector or a tourism sector. Oil, gas and petrochemicals are our traditional industries and there is deep knowledge and experience in the sector, going back generations in many cases. Many of the people working in the industry have fathers, grandfathers and great-grandfathers who worked in the oilfields (not too many women traditionally worked in the industry, though that is at last changing as well).

In my view we are often guilty of not recognising this deep knowledge and expertise and doing enough to promote and brand Trinidad as a pioneer in the energy sector. When the T&T Minister of Energy is interviewed on CNN, a renowned business journalist like Richard Quest should not be admitting he had no idea about Trinidad & Tobago's role in the global gas industry. That should be like not knowing that tourism is important to Jamaica or Barbados.

While our oil and gas reserves are dwarfed by our neighbour, Venezuela, and now also by Guyana, with their unprecedented offshore exploration success, we have developed a significant strength over our long history in the industry. As the world undergoes a decades-long energy transition in response to the challenge of climate change, we need to be leveraging those strengths to create sustainable businesses able to create value and opportunities for our citizens.

For this year's T&T Energy Conference we chose the theme "leveraging our industry's strengths for the energy transition" in recognition of that concept. Across nine different discussion panels over three days of the event we will explore various aspects of that theme and look at how the industry is



While our oil and gas reserves are dwarfed by our neighbour, Venezuela, and now also by Guyana, with their unprecedented offshore exploration success, we have developed a significant strength over our long history in the industry.

changing, the challenges that these changes presents and the opportunities that will arise. We will be speaking with leaders of the industry who interact with institutional investors in global capital markets and to the next generation of industry leaders working in our member companies. We will explore the impact of the pandemic on how companies operate and what lessons have been learnt that will be incorporated into operations post-pandemic. We will look at the global gas markets and the role that gas and renewables are playing in the regional economy and at how the industry can deliver green and blue molecules to reduce emissions. We will look at managing mature oilfields in a world wanting lower carbon products and we will look at deep-water frontier exploration in the Caribbean.

Across all of these discussions we will be exploring how the skills, knowledge and experience that we have gained over so many decades can be leveraged to solve the local, regional and global challenges that we face. Acknowledging our history in the industry is not about looking backwards: it is about giving us confidence as we move forward. The concept of Sankofa is relevant here – if you are intrigued read the article about Shalini and our awards programme online by [clicking here](#).

Learn more and have your say online:

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Paving the way for hydrogen

Mark Loquan | Contributor

As far as fuels go, hydrogen is among the cleanest you can find. As the world attempts to balance growing energy demand and the need to reduce greenhouse gas (GHG) emissions, a fuel whose sole by-product when consumed is water can be a game-changer.

Of course, a fuel is only as green as the process used to produce it, and not all hydrogen is created equal. Most of the hydrogen produced today is considered 'grey', because it requires fossil fuel inputs such as natural gas or coal. 'Blue' hydrogen is produced using similarly non-renewable inputs, but carbon capture during production reduces its carbon impact. 'Green' hydrogen is cleaner still. Produced using renewable sources of energy, it is the most climate-friendly option.

It is therefore small wonder that green hydrogen is today the subject of increasing investment and policy attention around the world. Almost weekly, news breaks of new projects or government strategies to accelerate deployment of this fuel, and the global hydrogen market is expected to more than double from below 100 Mt today to 223 Mt by 2050.¹ Goldman Sachs estimates green hydrogen could supply up to 25% of the world's energy needs by 2050.²

What this means is that green hydrogen and derivative fuels could soon displace a considerable share of the fossil fuels consumed by pollutant sectors, such as transportation and metals manufacturing. This is a most welcome prospect as we move closer towards our deadline for bringing carbon emissions in check.

1 [https://www.woodmac.com/news/opinion/hydrogen-the-us\\$600-billion-investment-opportunity/](https://www.woodmac.com/news/opinion/hydrogen-the-us$600-billion-investment-opportunity/)

2 <https://www.goldmansachs.com/insights/pages/gs-research/green-hydrogen/report.pdf>



Trinidad and Tobago is ranked among the most energy intensive countries in the world, and one of the highest GHG emitters per capita.

Even though our absolute consumption and output relative to the rest of the world may be marginal, we are consuming and emitting at disproportionately high and unsustainable levels for a nation of our size.

Hydrogen and T&T

So how does this hydrogen story fit into the narrative of Trinidad and Tobago energy? What value do we as a hydrocarbon-based economy stand to derive from replacing a share of our oil and gas with hydrogen?

As obtains elsewhere in the world, a principal benefit would be a reduction in the carbon intensity of our industry. Trinidad and Tobago is ranked among the most energy-intensive countries in the world, and one of the highest GHG emitters per capita. Even though our absolute consumption and output relative to the rest of the world may be marginal, we are consuming and emitting at disproportionately high and unsustainable levels for a nation of our size. Since this is largely on account of our industrial activity, if we can meet a percentage of energy demand using cleaner sources such as green hydrogen, we can help clean up our emissions reputation and accelerate progress towards our goals under the Paris Agreement.

On another level, as our energy reservoirs mature, production of oil and gas is being forced into deeper water, making it more expensive to meet our energy needs. Diversification of our energy portfolio is the best way to ensure resilience, and that we can support continued industrial and economic growth in an uncertain future.

From a market perspective, new policies, taxes and regulations are being introduced to compel change in the direction of greener products. In some market segments, premiums are already placed on goods that meet certain sustainability standards (for example, organic food products). One of the predicted applications of green hydrogen is in the decarbonisation of petrochemical production, and it may well turn out that 'green' petrochemicals

(continued on page 13)

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gain preferential treatment in certain markets. Ammonia, for example, is a necessary input into agriculture, and as food demand multiplies with a burgeoning world population, green ammonia could become a market preference for sustainably increasing food production. Green ammonia has also been pitched as a substitute fuel for the shipping industry.

Trinidad and Tobago is among the world's top ammonia and methanol producers. If global markets do shift towards greener petrochemicals, the country should anticipate that shift and evolve accordingly. There is also ample opportunity to integrate green hydrogen into other manufacturing activities, such as production of metals, cement, synthetic fuels for power plants, shipping fuels and vehicular transport fuels, to name a few.

The role of The NGC Group

In recent years, NGC and its subsidiaries have been expanding the collective business portfolio to keep pace with the transitioning global energy sector. Investments have been made in renewable energy, energy efficiency and energy education projects. Embracing green is good for the planet, but also good for business. For instance, less natural gas fed into power generation means more feedstock and fuel for industrial consumers.

Exploration of opportunities to develop a green hydrogen industry in Trinidad and Tobago is one of the latest projects in this growing portfolio. NGC is particularly well-placed to participate in the development of a hydrogen industry as modified natural gas pipelines are considered viable interim stand-ins for hydrogen delivery infrastructure.³

Leading the reconnaissance effort into the hydrogen space is subsidiary National Energy. With support from the government, National Energy secured funding from the Inter-American Development Bank (IDB) to conduct feasibility studies in 2021, in order to understand the economic parameters of producing green hydrogen locally.

KBR Inc. (KBR), a US-based company that provides solutions in the fields of science, technology, and engineering, was contracted in September 2021 to work with National Energy and IDB in the development of a hydrogen strategy for Trinidad and Tobago. The study is expected to be completed by Q3 2022. The outcomes will be reports on:

- the potential green hydrogen demand and supply from different sectors
- recommendations for the development of green hydrogen and a potential pilot project to confirm feasibility
- the synergies with the natural gas and petrochemical infrastructure to support the development of the green hydrogen market
- the technology options for repurposing current infrastructure and an implementation map
- a summary of the project results and recommendations.

In addition to those efforts, NGC and National Energy have both committed support to the hydrogen cause through an MOU with Kenesjay Green Limited (KGL), who is also working to create a sustainable domestic hydrogen economy. Through this partnership, our companies will explore joint development of viable, low carbon and green hydrogen-related industrial energy projects, as well as their associated renewable and energy-efficient feedstock supply.

Notably, KGL's NewGen project to build the first carbon-neutral/green hydrogen production facility in Trinidad and Tobago, has already progressed through several milestones. In April 2022, it was announced that Hydrogène de France (HDF Energy), a global pioneer in the hydrogen industry, acquired a 70% majority stake in the NewGen project. Through this investment, HDF Energy will bring its considerable expertise in hydrogen technology, procurement and financing to the project, supporting its progression and bringing it closer to realisation.

Given these developments, it is equally important to push work on building a supporting value chain for hydrogen. This requires greater investment in 'upstream' renewable energy research and deployment, and the stimulation of downstream demand.

We at NGC and our subsidiary companies see the opportunities and the work that must be done to capture them. Importantly, we see the value on offer, and will therefore continue to work alongside relevant stakeholders to prepare Trinidad and Tobago for the era of hydrogen.

Learn more and have your say online:

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3 <https://www.energy.gov/eere/fuelcells/hydrogen-pipelines>

Results of the Deepwater bid round 2021:


The Ministry of Energy and Energy Industries closed the Deepwater bid round at the T&T Energy Conference 2022 at Hyatt Regency on June 2. The bid round consisted of seventeen deep-water blocks located off the east and north coast of Trinidad & Tobago. Four bids were received and the blocks were bid on by a consortium of BP and BG/Shell. The Consortium bid on Blocks 25B, 25A, 23B and 27.

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Leadership in times of crisis



Illustration: liuzishan/Freepik

Steven Samlalsingh | Contributor

Like many people over the last two years, I have spent many hours surfing the net and trying out apps. It was not all play though. With a couple young programmers, I developed a personal app and a business solution. I also discovered the treasure trove of music called Spotify, resurrecting songs I haven't heard for ages. I rediscovered Marvin Gaye's 1971 anthems, the angst-filled, "What's Going On" and the plaintive "Mercy, Mercy Me". Songs about war, civil rights and the ecology, which sadly, is the same soundtrack for 2022 with war, food shortages and recession looming, record heat, shrinking rainforests, rising sea levels and Saharan Dust sprinkled in for good measure. And, of course, there is COVID-19 and its variants. At the time of writing, over half a billion people contracted COVID-19 with over six million deaths. Everyone knows someone who has passed away or been hospitalised and has a harrowing tale to tell. For me, a poignant moment was typing "R" on my phone and the auto spell prompting "RIP".

Impact of positive leadership

It is times like these that define leaders. Do they stand and deliver or do they wither and fade? History has shown that in times of crisis, good leaders rise to the occasion and turn around seemingly hopeless situations. On the other hand, a bad leader—one who is absent, indecisive, deceptive or uncaring—can easily exacerbate an already difficult situation. Leaders, be it in government, communities, churches or the work place, by their very position, hold tremendous responsibility and influence which can be impactful based on their actions, pronouncements and even body language. Similarly, family matriarchs and patriarchs, coaches, principals, union leaders, heads of clubs and associations also hold this power.

In this period of challenging uncertainty, a good and wise leader is trusted, respected and can influence one's mood and behaviour and how one responds to the prevailing situation.

A leader in the workplace during these unprecedented times has key responsibilities requiring a blend of business management, compassion and empathy for staff and their loved ones. The leader must monitor on the radar: business continuity whilst responding to shifting scenarios, staff remaining safe and well on site and at clients' workspaces, maintaining a calm and harmonious work environment, and watching the bottom line. When an organisation gets these aspects right, it becomes more resilient, giving itself a better chance at rebounding from the pandemic fall-out and responding to future threats.

As employees continue to feel the mental stress of these issues coupled with frustration and irritability of restricted movement, it is important that the leader in the organisation communicate regularly, openly and project positivity. The leader must listen with empathy and act with understanding. Communication with candour and forthrightness is key when dealing with stakeholders, especially employees. Despite the financial challenges, organisations must continue to invest their most important asset, their people, through the introduction of wellness programs, EAP support, team events, family gatherings, and even ESG and sustainability projects. The awareness of keeping a healthy lifestyle is paramount and must be encouraged.

An important aspect of leadership is succession. Many leaders are burning out. Leading in these stressful times is no easy feat and most leaders have not left their post. A good leader must find and coach a successor who can step in and fill the position whilst the incumbent recharges.

Looking ahead — leaders must prepare

The global response to the pandemic, adapting to the demands of strict guidelines and protocols, have been nothing short of phenomenal. Dealing with almost two

years of pandemic life, most organisations have transitioned themselves with amazing flexibility. Within weeks, businesses had lockdown readiness in place, rosters set up, work-from-home and remote access, Zoom and Team meetings, restricted entry, sanitisation and hand-washing facilities, while people were quietly lining up to await their turn for entry or service at business places and offices. As the pandemic wore on, one saw more measured behaviour with incident-handling protocols fully operational with minimal panic. Those crossing borders dutifully took their tests and quarantined. Had this response not been taken seriously by our leaders, we could have been in a far more catastrophic situation right now. It is important to capture these learnings and recognise this adaptability and will to survive.

At this point, financial management and institutionalising new business processes are paramount. Financial results for the last two fiscal periods for many businesses may have shown a decline in profits or even losses arising. For those who managed to sustain their business, a turnaround is likely as the geopolitics and pandemic subside. As the pandemic wanes, the business leader must look ahead to the future and the new norm. Business plans written before the pandemic have to be revised with targets adjusted to reflect the current and foreseeable work load. Personnel can be redeployed, furloughed or reskilled until full capacity can be achieved.

Leaders must keep abreast of best practices, technology and new developments and see the pandemic as an opportunity to adopt modern practices and invest in technology, reengineer processes, diversify and explore new possibilities by adapting and optimising assets and resources in terms of both people and plant. Some businesses are already reinventing and retooling and finding themselves in as good as, or even better position than before the pandemic.

Leaders should also rely on a strong network, confer with their industry colleagues,

share ideas, build capacity, and have back up and response plans. The pandemic can be described as the great leveller, with many industry leaders setting aside business competition and finding time to open doors and create useful alliances and exchange views and tips with their peers.

Also important is learning from the impact of a pandemic. Those who manage facilities including the workplace, malls, public buildings and public transport must consider redesigning workflows and layout, ventilation streams and utilising some of the practices established during the pandemic so that an element of safety is sustained.

The silver lining

The optimist in all this sees light at the end of the tunnel. If there is a silver lining to this cloud that is the pandemic, it is the almost Renaissance-like creativity of so many of our citizens. Micro-businesses have mushroomed with "Mom and Pop" operations setting up all over the island. From home-made alcoholic beverages, chocolates and health drinks made from local crops, to dine-at-home gourmet food caterers; charming tourist-ready bed and breakfast rooms; programmers building applications; online tuition; personal apparel, gifts and plants delivered to your doorstep, a boon to both the merchant and the transport providers—entrepreneurs are everywhere.

Another very positive and heart-warming element of the pandemic was the enormous displays of love, by those who were able to, for their fellow man. Tremendous acts of altruism by businesses and individuals, such as putting together and delivering food hampers, cash, care packages, helping students with laptops, connectivity and masks, and so many more demonstrations of care and love.

As I close the music list, two more iconic songs come to mind—one of the most beautiful compositions ever, "Imagine" by John Lennon, and the reggae classic from Bob Marley and the Wailers "Three little Birds" and its famous line, "Every little thing, is gonna be all right!"



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Methanol as a fuel of the future



Verlier Quan-Vie | VP Commercial, NGC

For the average person in Trinidad and Tobago, methanol is an omnipresent but largely invisible part of everyday existence—an anonymous ingredient in plastics and aerosols, building and automotive materials, even face masks and pharmaceuticals. Elsewhere in the world, some publics have more direct interface with the chemical as a fuel for cars, cooking and even ships.

Its familiarity (or unfamiliarity) notwithstanding, this simple alcohol has been growing in importance over recent years, transitioning from a petrochemical derivative to a mainstream source of energy. It is now ascribed a key role alongside renewable energy technologies in climate action plans, due to the environmental and economic advantages associated with its production and consumption.

Trinidad and Tobago is currently one of the world's top producers of methanol. As a result of accelerated energy transition agendas and market interest in methanol as a cleaner energy source, the industry is ripe with opportunity.

The growing importance of methanol

Already an extremely versatile component in the manufacture of thousands of products from paints to cosmetics, carpeting to plastics, methanol is now gaining ground in innovative applications to meet global energy demand. The combustion of pure methanol has no nitrogen oxide (NOx) emissions, no sulphur oxide (SOx) emissions and very low particulate matter (PM) and carbon dioxide (CO2) emissions compared to other fossil fuels, making it a stellar clean energy source.¹

Moreover, due to its simple building blocks, methanol can be produced from a wide range of feedstocks, including sustainable biomass or renewable electricity sources (green methanol). Where methanol is produced using fossil fuels such as natural gas, carbon capture during the production process can still render a relatively cleaner energy source (blue methanol).

Methanol as a fuel for transport

One of the popular applications for methanol is as a motor fuel, either in combination with conventional gasoline or on its own. Methanol is used in gasoline blends around the world at low (3–5%), mid (15–30%), and high (50–100%) volume percentages, and as a diesel substitute for use in heavy-duty vehicles.² Methanol has been tested with positive results in heavy-duty vehicles on land as it provides clean burning in the engine and produces low levels of soot in combustion, compared with diesel oil or heavy fuel oils.

In September 2021, NGC Group subsidiary National Energy signed an MOU with Methanex Trinidad Limited to conduct a feasibility study around the viability of methanol as an alternative fuel for transport in Trinidad and Tobago and the region.³ This includes both marine and vehicular fuel applications. Under the MOU, National Energy and Methanex have engaged consultants to review the environmental and economic benefits of introducing different blends of fuel into the local market. The study is at the data gathering stage.

For cooking and heat

In developing countries, traditional cooking and heating methods using biomass and waste have been blamed for millions of deaths due to their harmful emissions.⁴ Methanol boilers have considerably lower emissions output and are much safer for indoor use.

In China, the burning of coal for cooking and heating was responsible for poor air quality and visible air pollution. Today, the country is one of the largest markets for methanol in these applications and demand will likely grow in tandem with energy needs.⁵

(continued on page 17)

1 <https://eibip.eu/publication/methanol-fuel/>

2 <https://www.methanol.org/road/>

3 https://media.ngc.co.tt/wp-content/uploads/2021/09/2021-09-28_media-release_national-energy-methanex-mou.pdf

4 <https://www.methanol.org/heat/>

5 Ibid

Continued from page 16

As a marine fuel

One of the most promising applications of methanol is as a fuel in the shipping industry. The International Maritime Organisation (IMO) has enforced new regulations to limit the sulphur content of ship fuels, in a bid to achieve deep emissions cuts from the shipping sector by 2050. This has forced shipping companies to explore alternative cleaner fuel options. Together with LNG, biofuels and hydrogen, methanol is an attractive option, with specific advantages as follows⁶:

- It is available globally and could be 100% renewable as it can be produced from a variety of renewable feedstocks

- It is compliant with increasingly stringent emissions reduction regulations
- Current bunkering infrastructure needs only minor modifications to handle methanol—methanol is similar to marine fuels such as heavy fuel oil (HFO), because it is liquid
- Infrastructure costs are relatively modest compared to potential alternative solutions such as LNG—methanol also allows for small incremental investments in infrastructure capacity as the number of users grows
- It is usually less expensive on an energy equivalent basis than competing fuels such as marine gas oil
- Shipping and chemical industries have a long history and ample experience in handling methanol safely
- It is biodegradable as most micro-organisms can oxidise it—therefore, the environmental effects of a large spill would be less than those of an equivalent oil spill

Methanol as a fuel for sustainable growth

Considering these and other applications for methanol, this chemical is likely to see substantial market growth in the coming years. Trinidad and Tobago is therefore well poised to leverage its position in global methanol trade to extract greater value from this commodity, and should seek to incorporate it into action plans for building a more sustainable domestic energy mix.

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6 <https://ngc.co.tt/wp-content/uploads/2019/08/gasco-news-july-2019-vol29-no2.pdf>

TTEITI update on energy revenue

Staff Writer | Energy Chamber

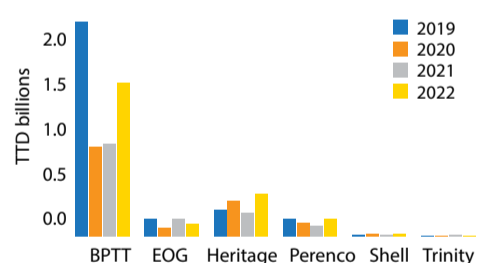
Introduction

In 2022, global energy commodity prices have been buoyed by the global demand-supply imbalance caused by the war in Ukraine. And, as expected, Trinidad and Tobago has benefitted. Sustained high prices of oil, gas, methanol and ammonia, even as the country recovers from the negative effects of COVID-19, have provided a boost in revenue. In last week's Mid-Year Budget Review, Minister Imbert confirmed improved GDP, cash flow and government's plans to use the spike in revenue to tackle debt, reduce the budget deficit and importantly, to fund a deposit to the Heritage and Stabilisation Fund (HSF).

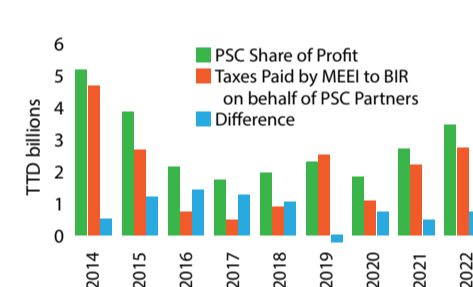
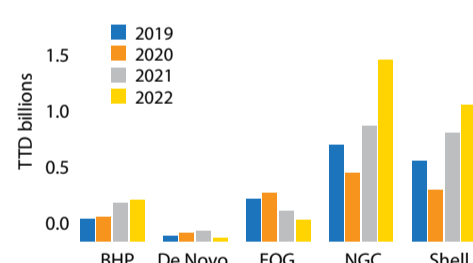
Given these plans, the Trinidad and Tobago Extractive Industries Transparency Initiative (TTEITI) thinks it is important to provide the national community with an up-to-date snapshot on the trends in energy tax revenue. The following data outlines royalty collections, our earnings from production-sharing contracts as well as our subsidy liability. However, it is important to note that these provisional figures have not been audited by the TTEITI Auditor/Administrator and revenue for fiscal 2022 accounts for monies received up to April 30, 2022.

Royalty

Open Oil, an extractive sector NGO, describes royalties as "a percentage share of production, or the value of the production which goes to the Government regardless of the rate of production or costs to the operator". This payment is made by petroleum companies directly to the Ministry of Energy and Energy Industries in exchange for the right to explore and produce from T&T's oil and gas acreage. Simply put, if a particular oil well produces 100 barrels per day in May and oil prices average US\$50 per barrel for that particular month, the cash flow would be \$5000 per day. If the government agreed to a 12.5% royalty rate then it would receive \$625 per day. Between fiscal 2011–2021, the royalty government received totalled \$22.3 billion and after changes to the royalty rate to 12.5% spiked in 2019. Royalties increased by 53% from \$1.7 billion in 2021 to \$2.5 billion in 2022. BPTT and Heritage were the two largest contributors, paying \$1.7 billion and \$474 million respectively in 2022.

Chart 1 – Royalty 2011-2022**Chart 2 – Royalty Payments By Individual Company 2019-2022****PSC share of profit**

The government receives a split/share of the profits from its producing Production Sharing Contracts (PSCs) with oil and gas companies. From this share of profit, the Ministry of Energy and Energy Industries (MEEI) also pays the tax liability of its PSC partners to the Board of Inland Revenue (BIR). For instance, if the government partners with two companies for a PSC, the State is entitled to pay taxes such as Petroleum Profits Tax, Supplemental Petroleum Tax, Unemployment Levy, Green Fund Levy etc. on behalf of its two partners. Between 2014–2022, the government received TT\$25 billion in PSC share of profit and paid TT\$18 billion in taxes from these profits on behalf of its PSC partners to the BIR. For fiscal 2022, there has been a significant increase in PSC share of profit. The share of profit then grew by 27% from \$2.7 billion in 2021 to \$3.4 billion in 2022. This represents the third highest share of profit received in the past nine years and only accounts for eight months of the fiscal year thus far. If prices continue to trend upwards, this year could see share of profit reaching a nine-year high. NGC and Shell were the two largest contributors, paying \$1.6 billion and \$1.2 billion respectively in 2022.

Chart 3 – PSC Share of Profit 2014-2022**Chart 4 – PSC Share of Profit By Individual Company 2019-2022****Ramifications of increased prices on HSF**

The Heritage and Stabilisation Fund (HSF) was established in 2007 for the purpose of saving and investing surplus petroleum revenues. According to the HSF Act, a minimum of 60% of the total excess (difference between estimated and actual) revenues must be deposited to the Fund during a financial year whereas withdrawal could be up to 60% of shortfall but not exceeding 25% of the fund and is permitted if annual tax revenue from oil and gas is at least 10% below budget projection. For instance, if total excess revenues are \$20 billion, then at least \$12 billion must be deposited into the Fund in accordance with the law. There has been a decrease in the value of the HSF from US\$6.3 billion in 2019 to US\$5.6 billion in 2021, as a result of the government turning to the HSF to finance fiscal deficits and to provide COVID relief. The government has withdrawn US\$900 million and a further US\$600 million respectively for the fiscal years 2020 and 2021. Initially, a fiscal deficit of \$9.095 billion was projected in the 2022 budget based on an oil price of US\$65/bbl and gas at US\$3.75/mmBtu. However, with oil and gas prices currently hovering around US\$112/bbl and

US\$8/mmBtu, the government has recorded a surplus of \$654 million in the Mid-Year Budget Review for the period October 2021 to March 2022. According to Minister Imbert, a deposit is expected to be made into the HSF as per the law for the first time in eight years. Given the swing in petrochemical prices as well, there have been suggestions by analysts that the HSF should also account for windfalls in petrochemical sector revenue.

Conclusion

The data presented above tells the story of energy sector revenue at a time when, due to the COVID-19 fallout and changing global trends such as digitisation, we need to rethink how we manage and allocate what is earned from the sector. There are also structural issues to be addressed in the energy sector that will change the country's energy landscape. These include the results of the deepwater and onshore bid rounds, the development of the Caribbean's largest solar project, changes to the fiscal regime to incentivise more production, the restructuring of Atlantic LNG's structure and a move towards liberalisation of retail fuel prices and reduction of the fuel subsidy.

While the fillip in prices can lead to short-term gain, these issues must also be addressed over the medium to long term to provide the country with a platform for sustainable growth. The data provided can help inform legal and fiscal reforms and provide independently verified research for analysts, policymakers and commentators. Most importantly, it empowers citizens with information to strengthen their demands for sustainable spending of the earnings from the energy sector, the mainstay of the national economy.

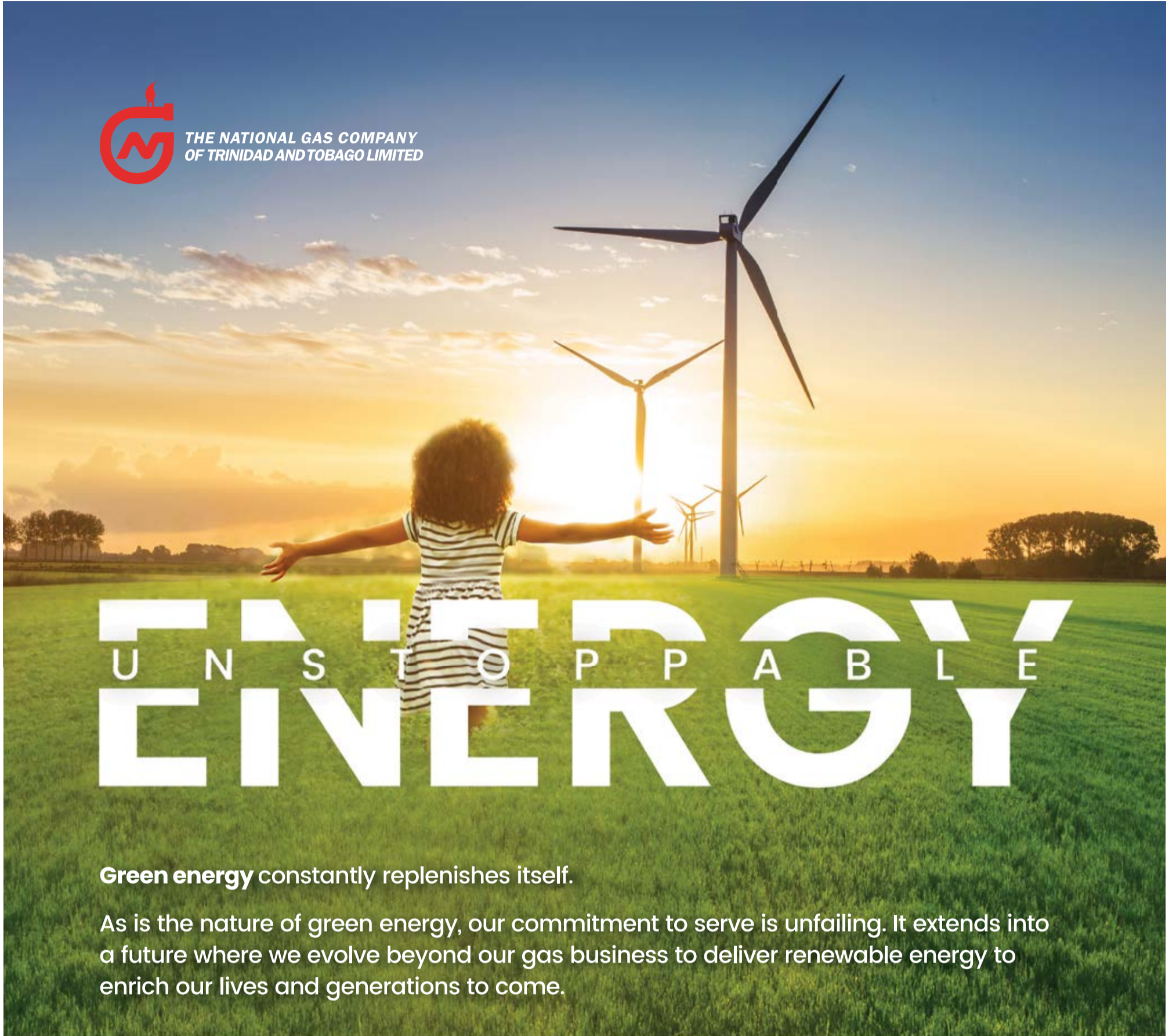
The latest Trinidad and Tobago EITI Report will be available in July.

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Crisis Communications 101: Fail to prepare... Prepare to fail



Sheldon Daniel | Contributor

The matter of crisis communication has gained prominence over the last three months because of several high-profile incidents involving companies in the energy and the non-energy sector. There will be no attempt in this article to speak to the specifics of any incidents, which range from cyber-security and workplace fatalities to national shutdowns. However, we can glean some general learnings from the public communications management of each incident. I will also draw on the experience gained from over 15 years of training senior teams on crisis management, mainly in the energy sector.

Before proceeding, I would like to situate the discussion on what constitutes a crisis for an organisation. There are numerous definitions, but they all tend to have four main elements. A crisis is a sudden (generally unexpected) event; the incident progress is fast-paced, and the eventual outcome is uncertain, with a potential long-term, adverse impact on the company's relationship with various stakeholders.

That last point on the impact on stakeholders suggests that crisis management is a very specialised form of a company's reputation management process. Done well, a firm can emerge either with minimum loss of reputation or even an enhanced reputation. Poorly done, it can erode consumer trust, bring increased regulatory scrutiny, and even threaten the firm's long-term viability. Viewed through this lens, the overall intent of crisis communication is to make sure that you are actively shaping the narrative of the event. You might not be in control of all the information that gets out about the incident, but you can try to manage and have control of the story being weaved, particularly among critical audiences.

Good crisis management practice occurs way before any crisis happens. For the rest of this article, I will focus on the corporate principles and actions that are key factors in being crisis ready. The lack of preparation, in my experience, represents the biggest gap among local organisations. Preparation narrows uncertainty, which is the key element that characterises a crisis.

So, what does "being prepared" look like?

Principle #1: Plan, test and repeat

First, a crisis management structure must be articulated, documented and routinely tested. This means having clarity of roles and responsibilities and processes that indicate nodes of decisions-making and information flows within the organisation, and to and from the external world, i.e. media, impacted families and communities, government, regulators, social commentators etc. These should be documented and regularly tested to identify and mitigate gaps or blind spots ahead of a real crisis. The less ambiguity concerning "who does what" in the crisis, the greater the chance of success.

Principle #2: Understand your risks

The adage "coming events cast their shadow before" is undoubtedly an apt way to think about a crisis. This is because crisis management is required when a business risk is realised. The more you understand the reputation risks facing your business, the greater the likelihood that you will be prepared when one happens. Much like safety risks in energy operations, early warning systems can help guide where the next major reputation incident

might most likely occur. This means constantly scanning and reviewing your business priorities, the policy and political environment, emerging topical issues, business-relevant public opinion and perspectives as well as keeping line of sight of other crises that may occur in other industries. The discipline of continuous scanning of the environment provides a useful lens to interrogate and risk-test your business plans and activities. Using a risk management perspective to prepare for a crisis can help reduce the element of surprise and provide (at least) basic preparation for the areas of highest risk.

Principle #3: Be engaged with your stakeholders

Stakeholder engagement is an important tool in building a "firewall" with primary publics. Getting external parties to know your business, interact with your leadership and create open lines of communication ahead of a crisis is a necessary protective action. External stakeholders and audiences are more likely to give you "the benefit of the doubt" if there is some familiarity or connection. This relationship-building can sometimes take a lot of time and, many times, is considered low priority. But if done well, it builds channels that can provide credible flows of information that are useful in getting your story told first, and in managing the narrative thereafter. A general rule of thumb is that if the first time a public official sees or hears you is when you are managing a crisis, then you are unlikely to have much influence at that initial stage. It is an imperative in good crisis management practice, to build the bank of goodwill ahead of a problem.

Principle #4: Identify and train your spokespersons

Of great importance is the role of a well-trained and competent spokesperson. As part of crisis preparation, your spokespersons must be ready to face a range of audiences. Nothing about a crisis is "usual", but that is even more so when senior business executives must handle media, family members or protesting communities in an uncertain situation, particularly where the loss of life or property might be a factor. Remember, a crisis is happening outside of the realm of "business as usual", and the environment is usually highly emotionally triggered. To be able to function calmly, and to stay on message, while at the same time presenting as knowledgeable, sensitive, and authentic, is not a common capability—and even the best of us need practice.

Conclusion

These four basic principles highlight that crisis management requires a robust, risk-based approach to anticipating and managing business-relevant reputation issues. The Global Crisis Survey 2021 by PWC found that "only 35 per cent of respondents had a crisis response plan that was 'very relevant,' which means the majority didn't design their plans to be 'crisis-agnostic'". Most did not even have plans to handle a range of generic reputation risks. Experience and recent events suggest that many of our local firms might be found wanting in this area as well.

If the incidents of the last few months have taught us anything, it should be, that crisis, if poorly managed, can and will have an impact. Further, the loss of reputation can sometimes take a very long time to recover the reputation, both for the firm and for the people involved. Good crisis management is good business practise requiring a leader to be aware of what is within your immediate control and to be prepared to act on those things first.

You cannot prevent a crisis, but you can certainly prepare—and you can certainly avoid a reputation failure.

Sheldon Daniel is an executive coach and founder/owner of SXD Leadership Communications. He is also co-creator of the Communicating for Influence (CFI) leadership training series.

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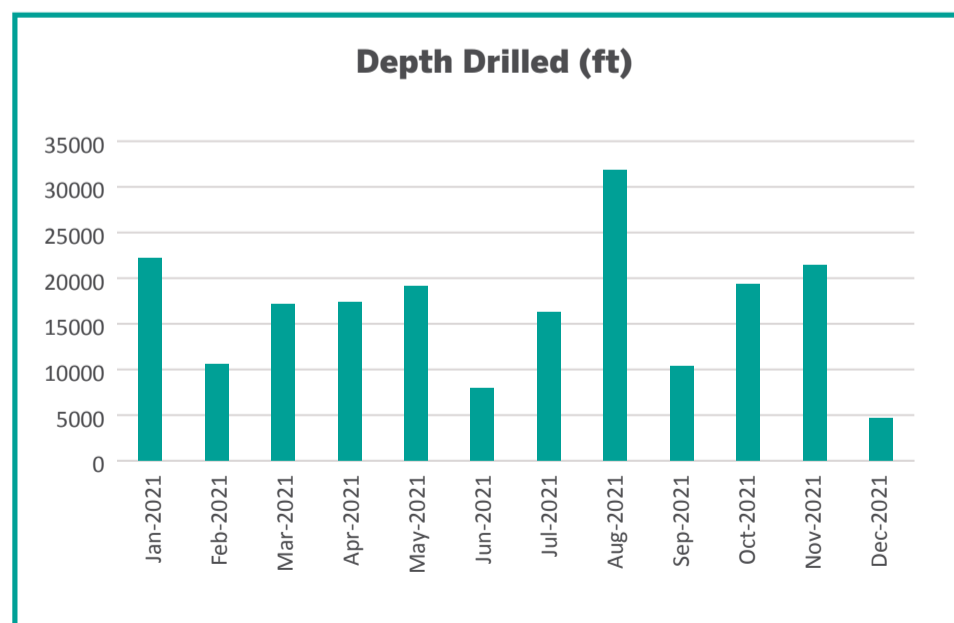
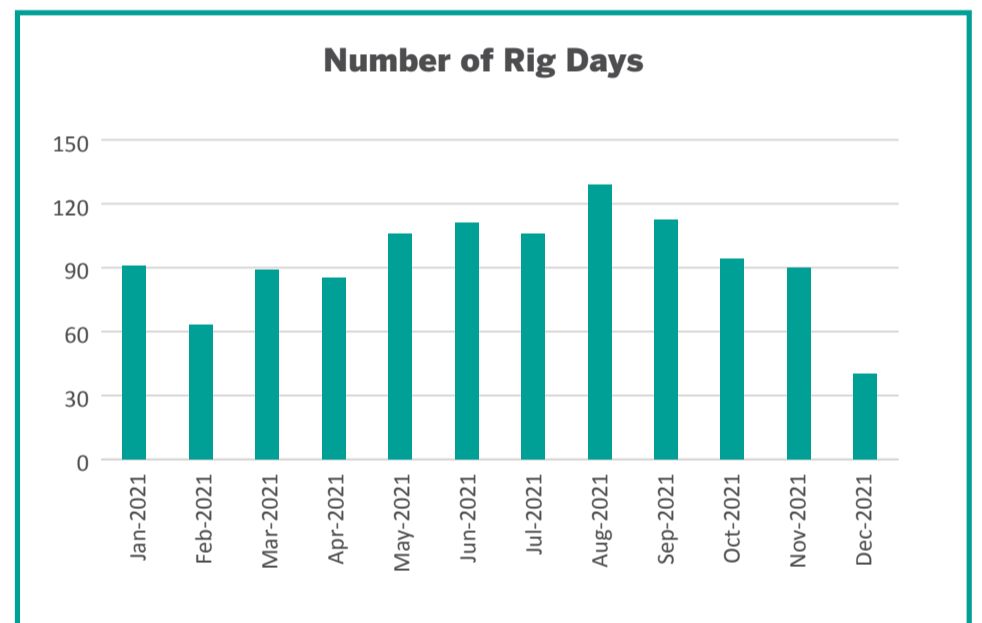
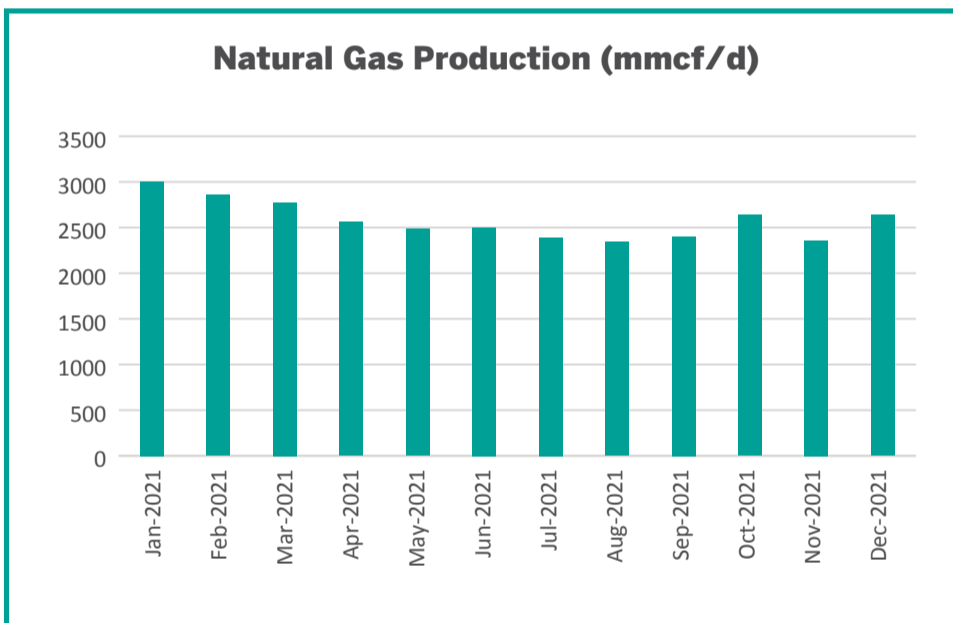
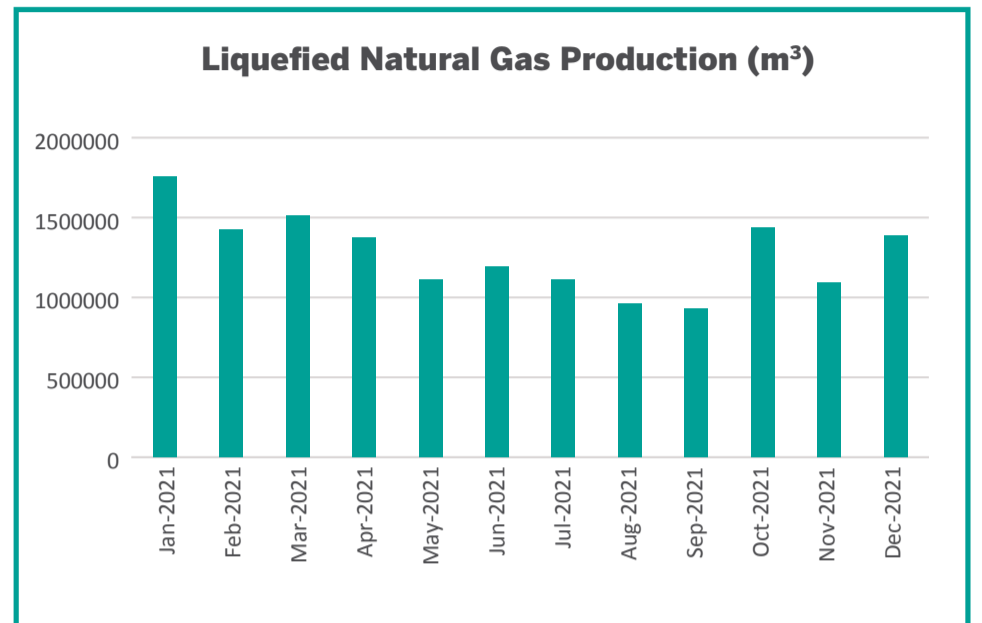
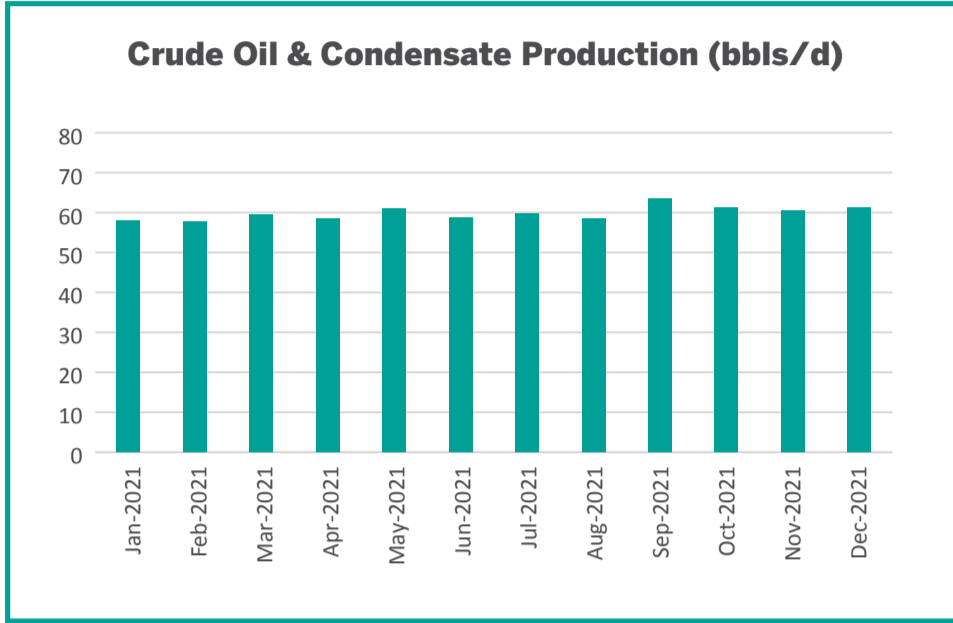
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Monthly Review

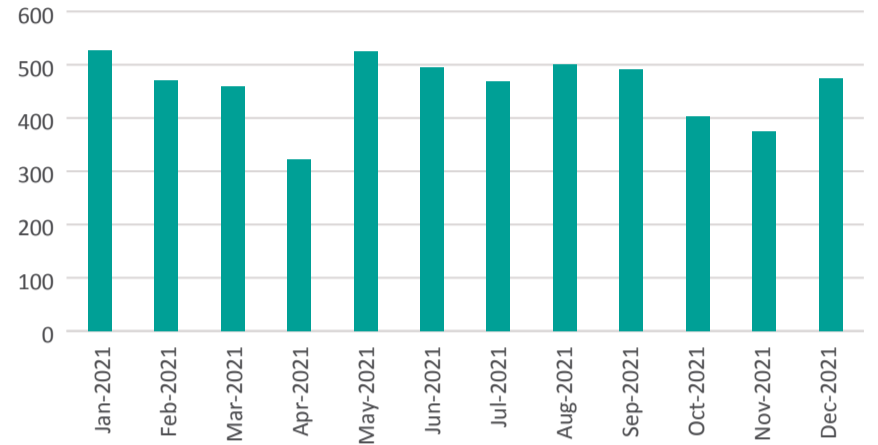


Monthly Review

Production of Ammonia (000's Tonnes)



Production of Methanol (000's Tonnes)



Exports of Ammonia (000's Tonnes)



Exports of Methanol (000's Tonnes)



efficiency

IETA, ICROA and ITN Productions collaborate to produce a news-style programme “Net Zero: The Integrity Pathway”

Staff Writer | Energy Chamber

Climate change is the most pressing issue of our time and reducing emissions has become vital, but decarbonisation represents a huge challenge for companies. Globally, organisations have a responsibility to act if the Paris Agreement’s climate protection goals of achieving net zero by 2050 are to be achieved.

The pathway to net zero follows a mitigation hierarchy, which states that organisations should have both long- and short-term science-based targets to address greenhouse gas emissions, not only from their own supply chain (insetting), but also offsetting unavoidable emissions by investing in carbon projects.

IETA, ICROA and ITN Productions Industry News are producing a news-style programme, “Net Zero: The Integrity Pathway.” Anchored by author and presenter Claire Nasir from ITN’s London studios, the programme will educate on best practices in corporate GHG mitigation, including high integrity carbon offsetting and insetting, and why a responsible approach to net zero considers avoiding, removing, and reducing emissions.

The programme will raise awareness of best practices in carbon reduction and offsetting, showcase the organisations performing well in this area and highlight the benefits and impacts these activities have on individuals and communities on the ground. The programme will also explore the difference between compliance markets and voluntary markets and the latest technological advances and innovations surrounding the trajectory to net zero.



Featuring expert interviews, news items and reporter-led sponsored editorial profiles from leading organisations filmed on location, the programme will launch in early November 2022 and will be supported by an extensive campaign targeting IETA members and professional networks.

“Building on last year’s success with ITN Productions in showing how carbon markets work, this year we hope to illuminate public understanding of how businesses are embracing the net zero challenge – with innovation, enthusiasm and the “can do” entrepreneurial spirit of our community,” said Dirk Forrister, CEO and President of IETA.

“We want to feature “the do-ers” who are already showing success on the net zero journey.”

Nina Harrison-Bell, Head of ITN Productions Industry News said: “We are delighted to be working with IETA and ICROA to make a programme that raises awareness and demonstrates the importance of setting new global standards for high integrity carbon offsetting to help reduce and remove greenhouse gas emissions and shows the organisations who are accelerating progress in the role carbon markets play.”

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IRENA’s 23rd Council Meeting ends with call for inclusive energy transition

Staff Writer | Energy Chamber

The 23rd Council of the International Renewable Energy Agency (IRENA) in Abu Dhabi ended recently after two days of deliberations on the Agency’s medium-term strategy.

Francesco La Camera, IRENA’s Director-General, presented his vision for the Agency’s work and direction through its medium-term strategy until 2027: “Going forward, it will be even more important to anticipate the direction of change and understand the wide-reaching impacts of the energy transition. For instance, as hydrogen started to emerge as a policy priority, we have been at the forefront of work in this sector across technology, policy and geopolitics.”

IRENA belongs to all nations, La Camera emphasised, ranging from the most developed, through the transitional and emerging economies, to small islands. He stressed the Agency’s diverse membership as key in supporting the global community on the path to an energy transition that is inclusive, resilient and fair.

The Director-General also highlighted IRENA’s work on critical materials as an example of the Agency being at the forefront of the global agenda, staying abreast of timely topics crucial to moving the global agenda on the energy transition forward.



Abu Dhabi

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Global electric car sales have continued their strong growth in 2022 after breaking records last year

Staff Writer | Energy Chamber

Electric car sales powered through 2021 and have remained strong so far in 2022, but ensuring future growth will demand greater efforts to diversify battery-manufacturing and critical mineral supplies to reduce the risks of bottlenecks and price rises, according to the International Energy Agency.

Sales of electric cars (including fully electric and plug-in hybrids) doubled in 2021 to a new record of 6.6 million, with more now sold each week than in the whole of 2012, according to the latest edition of the annual Global Electric Vehicle Outlook. Despite strains along global supply chains, sales kept rising strongly into 2022, with two million electric cars sold worldwide in the first quarter, up by three-quarters from the same period a year earlier. The number of electric cars on the world's roads by the end of 2021 was about 16.5 million, triple the amount in 2018.

In China, electric car sales nearly tripled in 2021 to 3.3 million, accounting for about half of the global total. Sales also grew strongly in Europe (increasing by 65% to 2.3 million) and the United States (more than doubling to 630,000). Chinese electric cars are typically smaller than in other markets. Alongside lower manufacturing costs, this has significantly reduced the price gap with traditional cars. The median price of an electric car in China was only 10% more than that of conventional offerings,

compared with 45% to 50% on average in other major markets. By contrast, electric car sales are lagging in most emerging and developing economies where only a few models are often available and at prices that are unaffordable for mass-market consumers.

Sustained policy support has been one of the main reasons for strong electric car sales in many markets, with overall public spending on subsidies and incentives doubling in 2021 to nearly USD\$30 billion. A growing number of countries have ambitious vehicle-electrification targets for the coming decades, and many carmakers have plans to electrify their fleets that go beyond policy targets. Five times more electric car models were available globally in 2021 than in 2015, and the number of available models reached 450 by the end of 2021.

"Few areas of the new global energy economy are as dynamic as electric vehicles. The success of the sector in setting new sales records is extremely encouraging, but there is no room for complacency," said IEA Executive Director Fatih Birol. "Policy makers, industry executives and investors need to be highly vigilant and resourceful in order to reduce the risks of supply disruptions and ensure sustainable supplies of critical minerals. Under its new Ministerial mandate, the IEA is working with governments around the world on how to strategically manage resources of critical minerals that are needed for electric vehicles and other key clean-energy technologies."

In the short term, the greatest obstacles to continued strong EV sales are soaring prices for some critical minerals essential for battery-manufacturing, as well as supply chain disruptions caused by Russia's attack on Ukraine and by continued COVID-19 lockdowns in some parts of China. In the longer term, greater efforts are needed to roll out enough charging infrastructure to service the expected growth in electric car sales, the report says.

Prices for lithium, a crucial mineral for car batteries, were over seven times higher in May 2022 than at the start of 2021, and prices for cobalt and nickel also rose. All else being equal, the cost of battery packs could increase by 15% if these prices stay around current levels, which would reverse several years of declines. Russia's invasion of Ukraine has created further pressures, since Russia supplies 20% of global battery-grade nickel.

Governments in Europe and in the United States have promoted industrial policies aimed at domestic development of EV supply chains, as more than half of all lithium, cobalt and graphite processing and refining capacity is located in China. In addition, China produces three-quarters of all lithium-ion batteries and has 70% of the production capacity for cathodes and 85% for anodes, both of which are essential components of batteries. More than half of all electric cars in 2021 were assembled in China, and the country is poised to maintain its manufacturing dominance.

While nearly 10% of all cars sold worldwide in 2021 were electric, the figure for global truck sales was just 0.3%. This share would need to increase to around 10% by 2030 in a scenario aligned with the climate pledges and targets announced to date by countries worldwide, and to 25% by 2030 in the IEA's Net Zero Emissions by 2050 Scenario. Electric trucks have so far been substantially deployed only in China, thanks to strong government support. But other countries have announced plans for heavy-truck electrification, and manufacturers are widening their choice of models. Long-range trucks require high-power charges that are currently expensive and often require grid upgrades. The new IEA report recommends greater government support and planning for public-charging infrastructure.

Other recommendations include using stringent vehicle efficiency and carbon dioxide emission standards to underpin demand for EVs, prioritising two- and three-wheelers and urban buses to kick-start EVs in emerging and developing markets, and promoting more investment in critical mineral extraction while respecting environmentally and socially sustainable practices to ensure sufficient supplies to power the clean-energy transition.

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bpTT, IMA join forces on biodiversity pilot project

Staff Writer | Energy Chamber

Tobago's world-renowned coral reefs are to be the subject of an extensive Institute of Marine Affairs (IMA) initiative to determine the most effective strategies to rehabilitate and strengthen the endangered ecological wonder.

The Marine Resilience Initiative (MARIN) Tobago Project was launched recently at the Pigeon Point Heritage Park by the IMA in partnership with bp Trinidad and Tobago. It is an 18-month pilot, which seeks to determine appropriate and feasible rehabilitation strategies for both the coral reefs as well as the seagrass beds that surround Tobago and are part of Tobago's marine ecosystem. They have suffered degradation over decades by a combination of climate change and human impacts. One of the most notable impacts was the loss of up to 50 per cent of hard coral cover due to bleaching in 2010. Seagrass beds along the island's southwest coast have not escaped, facing land-based pollution, coastal developments such as land reclamation and natural events such as Sargassum influx.

Speaking at the launch, Minister of Planning and Development, Penelope Beckles, said: "These ecosystems provide us with too many services to allow the degradation to go unaddressed. Our fisher-folk, tour operators, small traders depend on these marine ecosystems to remain at its optimum in order for their ocean-based business to grow and prosper. The importance of this assessment, therefore, cannot be overemphasised."

bpTT's President, Claire Fitzpatrick, shared this sentiment and noted that projects like MARIN Tobago demonstrate the leading role Small Island Developing States like Trinidad and Tobago can play in finding solutions to global issues like sustainability and climate change.

"I am very excited about what that project could mean for environmental protection,

preservation of livelihoods and sustainability. It will also contribute to building greater climate resiliency as we face the continued threats of climate change," said Fitzpatrick.

MARIN Tobago is one of two major initiatives bpTT is supporting in Tobago, the other being an oyster farming pilot project in Charlotteville in collaboration with the Environmental Research Institute Charlotteville (ERIC). Fitzpatrick explained that these were aligned with the company's global focus to improve lives and care for the planet and its ongoing commitment to Trinidad and Tobago's development.

MARIN Tobago will focus on five coral reef sites:

- Buccoo Reef in the Marine Protected Area
- Mt Irvine Reef, and Flying Reef in southwest Tobago,
- Booby Island Reef, Charlotteville
- Angel Reef, Speyside in northeast Tobago.

Southwest Tobago, namely Bon Accord Lagoon in the Marine Protected Area, Petit Trou and Kilgwyn Bay, will be the location for assessing the seagrass beds for current ecological health and then testing of the different replanting methodologies.

Project lead and coral reef ecologist, Dr. Anjani Ganase, said the feasibility assessment for rehabilitation and restoration is a crucial first step to guide the implementation of future restoration activities in Tobago. She said the IMA intends to work closely with the impacted communities and stakeholders to ensure they understand the project's value and the importance of their role in its success.

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Shell to acquire Sprng Energy group, one of India's leading renewable power platforms

Staff Writer | Energy Chamber

Shell Overseas Investment BV., a wholly owned subsidiary of Shell plc (Shell), today signed an agreement with Actis Solenergi Limited (Actis) to acquire 100% of Solenergi Power Private Limited for \$1.55 billion and with it, the Sprng Energy group of companies.

Sprng Energy supplies solar and wind power to electricity distribution companies in India. Its portfolio consists of 2.9 gigawatts-peak1 (GWp) of assets (2.1 GWp operating and 0.8 GWp contracted) with a further 7.5 GWp of renewable energy projects in the pipeline.

"This deal positions Shell as one of the first movers in building a truly integrated energy transition business in India," said Wael Sawan, Shell's Integrated Gas, Renewables and Energy Solutions Director. "I believe it will enable Shell to become a leader across the power value chain in a rapidly growing market where electrification on a massive scale and strong demand for renewables are driving the energy

transition. Sprng Energy generates cash, has an excellent team, strong and proven development track record and a healthy growth pipeline. Sprng Energy's strengths can combine with Shell India's thriving customer-facing gas and downstream businesses to create even more opportunities for growth."

The solar and wind assets Shell acquires through the deal will triple Shell's present renewable capacity in operation and help deliver its Powering Progress strategy. An important part of Powering Progress is to develop a best-in-class integrated power business, which will help Shell to reach its target of becoming a profitable net-zero emissions energy business by 2050.

The transaction is subject to regulatory clearance and is expected to close later in 2022.

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NGC and CCCCC collaborate to tackle climate change in the region

Staff Writer | Energy Chamber

NGC has long since recognised that the fight against climate change can only be successful if there is an ecosystem of partners and stakeholders, committed to knowledge, who share and integrate skills to build a sustainable energy future for the Caribbean. As a demonstration of this ethos, NGC signed a Memorandum of Understanding (MOU) with the Caribbean Community Centre for Climate Change (CCCCC) to mutually cooperate in areas and activities that can positively impact regional climate change.

The MOU focuses heavily on strengthening the rigour of the collection and analysis of climate change data to support evidence-based decision-making throughout CARICOM. It also allows for information from the CCCCC's Regional Clearinghouse Database to be shared on NGC's CariGreen website to encourage greater accessibility, availability and use of regional climate change data. CariGreen was launched in June 2021 to facilitate investor, academic and citizen research into clean energy. The 2.0 version will be available by the end of May 2022.

Beyond the knowledge transfer, the MOU provides NGC and members of The NGC Group the opportunity of exploring investments in clean energy and renewable energy projects that are being implemented or developed by the CCCCC in CARICOM countries. The collaboration has created a space for NGC and CCCCC to pursue joint projects aligned with the green sustainability agenda of both parties.

Encouraging meaningful dialogue through education and awareness is critical to transforming attitudes and behaviours around climate change. The MOU also covers joint communication and visibility programmes, which can be developed to promote climate change mitigation and adaptation awareness initiatives and net-zero commitments aimed at improving climate change awareness in the CARICOM region.

NGC President Mark Loquan remarked: "NGC is excited about the immense potential of this collaboration with CCCCC. We have already identified functional areas for practical initiatives that will produce tangible results and outcomes. The company continues to actively seek organisations, which, like NGC, are pursuing a green agenda to confront climate change, promote energy transition and achieve energy efficiency and environmental sustainability."

CCCCC's Executive Director Colin Young stated that the "CCCCC is eager to pursue this collaboration with NGC that will contribute to bolstering the substantial efforts undertaken by the CCCCC to collect, analyse and use climate data for evidence-based decision-making, which will better position CARICOM Member States to make the climate rationale necessary to attract climate finance for climate-resilient development. Strategic partnerships, such as this one with NGC, are essential to crowd-in innovation, private sector knowledge, expertise and finance needed to accelerate the transition to net zero by 2050 in order to keep 1.5°C temperature goal alive. We are pleased to see the tangible commitments being undertaken by NGC via its CariGreen agenda towards net zero and environmental sustainability."

NGC and its subsidiaries recognise the value and importance of sharing and leveraging resources among stakeholders to meet climate change challenges. NGC is ready to accept the challenge and is well positioned to create partnerships that will shape national and regional conversations around sustainability.

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Taxes waived on hybrid cars in T&T

Staff Writer | Energy Chamber

The Minister of Finance of Trinidad and Tobago, Colm Imbert, announced that all taxes (customs duty, motor vehicle tax and value added tax) will be waived on passenger hybrid motor cars for private use.

This is a step closer to reducing emissions from the transport sector in T&T.

The minister also indicated that the waived taxes will be for hybrid cars with an engine size not exceeding 1,599 cc and an electric motor output not exceeding 105 KW. He further stated in a press release that the age of used passenger hybrid cars meeting these specifications has

been fixed at no more than three (3) years. These specifications will allow the vast majority of small hybrid passenger cars for private use to be imported into Trinidad and Tobago free of all taxes.

This measure came into effect on May 25, 2022.

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Lightsource bp unlocks East Asia market with 150MW fishery solar project

Staff Writer | Energy Chamber

Lightsource bp, a global leader in the development and management of solar energy projects, continues its global expansion – this time setting foot in East Asia. Working with Green Rock Energy on a co-development opportunity, Lightsource bp has secured a 150MW project co-locating solar with aquaculture. Lightsource bp's strategy in Taiwan is underpinned by partnering with Taiwanese developers to combine its world-class solar expertise with the local knowledge and experience of our partners. Another key element to its strategy is hiring local companies at various stages of the project's development.

Nick Boyle, Group CEO, Lightsource bp, said: "There are a lot of interesting opportunities for solar in Asia, and our long-term ambition is to have an EMEA, Americas and an Asia Pacific region, so we're excited that through our first East Asian project in Taiwan we are beginning to build that third leg of the stool. Taiwan relies on imports for about 95% of its energy, which leaves its energy supply vulnerable to external disruption. This energy challenge, coupled with the need for sustainably generated electricity, makes Taiwan a unique project and we're thrilled to draw on our global experience and work with Green Rock Energy to step up to the challenge."

A step closer to a low-carbon future

The move to enter the Taiwanese market comes after Lightsource bp secured a \$1.8 billion credit and trade finance facility last year to fuel its global growth strategy of developing 25GW of solar by 2025. The funding is provided by 10 top tier global financial institutions to aid its growth ambitions and execution strategy as it continues to accelerate the deployment of solar across the EMEA, Americas and Asia Pacific regions.

Commenting on Lightsource bp's move into East Asia, David Anderson, bp's senior vice president of renewables growth, added:



"This deal reflects the innovative ways renewable energy can be deployed to power both industries and communities. Lightsource bp has achieved phenomenal growth and it's exactly the type of pace we want to keep as we head towards a Net Zero future."

Eugene Chien, Ambassador-at-large of Taiwan, and Chairman of Taiwan Institute for Sustainable Energy, said: "In the process of promoting Taiwan to achieve its net-zero emission goal, the industrial chain, public and private sectors, and the public need to join hands to jointly promote the comprehensive transformation of energy, industry, life and society. Among them, the solar energy industry plays a key role in Taiwan's energy transition process. It is great to see world-class solar companies like Lightsource bp join the ranks of Taiwan's energy transition and work together to achieve the goal of 20GW of solar energy installations by 2025."

Cohabiting solar and aquaculture to bring economic benefits

Lightsource bp's 150MW project gives equal consideration to clean energy, ecological and economic development.

The 150MW Budai project will be one of the largest fishery solar farms in Taiwan, creating 750 employment opportunities during construction, which is expected to commence in June 2023. Once constructed, the project will produce 210,000MWh of renewable electricity a year – that's enough to power roughly 43,000 homes and save 133,770 tonnes of carbon dioxide emissions annually.

Alongside providing locally generated renewable energy and creating new jobs, Lightsource bp's fishery solar project has been designed to benefit the local environment and community. Throughout the process, Lightsource bp engaged environmental specialists as well as local fishermen to provide expertise and design a project with multiple benefits. These include enabling fishermen to farm on around 200 ponds as well as adding saltwater storage ponds to optimise the water management process for the fish farmers.

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TOFCO to train Guyanese welders through joint venture

Staff Writer | Energy Chamber

Trinidad Offshore Fabricators Unlimited (TOFCO) entered a joint venture with Guyana Oil and Gas Support Services (GOGSSI) back in 2021. As part of this JV, welders from Guyana have received training at TOFCO's facilities in LABIDCO in La Brea, Trinidad. Five welder trainees from Guyana were at the facility receiving training on various aspects of welding and fabrication. An additional eight trainees are in Guyana at a mirrored facility and at the end of the training period, the two groups of trainees will be rotated to continue training in more advanced techniques.

The trainees shared their experiences with EnergyNow and indicated that they were pleased with the programme thus far. Despite coming from different backgrounds, the trainees all had some level of experience in welding. Some of the trainees were more experienced than others, with one trainee in particular having actually worked in Singapore on the FPSO. Other trainees worked in other areas of industry, including construction and the bauxite industry.

The trainees also spoke about the good sense of camaradery among the group. They indicated that despite the challenging nature of the programme, it is very hands on and practical. They also mentioned that the process has also been very collaborative. The other trainees help each other out so that everyone progresses quickly through the programme.

The main reason for the progress according to one of the trainees is the interaction between the trainers and the trainees. The trainee said that some persons came into the programme with their own techniques and ways of doing things, but the trainers were able to show them the proper procedures in a way that was easily understandable and yet not dismissive.

The trainers expressed the intention to learn as much as they can about welding and try to get more certifications when they return to Guyana. They said that they were also eager to get into practice and pass on the knowledge to others in Guyana.

According to TOFCO's General Manager Javed Mohammed, this initiative tries to emulate the local content development success the company has had in the La Brea community (in Trinidad), which it is now replicating in Guyana. He mentioned that when TOFCO was formed 18 years ago, it started as a joint venture and has since become an independent organisation, able to train and certify hundreds of people in Trinidad, primarily from the local community.

The vision has extended to the same in Guyana where TOFCO has formed a joint venture with GOGSSI (TOFCO-GOGSSI Inc.). This vision has now expanded to developing Guyanese nationals to start becoming self-sufficient. They have committed to begin training in TOFCO in Trinidad and at GOGSSI in Guyana. At present, 8 welders are being trained in Guyana and 5 in Trinidad at TOFCO. It is currently scheduled for a 3-month period. Thus far the trainees have completed approximately 1 month of training.

According to Mohammed, when the welders arrived they were assessed on their current skills. They were also given approximately 2 weeks of classroom sessions with expert trainers. The trainers would explain the processes used on-site and introduce the different types of practical training which would take place over the remainder of the training.

The trainees started on welding plates and combination training – gas tungsten arc welding (TIG) and shielded arc welding (SIG). These are done in order for them to do pipeline welding (jumper fabrication). Mohammed indicated that this was primarily done at TOFCO's facilities, which can now be done in parallel in Guyana.

Mohammed indicated that the plan is to have the trainees move from plate to pipe (which is what is needed to be certified on carbon steel jumpers)—focus is being placed on carbon steel welding and training for shielded metal arc welding and gas tungsten arc welding. He added that once they have been assessed



at the pipe stage, they would be tested for jumper fabrication. At this stage they would be certified to weld on jumpers going forward, whether it be in Guyana or supported at TOFCO.

In addition, he added, within the first month, progress has been positive, and it is likely that the programme will be accelerated and the welder trainees will be exposed to flux core training. This additional training would be beneficial to make use of opportunities requiring structural welding.

The programme gives welders certification to ASME and AWS.

The welding training programme will be ongoing and will be expanded to other crafts including other aspects of fabrication, rigging, scaffolding, painting.

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