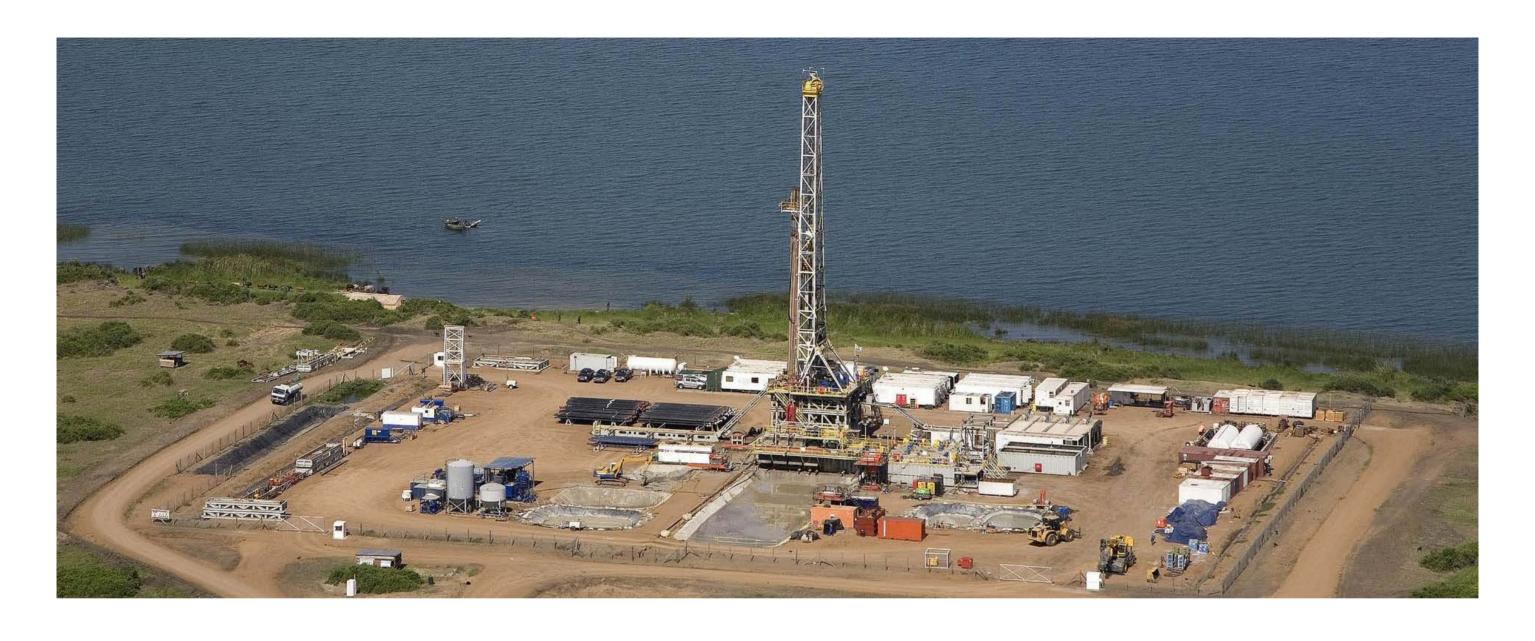


The Tilenga Project

UGANDA'S GAME-CHANGER





TTP

THE TILENGA PROJECT

Uganda's Game-Changer

RESEARCH BY JOSEPH PHILLIPS



ganda's Lake Albert region has become a major focal point for the East African country's ambition to tap into its considerable oil and gas reserves and a desire by stakeholders, communities and environmental groups for the unspoilt beauty to be carefully protected and preserved for future generations.

The Tilenga Project is being undertaken by lead company, French energy major TotalEnergies in collaboration with other partners. While it aims to reach a production capacity of 230,000 barrels of oil per day, the project is not only about oil; it's also about sustainable development, local engagement, and environmental responsibility.

2024 will mark several key milestones: TotalEnergies' 100 years of operation, the birth of the Tilenga Project, and a turning point for Uganda's economy, people and natural resources.

Operational Overview

The Tilenga field - with the name derived from local names for the Uganda Kob: "TIL" in Luo and "ENGAbi" in Lugungu - is

••••••

2024 will mark several key milestones: TotalEnergies' 100 years of operation, the birth of the Tilenga Project, and a turning point for Uganda's economy, people and natural resources.



located in Albertine Graben within the Buliisa and Nwova districts in the north of Lake Albert, a major oil and gas resource area estimated to contain more than one billion barrels.

The project is part of the wider Lake Albert development project, comprising the Kingfisher oil field and the East African Crude Oil Pipeline (EACOP).

In Tilenga, TotalEnergies holds a 56.67% stake, while China National Offshore Oil Corporation (CNOOC) and Uganda National Oil Company (UNOC) have shares of 28.33% and 15%, respectively. Over at least 20 years, Tilenga and neighboring Kingfisher, are expected to produce an estimated 1.4 billion barrels of crude oil.

The project consists of six fields spanning an area of 110.00 ha. Production licenses include three from Contract Area-1, and

three in the northern section of License Area-2. The Jobi-Rii site is located within the Murchison Falls National Park, which is a protected area home to various wildlife and is an important tourist attraction.

Tilenga will consist of 426 petroleum wells across 31 locations within the six production areas. Two hundreds will be water-injecting wells, 196 oil-producing wells, two polymer pilot wells, and 28 will be reference wells. Ten wells will be drilled in the Murchison Falls National Park area to minimise the project's footprint in the protected area.

The project will include a 160km of flowlines and buried pipeline network, a central processing facility (CPF), and a water abstraction system. Other infrastructure such as new roads and temporary and a permanent operation support base camp will be developed.



f | O | X | in **PEOPLE** INNOVATION **CUSTOMER FOCUS** Ensuring Safety | Quality | Excellence **OUR SERVICES** Inspection • Testing • Technical • Certification Training **OIL & GAS SERVICES** Lifting Testing (NDT) Rope Access • Tubular Inspection • Lifting Inspection PSV - PRV Services Training Facilities Inspection Kent Petrofac Applus Petrofac

INSPECTA AFRICA

Inspecta Africa is the pioneer Ugandan supplier of surface wellheads, trees, valves and actuators to the oil and gas industry. We have been providing engineering, installation, testing (including Non Destructive Testing -NDT), consultancy, certification and training services, and life-of field support services customized to our customers' needs since 2012.

Inspecta Africa has a team of highly qualified service technicians, strategically placed close to our clients, to provide daily reactive and proactive Oil and Gas related services. We offer a comprehensive installation service as well as 24/7 operational assistance on all our products and our flexible and focused set-up allows us to mobilize at short notice to create scenario plans with clients to ensure processes are in place for any potential outcome.

With Inspecta Africa staff holding North Sea Lifting certification, we are currently doing inspection works on the pipeline from the well-pads in the Tilenga oilfield, together with our partners Applus+ RTD-Velosi.

Early this year, Inspecta Africa rubbed shoulders with other key stakeholders in Uganda's Oil and Gas fraternity as they participated in the 9th annual Oil and Gas Convention held at the Kampala Serena



Hotel under the theme "The Journey to first oil in the Face of a Just Energy Transition in Uganda" was a success.

Organized by the Uganda Chamber of Mines and Petroleum, the two-day event had over fifty exhibitors and six hundred guests. At the front was one of the biggest brands in the industry, Inspecta Africa, who also doubled as sponsors and had a slot on the panel.

In his submission, Project Manager Anthony Mugira preached that competition is the only path to developing the sector to great heights since a tune of \$7.lbn of contracts have been handed out for services in the Oil Sector ranging from camp management, drilling, waste management, and warehousing, among others.

inspectaa.com

Produced oil will be delivered to the CPF in Kasenyi village, Ngwedo, Buliisa for the removal of impurities such as water, sand, salts and gas from the oil produced. The water produced will be reinjected into local fields while the associated gas will be processed into liquefied petroleum gas (LPG), for further sale.

The associated gas produced will be

also utilised for generating the power required for the treatment process and the production of LPG. The excess power generated will be exported to the pipeline and the national grid via a 132kV transmission line.

A 95km-long, 24in diameter feeder pipeline is planned to transport crude oil

info@inspectaa.com

Dr Ruth Nankabirwa, Uganda's Minister of Energy and Mineral Development, stated: "Works on the upstream projects at Tilenga and Kingfisher are progressing very well with four rigs in the country drilling development wells and construction of the industrial area to host the CPF and their auxiliary parts."

from the CPF to a delivery point in Kabeele. From there, it will be transported through EACOP to Tanzania.

In March 2024, Dr Ruth Nankabirwa, Uganda's Minister of Energy and Mineral Development, stated: "Works on the upstream projects at Tilenga and Kingfisher

are progressing very well with four rigs in the country drilling development wells and construction of the industrial area to host the CPF and their auxiliary parts."

Uganda National Oil Co CEO Proscovia Nabbanja added: "We are on track for first oil in H1 2025."



Strategic Importance

Economic Growth: The Total Energies Tilenga Project is a cornerstone of Uganda's economic transformation. This ambitious initiative is set to significantly elevate Uganda's GDP by injecting billions of dollars into the economy. According to Patrick Pouyanné, Chairman and CEO of Total Energies, "Tilenga is more than just an energy project; it's a catalyst for economic development in Uganda. By creating thousands of jobs and stimulating local economies, we are fostering a

sustainable economic environment."

Beyond the macroeconomic benefits, Tilenga will create thousands of direct and indirect jobs, catalyzing a ripple effect of economic activity across the region. Local businesses will thrive from increased demand for services and goods, creating a vibrant, interconnected economy. For executives looking at expanding their business footprint, Tilenga offers a plethora of opportunities—from construction and logistics to hospitality and retail.

Patrick Pouyanné, Chairman and CEO of Total Energies,
"Tilenga is more than just an energy project; it's a catalyst
for economic development in Uganda. By creating
thousands of jobs and stimulating local economies, we are
fostering a sustainable economic environment.





- **+256 756 268 722/+256 312 330 600**
- info@mantracuganda.com



MANTRAC UGANDA LTD.

MANTRAC Uganda Ltd. is the sole authorized dealer for Caterpillar products in Uganda with a head office located in Kampala. As part of the MANTRAC Group - the Caterpillar dealer in nine countries on three continents - we enjoy being part of such a large and focused organization.

Our Products and Services

MANTRAC Uganda Ltd. offers new, rental and quality used Caterpillar equipment. The Caterpillar product line, consisting of more than 300 machines, sets the standard for productivity and durability. The product range includes but is not limited to: Hydraulic Excavators, Motor Graders, Backhoe Loaders, Tele-handlers, Soil Compactors, Skid-Steer loaders, Articulated Dump Trucks, Track-Type Tractors, Wheel Loaders, Track Loaders, Asphalt Pavers and Asphalt Compactors.

As a leading Power-Systems supplier, MANTRAC Uganda Ltd. is committed to providing you with Electric Power Solutions to operate your business at maximum efficiency, waring operational costs and giving you the best return on investment. We offer CATERPILLAR generators ranging from 10 kVA to 7000 kVA, providing both primary and standby power.

MANTRAC Uganda Ltd. provides a complete range of CATERPILLAR Material-Handling equipment for manufacturing, industrial and commercial applications that require total Material-Handling solutions.

Product Support

MANTRAC Uganda Ltd. supplies genuine CATERPILLAR parts at competitive prices, protecting customers against unexpected downtime. We also provide original CAT lubricants, which reduce maintenance and ensure that components last longer. All CAT spare parts purchased from MANTRAC Uganda are guaranteed, genuine and carry the original caterpillar warranty.

MANTRAC Uganda Ltd.'s expertise and technical resources are available throughout the entire lifetime of every product we supply. We also offer a wide range of Customer Value Agreements (CVAs), ensuring the comprehensive maintenance and repair of your equipment.

Tilenga Project

In 2021, MANTRAC Uganda Limited provided all the machines required for bush clearing and grading the Drilling Support Base area within TILENGA region. This was part of the preliminary activities required for all site construction activities.

In February 2022, MANTRAC won a contract for the Supply, installation & maintenance of prime rated diesel engine generators (9MW) at Biliisa. These Generators were supplied to multiple LOTS within the Drilling Support Base, Bugungu, Buliisa Camp and Tangi Construction Support Base.

In April 2023, MANTRAC won a rental contract to Generate more than IOMW of Power once again at Buliisa. This power was meant for the temporary camp facility.

Equipment Supplied in Tilenga

Drilling Support Base,

 4 x 1000KVA, 6 x 500KVA, 4 x 350KVA, 4 x 200KVA, 4 x 50KVA

Temporary Camp Facility

 2 X 2000KVA, 1 x 1275KVA. 12 x 1000KVA, 19 x 500KVA

Tangi Construction Support Base

 650KVA, 4x400KVA, 2x250KVA, 10x15KVA . Ix100kva. 2x200KVA

Some of the companies we have dealt with include TotalEnergies Ep Uganda B.V, McDERMOTT, Essar Infrastructure Uganda Ltd, ZPEB Uganda Company Ltd, Civtec Africa Limited, Mota-Engil, Cementers Uganda, COSL, Schlumberger, Sarens, Daging Oil, Excel Construction Ltd, CPP

Services offered in Tilenga

- · Bush clearing, Excavation, grading, land scaping.
- Power Generation
- Service and maintenance related works

mantracuganda.com

Energy Security:

Tilenga is not just an economic catalyst; it is a critical component of Uganda's energy strategy. By harnessing Uganda's oil reserves, the project will substantially reduce the country's reliance on imported energy, ensuring a more stable and secure energy supply. "Energy security is paramount for Uganda's future, and Tilenga is at the heart of this strategy. By developing our own resources, we are paving the way for industrial growth and energy independence," stated Ruth Nankabirwa, Uganda's Minister of Energy and Mineral Development.

Investment Opportunities:

For investors, the Tilenga Project represents a beacon of stability and potential. The project promises substantial returns, buoyed by Uganda's relatively low

production costs and favorable regulatory environment. "Investing in Tilenga means investing in a project with strong fundamentals and long-term growth prospects. It's an attractive proposition for any strategic investor," noted Jean-Pierre Sbraire, CFO of Total Energies. The long-term growth prospects are robust, supported by ongoing infrastructure developments and regional energy demands. Strategic investments in Tilenga are poised to yield significant dividends, making it a compelling addition to any diversified portfolio.

Innovation and Technology

Advanced Technologies: At the heart of the Tilenga Project lies a commitment to technological excellence. Total Energies is deploying cutting-edge technologies in every phase of the project, from exploration and extraction to processing.

14 [JUNE 2024] BUSINESS EXCELLENCE



Innovations in drilling techniques ensure more efficient resource utilization while minimizing environmental impact. "We are leveraging the latest technologies to optimize production and ensure environmental sustainability. Our advanced drilling techniques and digital operations are setting new benchmarks in the industry," explained Arnaud Breuillac, President of Exploration & Production at Total Energies.

R&D Initiatives: The project is also a hub for research and development. Total Energies is pioneering new methods to reduce the environmental footprint of oil extraction, focusing on cleaner technologies and renewable energy integration. "Our R&D initiatives are crucial for developing

innovative solutions that reduce our environmental impact and enhance efficiency. We are committed to driving the energy transition forward," said Marie-Noëlle Semeria, Chief Technology Officer at Total Energies.

Socio-Economic and Environment Impact

President of Exploration & Production at Total Energies.

Total Energies.

The advances of the Tilenga project are, undoubtedly, having major impacts and reaching all aspects of Ugandan life: economic, community and environment.

While TotalEnergies prioritizes low-cost and low-emission projects, the Tilenga facilities will incorporate measures to limit greenhouse gas emissions. These include Liquefied Petroleum Gas (LPG) extraction for regional markets as a substitute for burning biomass, solarization of the EACOP pipeline and utilization of associated gas for heating and power requirements.

The projects are also contributing to enhancing the lives of communities through livelihood improvement projects that target women, empowering them with skills in agriculture and different vocations. This is part of the peoplecentred approach.

Close to 14,000 acres of land have been acquired, a process which has impacted about 10,000 project affected persons (PAPs). With the Tilenga, Kingfisher, EACOP, and Kabalega Industrial Park projects up and running, households have been compensated or resettled, jobs created, and services extended closer to those in the Albertine region.

Women and young girls have also been empowered through scholarships at

different stages of education, from primary school to tertiary education. Some of the beneficiaries are already employed in the sector in various professions from petroleum engineering and welding to accounting and law. Women have also received skills in tailoring, hospitality, and agriculture to ensure that they can support themselves and their families economically.

So far, 137 small and medium-term enterprises have been led by women and youth who have received training in identifying and participating in business opportunities in the oil and gas sector since 2021. Four hundred enterprises have been trained in total.

Around 450 women have been trained in financial literacy, and business development, vocational skills, and crop development since 2021. And 2,464 women have received agricultural support,



Around 450 women have been trained in financial literacy, and business development, vocational skills, and crop development since 2021

vocational skills, and food supplies under collaboration process aimed at capitalizing the EACOP project.

The completion of Tilenga (and EACOP) will require the implementation of a land acquisition program covering some 6,400 hectares. This means relocating 775 primary residences, and will affect a total of 18.800 stakeholders, landowners and land users.

From the initial design phase of these projects, special attention was paid to information, consultation and consensusbuilding with all stakeholders. Over 70.000 people were consulted. Discussions have been initiated with several NGOs. laying the foundation for a sustainable

on their expertise and driving continuous improvement.

TotalEnergies decided to restrict the footprint of the Tilenga project in Uganda's Murchison Falls Park. Development will be limited to less than 1% of park land, and thanks to strict preventive and reduction measures built into the design of the project, the Tilenga facilities inside the park will cover less than 0.03% of the surface area during the operating phase.

Scouting for the EACOP route began in 2018, and after two years of consultation and surveying, it was decided the pipeline would arc for 296 km southeast through



Uganda from the collection and pumping station at Kabaale to the port of Tanga. The route was chosen to minimize disruption to the local population and the environment.

In Uganda the number of people affected by the projects is 3,660 and in Tanzania, 9,513. To date 90 per cent in Uganda have accepted compensation packages, including 177 who have opted for new homes resettling them away from the pipeline.

Some 105 fully constructed houses by TotalEnergies Uganda to the Tilenga Project Affected Persons have been completed. The houses vary from two to four bedrooms and are fitted with a kitchen. VIP latrine. a 5000-litre rainwater harvest tank, and solar lighting.

Biodiversity Program

TotalEnergies has also launched the Tilenga Biodiversity Program, an initiative aimed at protecting and conserving biodiversity in and around the Tilenga project area. The Biodiversity Action Plan is hinged on four key pillars.

 Reducing human pressures and strengthening the ecological resilience





of the Murchison Falls protected area through enhanced park protection and community-based management.

- · Implementing conservation and restoration measures for forests and their connectivity targeting protection of 10,000 hectares of natural forest threatened with deforestation and restoration of 1.000 hectares of tropical forest.
- · Protecting and maintaining the connectivity of habitats in the savannah and in the proximity of the Bugungu Natural Reserve by addressing threats within and around the Reserve and developing schemes to support diversification of livelihoods and reduce dependency on Bugungu Natural Reserve
- · Working with the host community to

[JUNE 2024] BUSINESS EXCELLENCE BUSINESS EXCELLENCE [JUNE 2024] 19



manage and restore wetlands along the southern bank of Lake Albert through community-based management initiatives

Philippe Groueix, General Manager, TotalEnergies EP Uganda, said: "We are mindful of the sensitive context within which we are undertaking our activities. The program will ensure a sustainable approach in working with community towards protecting and conserving the ecologically rich area in and around the Murchison Falls Conservation Area."

TotalEnergies has also embarked on community-based forest conservation and restoration initiatives such as "Grow A Tree Everywhere" (GATE) which is aimed at growing 100,000 trees in the Tilenga project areas.

Strategic Partnerships and Collaboration

The success of the Tilenga Project is built on strong partnerships. Total Energies collaborates closely with the Ugandan government, local businesses, and international organizations to ensure the project's objectives are met efficiently and sustainably. These partnerships enhance resource sharing, risk management, and project execution. "Our partnerships with the Ugandan government and local stakeholders are key to the success of Tilenga. Together, we are driving forward a project that benefits everyone involved," noted Nicolas Terraz, President of Exploration & Production at Total Energies.





TotalEnergies chose McDermott and Sinopec International Petroleum Service Corp. to carry out work on the Tilenga project. McDermott said the future contract was valued at around \$2 billion.

McDermott and Sinopec will carry out engineering, procurement, construction and commissioning (EPCC) work on the project, which could eventually create up to 20,000 direct and indirect jobs.

McDermott will work on the project from its offices in London, and Sinopec from Yangzhou. The two will shift into Uganda for construction.

McDermott subcontracted GCC Services, a remote site services company, for camp services, Essar Infrastructure Uganda, an infrastructure development company, for structural, mechanical and piping installation, and Mota-Engil Uganda, a

subsidiary of Mota Engil, for general civil work of the Tilenga Project.

Schlumberger was awarded a contract for providing drilling, completions, and production services for the project. The scope of the contract included the delivery of directional drilling services, upper and lower completions, artificial lift solutions, and wellheads for the field.

Additionally, there were also contracts awarded to Mata Engil in the same project for the "Site preparation for Enabling Infrastructure - Industrial Area" phase, worth \$37.9 million and for the "Upstream Facilities - General Civil Works" phase, worth \$60.3 million.

The CNOOC Uganda Limited LR8001 rig that can drill up-to 8000 metres, and the SINOPEC 1501 (Rig 1), SINOPEC 1502 (Rig 2) & SINOPEC 1503 (Rig 3) will be used



in the Tilenga project. East African Piling Company was awarded the contract of installing conductor pipes for the well pads on the project. So far, over 130 conductor pipes have been installed.

Expro Group, has announced a five-year Well Intervention and Integrity contract with TotalEnergies EP Uganda for the multi-well Tilenga project.

Local Content Collaboration and Development:

The Total Energies Tilenga Project local content engaement is guided by the "National Content Strategy". This strategy aims to maximize the use of Ugandan manpower, goods, and services, while fostering capacity building, knowledge transfer, and technological advancement. Through an integrated approach spanning the project's lifecycle—from development

to production—we are committed to creating and retaining shared value within Uganda, working collaboratively with stakeholders, partners, and contractors to realize this vision.

Central to the project's efforts is a robust focus on training and skills development. Total Energies has implemented comprehensive training programs



designed to equip Ugandans with the necessary skills for high-quality jobs within the project. "We are dedicated to enhancing local content by investing in the development of local talent and businesses. This approach not only strengthens our operations but also supports the local economy," explained Henri-Max Ndong-Nzue, Senior Vice President Africa, Exploration & Production at Total Energies. This commitment ensures that the benefits of the Tilenga Project extend far beyond its immediate economic impact, fostering sustainable growth and capacity building across the nation.

Our local sourcing strategy is a cornerstone of the Tilenga Project, promoting the growth of Ugandan enterprises and creating a robust supply

chain. Key partners include Threeways Shipping Services (Group) Ltd for haulage and transportation, ULTRAFOG for construction, and Inspecta Africa for supplying surface wellheads, trees, valves, and actuators. Other vital collaborators include Epsilon Uganda Limited, MANTRAC Uganda Ltd-the exclusive authorized dealer for Caterpillar products in Uganda-Zpeb Uganda Co., CIVTEC Africa, and WQS Recruitment Services. These partnerships not only enhance the project's efficiency but also significantly contribute to the local economy by providing jobs and business opportunities, thereby embedding the Tilenga Project as a cornerstone of Uganda's long-term economic and industrial development.



[JUNE 2024] BUSINESS EXCELLENCE BUSINESS EXCELLENCE [JUNE 2024] 23



Risk Management and Governance Robust Governance Framework:

Governance is a pillar of the Tilenga Project. Total Energies has established a robust framework to ensure compliance with international standards and best practices. This framework includes transparent reporting, stringent oversight, and continuous audits to maintain high levels of accountability and integrity. "Strong governance is essential to our operations. We adhere to the highest standards to ensure transparency and accountability in all our activities," stated Guy Maurice, Senior Vice President of HSE at Total Energies.

Risk Mitigation Strategies:

Comprehensive risk mitigation strategies

are in place to address operational, financial, and geopolitical risks. These include advanced safety protocols, insurance schemes, and contingency planning to safeguard the project and its stakeholders against potential disruptions. "We have implemented robust risk management strategies to ensure the safety and security of our operations and stakeholders. Our proactive approach to risk mitigation is a key element of our success," said Philippe Sauquet, President of Gas, Renewables & Power at Total Energies.

Long-term Vision and Impact Future Growth:

The Tilenga Project is not just a shortterm venture but a long-term commitment to Uganda's energy future. Plans for expansion include further investments in infrastructure, increased production Tilenga is a strategic investment for the future. Our plans for expansion and innovation will continue to drive growth and development for decades to come," commented Laurent Vivier, Senior Vice President Africa, Exploration & Production at Total Energies.



capacity, and the integration of renewable energy sources. This long-term vision ensures sustained growth and development. "Tilenga is a strategic investment for the future. Our plans for expansion and innovation will continue to drive growth and development for decades to come," commented Laurent Vivier, Senior Vice President Africa, Exploration & Production at Total Energies.

Regional Integration: The Tilenga Project is integral to the broader regional initiatives of the East African Community (EAC). By contributing to the region's energy grid, the project supports the EAC's goals of economic integration and energy cooperation. This regional synergy promises to unlock new markets and drive

collective prosperity. "Tilenga is not just about Uganda; it's about the entire East African region. Our project is a key player in regional energy integration, promoting economic cooperation and development," emphasized Nicolas Terraz, President of Exploration & Production at Total Energies.

Looking ahead

The Tilenga and EACOP projects will undoubtedly prove to be exceptional turning points for Uganda for generations to come. While oil and gas reserves will bring economic positivity, the world is also watching to ensure that the ecosystems around Lake Albert remain.

TOTALENERGIES EP UGANDA

① +256 (0) 312426000☑ ep.tepuinfo@totalenergies.comwww.totalenergies.com

[JUNE 2024] BUSINESS EXCELLENCE BUSINESS EXCELLENCE [JUNE 2024] 25



TOTALENERGIES EP UGANDA (Tilenga Project)

Course View Towers, Plot 21 Yusuf Lule Road P.O. Box 34867 Kampala, Uganda

① +256 (0) 312426000

□ ep.tepuinfo@totalenergies.com
 www.totalenergies.com

