Stark Energy LIMITED

Stark Energy LIMITED

ISO Certified

- ✓ **ISO 9001:2015** (Quality)
- ✓ **ISO 14001:2015** (Environment)
- ✓ **ISO 45001:2018** (Occupational Health & Safety)

Energy Solutions for Business Growth

www.starkenergy.com

Innovative Engineering Company

Stark Energy Limited is an ISO 9001 (Quality), ISO 14001 (Environment), and ISO 45001 (Occupational Health & Safety) certified innovative Ghanaian engineering company focused on providing advanced tailored-made engineering solutions for the downstream, midstream and upstream oil and gas companies in Ghana and neighbouring countries. The creation of Stark Energy stems from the demand for professional business and engineering services in the area of technical design, Asset Integrity, HSEQ (Health, Safety, Environment and Quality) as well as advanced solutions in the oil and gas industry.
Also, Ghanaian-owned and foreign industries are constantly seeking assistance to meet the permitting requirement of most Regulatory bodies and Stark Energy strives to aid them meet the criteria for the issuance of such Permits and Licenses. Stark Energy is licensed to provide Asset Integrity services in Ghana's upstream oil & gas sector.

Stark Energy is the country representative of MANNTEK–Sweden,ELAFLEX–Germany, PARLYM–France,DEC-OGECO–Belgium, MARIFLEX–Netherlands, HCP – UAE, HOERBIGER-Austria, EM&I-UK, THE DICKERMAN GROUP OF COMPANIES – UK, SPS Technology – UK/Singapore , TRIBOLOGIK LABORATOIRES - USA/Canada and Flowserve-USA in Ghana.

Stark Energy and OCS are in joint venture agreement to provide FPSO Operations & Maintenance (0&M) Services in Ghana.
OCS combines the experience of BW Offshore and The Planet Group in providing safer, scalable, sustainable FPSO Operations & Maintenance and Crewing services.

For the Upstream & Midstream Petroleum Sector and Renewable Energy Industries, in partnership with EM&I, Stark Energy provides Asset Integrity Management, Inspection, and specialised Repair & Maintenance services.

✓ **We provide the following services for our clients:**

Asset Integrity Management of Floating Production Storage and Offloading (FPSO), Mobile Offshore Drilling Units (MODUs), Floating Storage Regasification Units (FSRUs), Floating Liquefied Natural Gas (FLNG) and Onshore Petroleum Assets.

Technical Consultancy Services for downstream

- ✓ Petroleum Processing Plants.
- ✓ Business Plan.
- ✓ Petroleum Licenses and Permit Documentation.
- ✓ Petroleum Plant Designs.
- ✓ Engineering software services including: DMS,PDS,SP3D, AUTOCAD, Spoolgen etc.
- ✓ Process Simulation for both 2D drafting and 3D modelling for projects.

- ✓ Health, Safety & Environment.
- ✓ Provision of PFDs, UFDs and P&IDs for Petroleum Processing Plants.
- ✓ Conceptual Design, Basic Engineering Design, Front End Engineering Design and Detailed Engineering Design.
- ✓ Energy Management.
- ✓ HAZOP (Hazard Operability Studies).
- ✓ Engineering Drawing for Petroleum Processing Plants.
- ✓ Feasibility Studies.
- ✓ Engineering, Procurement, Construction & Installation in partnership with PARLYM and DEC.
- ✓ Mobile Equipment for Hydrotesting of Petroleum Hoses.
- ✓ Assembly, Repair, Testing & Certification of Petroleum Hoses.
- ✓ Ship–to–ship transfer.
- ✓ Provison of aviation fuel handling end -to - end technical solutions.
- ✓ Provision of Aviation fuel handling trainings.
- ✓ Fabrication Maintenance for Offshore Assets.
- ✓ Fluid Analysis for Machinery Diagnostics.
- ✓ Oil & Gas Asset Verification and Valuation.
- ✓ Sandwich Plate System Installation.
- ✓ Provision of FPSO Operations & Maintenance (O&M) Services

About Us

We provide bespoke engineering solutions for our clients through a systematic approach and thorough examination of our client's operations, facilities, and technologies. Based on our extensive knowledge coupled with skilled expertise in process engineering, energy management, health and safety, oil and gas services among others, we deliver the optimal and innovative solutions to ensure that the best practices are incorporated into their operations.

Our team of experts is well-versed in the provision of technical services for oil and gas processing plants; thus, we employ a unique approach in the delivery of engineering solutions that emphasizes our ability to expressly and efficiently meet the needs of our clients.

Vision

To be the Ghanaian and West African leader in delivering tailor-made advanced engineering solutions by nurturing talented, dedicated, and committed teams that work with openness and integrity.

Mission

Stark Energy delivers tailor-made advanced engineering solutions for the oil & gas and renewable energy industries.

Stark Energy LIMITED

Efficient Convenient & Reliable

We deliver to you the convenience that provides speed and efficiency in your productivity

Stark Energy Services

- Consultation
- Health, Safety & Environment
- General Contractors (EPC)
- Conceptual Designs
- Engineering software services including: PDMS,PDS,SP3D, AUTOCAD, Spoolgen etc.
- Process Simulation for both 2D drafting and 3D modelling for projects
- Asset Integrity Management
- Petroleum Plant Design
- Feasibility Studies
- Energy Management
- HAZOP and HAZID Studies
- Business Plan

Stark Energy Services

- Assembly of Hoses and Hydrotest
- Petroleum Licenses & Permit Documentation
- Engineering Drawing
- Servicing of Valves
- Ship–to–ship transfer
- Aviation fuel handling end -to - end technical solutions
- Aviation fuel handling trainings
- Oil & Gas Asset Verification & Valuation
- Fabrication Maintenance for Offshore Assets
- Fluid Analysis for Machinery Diagnostics
- Sandwich Plate System (SPS) Installation
- Provision of FPSO Operations & Maintenance (O&M) services

Engineering and Technical Consultancy Services

Stark Energy provides its clients with a close support service, choice of solutions and consultancy services in the following areas:

1. Hazard and Operability (HAZOP) Studies
2. Hazard Identification (HAZID) Studies
3. Oil and Gas Incident Prevention Management
4. Systems Thinking in Organizations
5. Asset Integrity Management
6. Systems Architecture
7. OPEX Reduction
8. Consultation Services on Selection and Provision of Power Generators
9. Operations and Maintenance Policy for Optimum QoS and asset life span
10. Aviation technical solutions
11. Marine operations
12. Technical Support with Offshore Engineering services such as Design and engineering of offshore platforms, jackets and top-sides, Design, engineering and analysis of skids and modular structures , Stress and fatigue analysis of structures using finite element analysis using softwares like PDMS, STAAD-Pro, SESAM, SACS, ANSYS, MATHCAD.
13. Technical Support with Provision of Engineering software services including: PDMS,PDS,SP3D, AUTOCAD, Microstation, CEASAR-II, Spoolgen etc.

Health &Safety

The ongoing industrialization of the Ghanaian economy is calling for a renewed focus on health and safety issues across various sectors of the Ghanaian economy. This rate of industrialization has called for a renewed request for business operators to take a critical look at health and safety issues across the organizational spectrum. Health and Safety, which hitherto was not such a critical subject in the Ghanaian economy, is now assuming an imperative role in Ghana. Most Ghanaian industries do not have health, safety, and environmental officers and therefore, do not adhere to safety standards. This has resulted in an increased incidence of accidents and personal injuries at the workplace.

Stark Energy Limited has extensive experience in the development of HSE management systems, safety management policies and programs, coordinating training programs, incident investigation, auditing of management systems, and Risk assessment in the power and oil & gas sectors. In addition to this, Stark Energy helps our clients develop the following;

1. HSE Management Systems
2. HSE Policy Statement
3. Site Rules
4. Emergency Preparedness Plan
5. Emergency Evacuation Plan
6. Drug and Alcohol Policy
7. Personal Protective Equipment
8. Incident Investigation and Reporting
9. Oil and Gas Incident Prevention Management
10. Environmental and Waste Management Plan
11. Environmental Aspects Register
12. Environmental Care Policy
13. Safety Signs
14. Fire Prevention Plan
15. Carriage of Hazardous Goods
16. Risk Assessment Plan
17. First Aid Practice
18. Contractor Management
19. Visitors Guide

Stark Energy Limited is well positioned to assist business start-up and foreign companies with various health and safety policy options that will guarantee a safe working environment.

Energy Audit

The utilization of energy is a key issue of interest in all industrial sectors because of its impact on the cost of production. At Stark Energy, we carry out audits on industries and facilities to ascertain the performance levels of installed equipment as well as their overall processes and respond more effectively to any identified weaknesses.

We help customers to increase the efficiency of their equipment and processes by including energy-efficient specifications such as heat recovery options among others and identifying losses and providing solutions to minimize such losses.

Audits carried out by Stark Energy are comprehensive and help the customer/client to obtain information on their systems for the improvement of their processes. Our audits provide in-depth knowledge of energy consumption in industries, facilities, and buildings.

In addition to this, we help our clients in the development of the following:

1. Defined scope of audit
2. Gather Preliminary Data
3. Site inspecion and Data Collection
4. Reporting
5. Monitoring and Review

Pre-Audit Stage

Energy Audit Stage

Post-Audit Stage

Energy Management

Fluctuating fuel costs and the fuel market have undermined the efficient use of energy in most industries. At Stark Energy, we come up with energy management systems to assist businesses with the efficient use of energy. We also help businesses to maximize their profit margins through the judicious use of energy by developing and sustaining effective monitoring, reporting, and management strategies for the efficient use of energy.

Energy Management Systems

Maximize Profit margins

Strategize for Business Growth

Business Plans, Feasibility Studies and Conceptual Design

We provide services that comprise business plans, feasibility studies and give definitive engineering direction to our clients on their intended projects. When it comes to feasibility studies, we study and evaluate the potential for success of every project and choose the best path to be followed. We can identify the types of risks facing each project by carrying out a concise risk assessment, also taking into consideration viable options for success as well as identifying project alternatives.

Our vast experience in the preparation of business plans, feasibility studies, and award-winning proposals makes us the best company to deal with.

We offer conceptual engineering services for the generation of technical solutions. Under this, we provide end-to-end engineering and design services ranging from re-design to technical documentation such as:

1. Process Flow Diagrams (PFD)
2. Piping and Instrumentation Drawings (P&ID)
3. Utilities Flow Diagrams (UFD)
4. Process Descriptions
5. Standard Operating Procedures (SOP)
6. Conceptual Design, Basic Engineering Design (BED), Front End Engineering Design (FEED) and Detailed Engineering Design (DED) of Petroleum facilities according to ASME, ANSI, API, ASTM, NFPA and BS_EN Standards
7. Cost Estimation
8. Scheduling

Engineering, Procurement, Construction and Installation in partnership with PARLYM and DEC

We undertake contracts in the engineering, procurement and construction of systems as well as installations for industries, commercial based centers, SME. These include:

- Selection and Installation of Energy efficient Heating System
- Selection and Provision of Cooling Systems
- Installation of Pumps, Compressors, turbines, etc.
- Insulation works
- Selection and provision Pumps and Motors

Energy Based Products and Services for Commercial business Centers, SME, Real Estates, Small Hotels, Medium Hospitals, Fast foods, Small Shopping Malls etc.

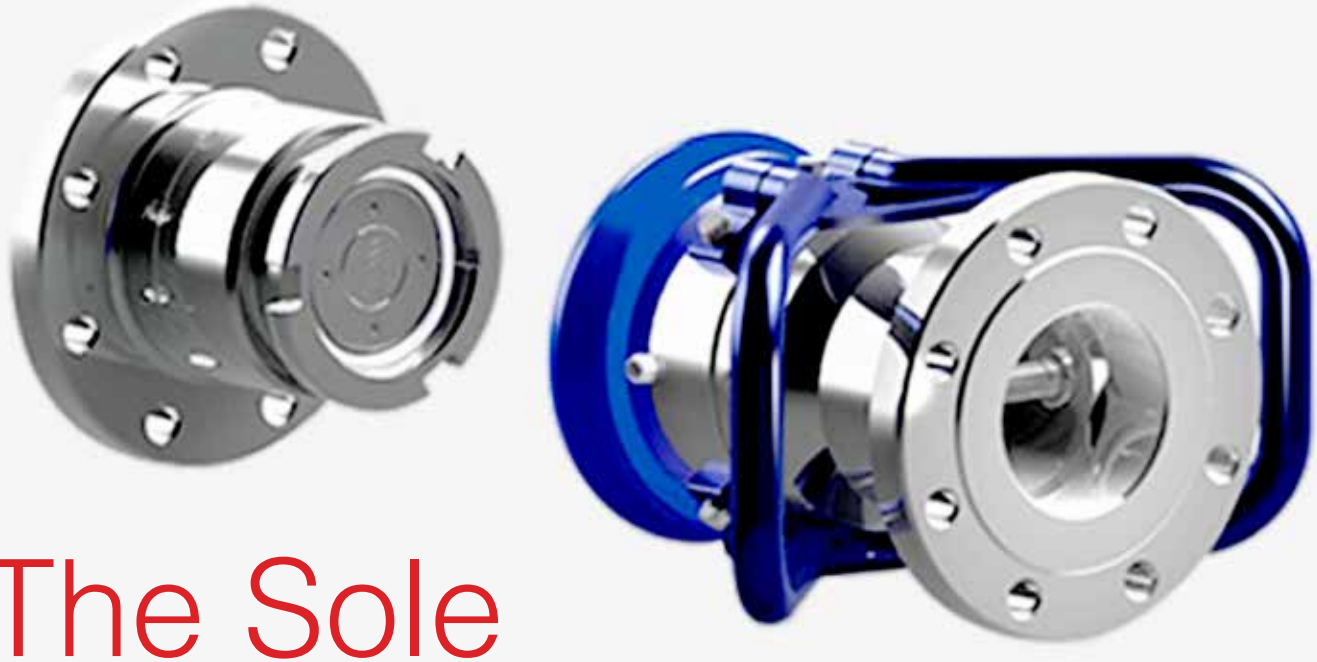
- Provision of Auto Change Over and Critical Load back up Device
- Provision and Selection of UPS systems
- Selection and Installation of Energy Efficient Refrigeration & Air conditioners (Central & Split systems)
- Provision of Installation Standards and appliance selection Services (Mechanical & Electrical)
- Provision & Selection of Voltage stabilizers

Engineering, Procurement, Construction, Installation & Commissioning of Petroleum Facilities

- Preparation of Process Flow Diagrams (PFD)
- Preparation of Piping and Instrumentation Drawings (P&ID)
- Preparation of Utilities Flow Diagrams (UFD)
- Preparation of Process Descriptions
- Preparation of Standard Operating Procedures (SOP)
- Preparation of Conceptual Design, Basic Engineering Design (BED), Front End Engineering Design (FEED) and Detailed Engineering Design (DED) of Petroleum facilities
- Petroleum facilities Construction & Commissioning Construction of AGO, PMS, LPG & base oil storage tank farms.
- Provision of Fuel Regulators (Control Devices) for LPG and Natural gas

Stark Energy Products MannTek, ELAFLEX Mariflex & Flowserve

All your needs concerning MannTek, ELAFLEX, and Mariflex Products



The Sole Representative and Distributor

of MannTek Products in Ghana and neighbouring countries

Stark Energy LIMITED

MannTek

MannTek The World's widest Range of Dry Disconnect Couplings

1 Dry Disconnect Couplings

Dry Disconnect Couplings are the given choice for handling any liquid, chemicals, gas etc.

2 Dry Aviation Couplings

Dry Aviation Couplings are designed for use in aviation and military refuelling systems with a maximum working pressure of 10 bar (150 psi).

3 Dry Gas Couplings

Dry Disconnect Couplings are the given choice for handling any liquid, chemicals, gas etc.

4 Safety Break-away Couplings

Safety Break-away couplings are used to prevent pull away accidents, protect terminal and loading/unloading equipment and eliminated unwanted product release.

5 Dry Evotek Couplings

DEC – Dry Evotek Couplings stands for another generation of dry disconnect couplings, that is specially made for use in the chemical industry.

6 Full Flow Ball Valves

Full flow ball valves and 2-way ball valves are specially designed for handling different types of fuels such as diesel, gasoline, jet fuel etc.

SCAN for more about MannTek Products

Completed Deliveries

1 Supplied Dry Disconnect Couplings to GTS Semi-Trailers for use at the Accra International Airport

2 Dry Gas Couplings installed at all LPG Bulk Distribution Companies (Quantum, Matrix and TFC) in Ghana

3 MannTek Dry Gas Couplings in use at Matrix LPG loading terminal in Tema

4 Dry Aviation Coupling to Puma Energy for Aircraft Aviation Refueling at the Accra International Airport

The Sole Representative and Distributor

of ELAFLEX Products in Ghana and neighbouring countries

Stark Energy LIMITED

ELAFLEX

Safety in your hand.

1 Hose Fittings

Our main strength lies in fittings for petroleum-based products and chemicals, main areas of use are in petrol stations, rail and road tankers.

2 Petrol + Chemical Hoses

With hoses from ELAFLEX you simply make the right choice. As they are used for dangerous goods we acknowledge responsibility for our products.

3 Nozzles + Spare Parts

Due to its modular system all major parts can be replaced. ZVA are suitable for every petrol dispenser, every hose and every vehicle filler neck. Additional retrofitting in the field is trouble free.

4 Rubber Expansion Joints

ERV FOR FLEXIBLE CONNECTIONS. Rubber Expansion Joints (compensators) are used as flexible connectors within pipe systems

5 Tank + Pipe Fittings

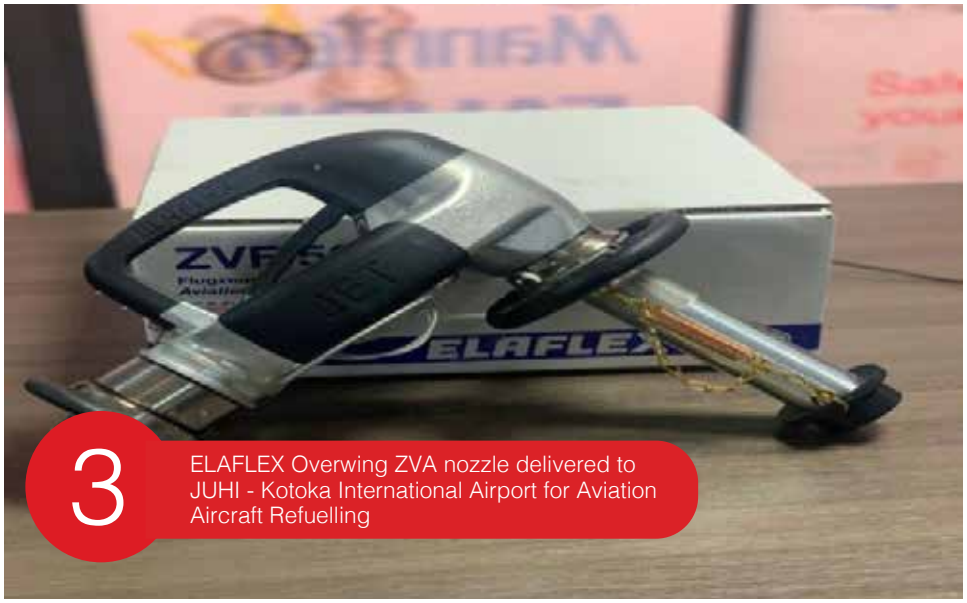
Can be mounted to hose assemblies, pipe systems, tanks and road or rail tankers. Additionally we offer a large range of adapters, caps and plugs, swivels, flanges with thread, welding flanges, sight glasses, and spare seals.

SCAN for more about ELAFLEX Products

Completed Deliveries

1 Distributed ELAFLEX LPG hoses to all LPG bulk distribution companies (Quantum, Matrix, TFC) for use at their LPG loading terminal in Ghana

2 Delivered ELAFLEX Composite hoses to Tema Fuel Company to be used for inter-transfer of products from one tank to another



3 ELAFLEX Overwing ZVA nozzle delivered to JUHI - Kotoka International Airport for Aviation Aircraft Refuelling

4 Supplied LPG hoses to Tema Fuel Company to be used at their LPG loading gantry

Completed Deliveries

5 ELAFLEX hoses delivered to IBISTEK for use at Takoradi Oil Jetty

6 Constant supply of ELAFLEX ZVA Nozzles and Safety Breakways to major service companies like Universal Engineering, Rich Morgan, and GPS Tokheim for use at TOTAL, SHELL, GOIL and other OMCs Fuel Dispensing Stations

7 ELAFLEX LPG hoses installed at Quantum LPG Terminal – Atuabo. The remaining LPG Bulk Distribution Depots i.e. Tema Fuel Company, Blue Ocean and Matrix also have ELAFLEX LPG hoses installed for LPG Loading

8 Installed ELAFLEX CAMLOCK Assembly on selected Bulk Road Vehicles for TOTAL Ghana for specialized operations

Trusted Source

of Mariflex Marine Products and Ship-to-ship transfer services in Ghana

Stark Energy LIMITED

Mariflex

Authorized Licensed FLOWSERVE Reseller in Ghana

Stark Energy LIMITED FLOWSERVE

FLOWSERVE

1 Pumps

2 Actuation And Instrumentation

3 Seals

4 Energy Recovery Devices

5 Valves

6 Decoking System

PARLYM
ENERGIES & SYNERGIES

More than 1,000 employees, experts in engineering, consulting and technical assistance.

In order to support the energy transition by bringing together the expertise and convictions of its employees, Parlym carries out energy infrastructure projects for its clients in the nuclear, oil & gas and renewable energy sectors.

Country Representative

OF PARLYM

Stark Energy

PARLYM
ENERGIES & SYNERGIES

Completed EPC Projects

1 EPC, in the form of a supplier credit, for the construction of the multi-products hydrocarbon storage plant of 24,000m^3

2 EPC, in the form of a supplier credit, for the rehabilitation and extension of the hydrocarbon storage plant of 60,000m^3 in Yamoussoukro.

3 EPC for the construction of 4 LPG storage and bottling plants with two spheres of 2,200T each, in Mongla / Dhaka / Bogra / Chittagong. Construction of a LPG river barge of 300T.

4 Conducted Front End Engineering Design and Detailed Engineering for the EPCI of IBISTEK – PSB's 50,000MT AGO 30,000MT PMS and 10,000MT LPG tank farm and automated loading gantry Oil Terminal in Takoradi.

Country Representative

of Design Engineeing & Consulting

Stark Energy LIMITED

DEC·OGECO DESIGN · ENGINE

Completed EPC Projects

1 PETROMAX LPG, Mongla, Bangladesh

1 LPG sphere 3,000 m³ & 2 LPG spheres 4,000 m³

2 EUROGAZ LPG – LPG import terminal & bottling plant, Chittagong.

30,000 T/y 2 LPG spheres of 3,500 m³

3 EUROGAZ LPG – LPG import terminal & bottling plant, Chittagong.

1 LPG storage sphere of 3,000m³ & 2 LPG bullet tanks of 120m³ each, Cylinder bottling facilities, Truck loading post, Fire-fighting system & SCADA system.

4 Sahara Group's 6,000MT LPG Storage Facility Technical Services Consultants to Sahara Group-Ashrami Synergy Ltd's 6,000 MT LPG Storage Facility and Associated Loading Gantry Project

Country Representative

Of EM&I

Stark Energy LIMITED

EM&I Delivering Integrity

Completed Projects

TULLOW's JUBILEE FPSO

1

- Provision of LIMPET Sea Chests Isolations.
- Remotely Operated Vehicle (ROV) Special survey of the hull and its appendages (General Visual Inspection (GVI)/Close Visual Inspection (CVI) and Angle Measurements).
- Cathodic protection Surveys.
- Isolation and monitoring of underwater penetrations and discharge lines.

ENSCO 5004 FPSO – ENSCO/VALARIS

2

- ODIN Alternative UWILD
- ODIN Valve Isolation on Valve Repair
- NoMan Services
- Topsides Structural Inspections
- Installation of Inspection Hatches
- ODIN (Repair of jetting pipe lines)
- ODIN Inspection
- ODIN UWILD and SPS Survey

3

KIZOMBA FPSO – EXXONMOBIL

- Asset integrity Management Services
- Inspection Management
- Engineering Support
- Condition Monitoring
- NDE Services - UT, MPL, LPI, Digital/Real Time Radiography
- Population of Meridium database for inspection and anomaly management
- Use of SAP for Planned Maintenance inspections and Meridium Interface
- Provision of Fabric Maintenance Services
- Cathodic Protection Surveys
- Failure Analysis
- Fitness for Sevice Assesments
- Rapid detection of CUI
- Caisson Cleaning and Thickness Measurement
- ODDIN UWILD

Completed Projects

SOYO LNG PLANT – ANGOLA

4

- Provision of Onshore integrity Management Services
- Development of Process Pressure Equipment Risk Based Inspection system
- Risk Based Assesment of Pressure Systems
- Corrosion Risk Assesment and Criticality Analysis
- Set-up, Population and Periodic Reviews of Integrity Database
- Development of Baseline Strategy
- Site Inspection / NDT Services
- Failure Investigation

5

BLEO HOLM FPSO – BLUE WATER ENERGY SERVICES

- Provision of Integrity Management for the Hull and Topsides
- Inspection and Survey Services and Structural Repairs
- NDE Services - UT,MPL,LPI,EC,TOFD,Weld Root, Class Surveys, Mass/ CYCLOPS CCTV, MOLE
- Other Services - Strutural Steel Repairs, Piping Repairs, Coating Repairs, Corrosion Protection, IGLOO Hotwork Habitats, TOPCAT Staging

6

ARMADA CLAIRE FPSO – BUMI ARMADA

- Provision of Asset integrity Services
- Inspection and Survey Services
- NDE Services - UT,MPI,LPI,EC, Class Surveys
- Other Services - Structural Steel Repairs,IGLOO Hotwork Habitats
- Fitting ODDIN Access Ports
- Provision of ODDIN Valve inspection
- Inspection of Sea Chest Valve

Completed Projects

7

Diverless Underwater Inspection and Integrity program for Hull and Appendages using a Remotely Operated Vehicle (ROV). Close visual inspection on MODEC's TEN FPSO.

8

Underwater Inspection and Integrity program forTullow's CALM Buoy mooring chains using Remotely Operated Vehicle (ROV). General Visual Inspection (GVI) and Closed VisualInspection (CVI) of the mooring chains. Conducted mooring chain measurement.

Country Representative

of Hansaconsult Projects in Ghana

Stark Energy LIMITED

HCP Hansaconsult Projects

Completed Projects

1 Participants engaged during DownstreamTraining Workshop

2 Stark Energy and HCP organizes a training workshop on JIG, EI & IATA Standards for Aviation Fuel Handling for TotalEnergies, Shell/Vivo, Puma, Sahara, Goil, Woodfields, and Tema Oil Refinery (TOR) & Sentuo Oil Refinery (SORL)

Country Representative

of Tribologik laboratoires in Ghana

Stark Energy LIMITED

TRIBOLOGIK® LABORATOIRES

Authorized HOERBIGER Distributor in Ghana

Stark Energy LIMITED

HOERBIGER

Completed Projects

Refurbishment of compressor valves on MODEC's TEN FPSO

Country Representative

of The Dickerman Group in Ghana

Stark Energy LIMITED

THE DICKERMAN GROUP

Stark Energy Limited is the licensee

for Sandwich Plate System (SPS) Technology in Ghana

Stark Energy LIMITED

SPS TECHNOLOGY

Completed Projects

1

Stark Energy in coordination with SPST conducted Vessel Survey, Engineering Design and Class Submission for Sandwich Plate System (SPS) Installation on Tullow's Jubilee FPSO.

OCS Stark Integrated Services (Ghana) Ltd.

Stark Energy and OCS are in joint venture agreement to provide FPSO Operations & Maintenance (0&M) Services in Ghana.

Stark Energy LIMITED

OCS

OCS combines the experience of BW Offshore and The Planet Group in providing safer, scalable, sustainable FPSO Operations & Maintenance and Crewing services.

MOBILE HYDROTEST EQUIPMENT

For Hoses

Stark Energy LIMITED

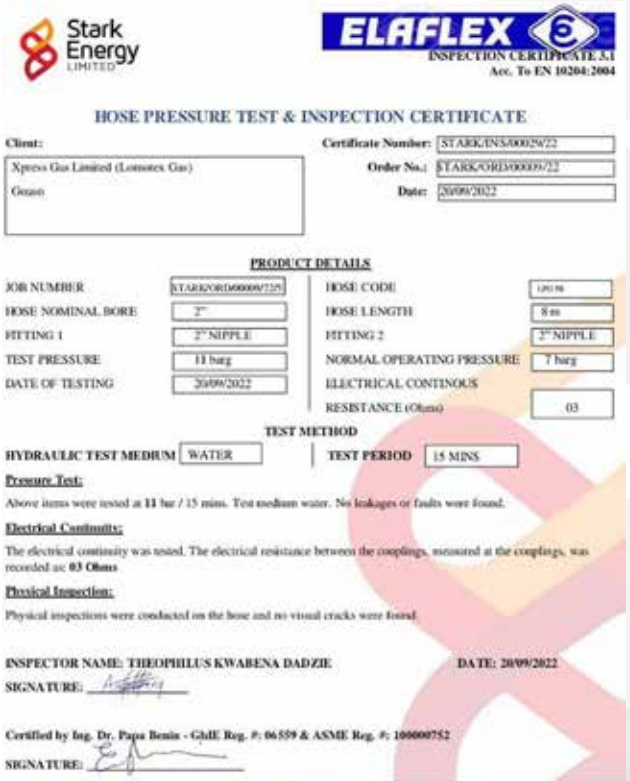
MOBILE HYDROTEST EQUIPMENT FOR HOSES

Stark Energy Limited has ventured into mobile hydrotest equipment for hoses. We have been certified by the Factories Inspectorate to conduct this hydrostatic test. The test will involve filling a hose with water and taking it to a pre-specified test pressure. While the test is going on, there are checks for leaks and expansion. After the hydrotest of a hose, there is also a test for electrical continuity to ascertain that the hoses are able to dissipate the required electrostatic charges. Every single tested hose assembly is identified with a sticker label which contains coded test date, test pressure, electrical resistance and the next test date.

This information is recorded on the test certificate issued to clients after each test. Our test is conducted with a hydraulic test pump assembly as shown below, which can generate up to 29 bar test pressure. We can guarantee that if a hose passes our test, then it is safe to use for the next six months without bursting.

Stark Energy has successfully conducted Hydrotesting, Inspection & Certification of Hoses for LPG BDCs & Depots including Tema Fuel Company, Quantum, Annadale Gas and Xpress Gas. Test Certificates as shown on the right-hand side are duly issued after completion of the Hose inspection and testing.

1. Hose hydrotest
2. Electrical Continuity test
3. Hose Sticker Label
4. Hose Certification
5. 6 months Guarantee



Stark Energy LIMITED

ELAFLEX

INSPECTION CERTIFICATE 3.1
Acc. To EN 10204:2004

HOSE PRESSURE TEST & INSPECTION CERTIFICATE

Client: Xpress Gas Limited (Lomotex Gas) Gonzo

Certificate Number: STARK/INS/00029/22
Order No.: STARK/ORD/00009/22
Date: 20/09/2022

PRODUCT DETAILS

JOB NUMBER	STARK/ORD/00009/22/9	HOSE CODE	[illegible]
HOSE NOMINAL BORE	2"	HOSE LENGTH	8 m
FITTING 1	2" NIPPLE	FITTING 2	2" NIPPLE
TEST PRESSURE	11 barg	NORMAL OPERATING PRESSURE	7 barg
DATE OF TESTING	20/09/2022	ELECTRICAL CONTINOUS RESISTANCE (Ohms)	03

TEST METHOD

HYDRAULIC TEST MEDIUM: WATER | TEST PERIOD: 15 MINS

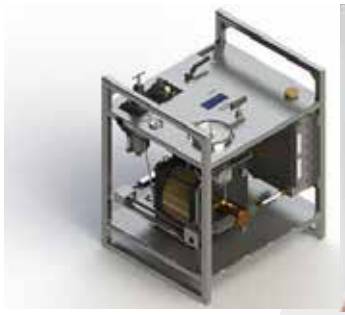
Pressure Test:
Above items were tested at 11 bar / 15 mins. Test medium water. No leakages or faults were found.

Electrical Continuity:
The electrical continuity was tested. The electrical resistance between the couplings, measured at the couplings, was recorded as: 03 Ohms

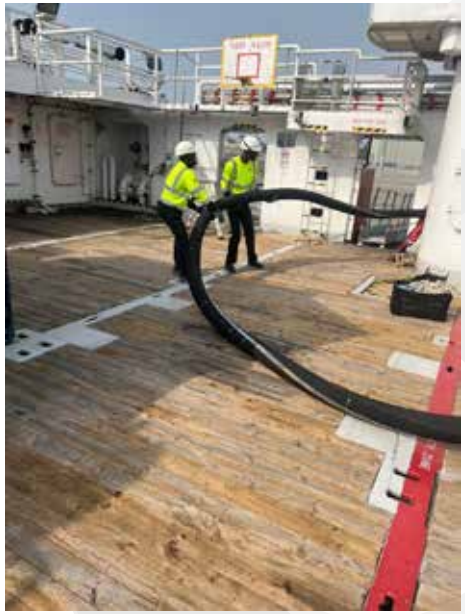
Physical Inspection:
Physical inspections were conducted on the hose and no visual cracks were found.

INSPECTOR NAME: THEOPHILUS KWABENA DADZIE DATE: 20/09/2022
SIGNATURE:

Certified by Ing. Dr. Papa Benin - GhIE Reg. #: 06559 & ASME Reg. #: 100000752
SIGNATURE:



Completed Projects for Hydrotest



HYDROTEST OF BUNKERING HOSES ONBOARD THE THOR MAGNI VESSEL, NORWEGIAN RESEARCH VESSEL

Completed Projects for Hydrotest

Asset integrity management services at TFC

Hydrotest on LPG hosses at matrixgas terminals

Stark Energy's Projects

1

6,000 BPSD Akwaaba Oil Refinery Project, Ghana

Consultancy services for Akwaaba Link Investment Limited's Oil Refinery (Provision of HSE services, PFDs, P&IDs, and SOP development). Construction supervision of the refinery. Provision of all the required documentation to National Petroleum Authority (NPA) that led to the issuance of Refinery Permit to Operate certificate.

Greenwich Industries Limited Waste Lube Oil Recycling Plant, Ghana

2

Provision of Consultancy services for Greenwich Industries Limited – Waste Lube Oil Recycling Company. (Provision of HSE services, PFDs, P&IDs, and SOP development). Provision of all the required documentation to National Petroleum Authority (NPA) that led to the issuance of Processing Plant Permit to Operate Certificate.

3

3. PSB 50,000MT AGO, 30,000MT PMS and 10,000MT LPG Storage Tank Farm Technical Services Consultants to PSB's 50,000 mt AGO, 30,000 mt PMS and 10,000 mt LPG Storage Tank Farm and Automated Loading Gantry Project.

- Managed the entire tendering process and evaluation of submitted bids.
- Prepared and issued a Request for Proposal (RFP) for the Engineering, Procurement, Construction, and Installation (EPCI) of the Tank farm.
- Oversaw the Geo-technical survey on the proposed site.
- Oversaw the Front-End Engineering Design and Detailed Engineering.
- Estimation of EPC cost.
- Evaluated the technical and commercial proposals of EPCI contractors.
- Submission of appropriate documentation for building permit acquisition.
- Submission of appropriate documentation to NPA for the construction of 50,000MT AGO, 30,000MT PMS & 10,000MT LPG Tank Farm and automated loading Gantry.
- Putting in procedures and supervision of construction of the Tank Farm and Loading Gantry
- Interface with the Regulator, National Petroleum Authority (NPA), EPA and other Regulatory agencies.
- Preparation of documentation for acquisition of Building and EPA Permits
- Stakeholder management
- Conducted HSEQ audits and ensured compliance with regulatory and PSM standards.

4

Sahara Group's 6,000MT LPG Storage Facility Technical Services Consultants to Sahara Group-Ashrami Synergy Ltd's 6,000 MT LPG Storage Facility and Associated Loading Gantry Project.

- Managed the entire tendering process and evaluation of submitted bids.
- Prepared and issued a Request for Proposal (RFP) for the Engineering, Procurement, Construction, and Installation (EPCI) of the Tank farm.
- Oversaw the Geo-technical survey on the proposed site.
- Oversaw the Front-End Engineering Design and Detailed Engineering.
- Estimation of EPC cost.
- Evaluated the technical and commercial proposals of EPCI contractors.
- Submission of appropriate documentation for building permit acquisition.
- Submission of appropriate documentation to NPA for the construction of 6,000MT LPG Tank Farm and automated loading Gantry.
- Putting in procedures and supervision of construction of the Tank Farm and Loading Gantry.
- Interface with the Regulator, National Petroleum Authority (NPA), EPA and other Regulatory agencies.
- Preparation of documentation for acquisition of Building and EPA Permits
- Stakeholder management.
- Conducted HSEQ audits and ensured compliance with regulatory and PSM standards.

5

Prepared documentation for successful acquisition of the Petroleum license for 300,000 BPSD Ada Oil Refinery.

- Conducted feasibility studies.
- Estimate of Refinery EPC cost.
- Undertook the FEED in conjunction with our foreign partners.
- Prepared all the engineering drawings.
- Prepared and submitted documentation for acquisition of construction permit.
- Interfaced with the Regulator, National Petroleum Authority (NPA), EPA & GPHA for issuance of permit.
- Conducted HSEQ audits and ensured compliance with regulatory and PSM standards

Rikpat's 20 TON/HR Lube Oil Blending Plant

6

- Provision of HSEQ (Health, Safety, Environment, and Quality) services and documentations, produced required documentation for the acquisition of National Petroleum Authority (NPA) License and permit for construction of the lube oil blending facility
- Supervised construction and installation of capital assets
- Provision of complete PFDs, UFDs, P&IDs, and SOPs for the entire refinery,
- Supervised the commissioning and test run of the facility and submitted the test run to NPA and produced NPA required documentation, which led to the issuance of Permit to Operate the Lube Oil Blending Plant.

7

Metka's Combined Cycle Power Plant, Ghana

- Stark Energy Limited undertook HAZID Constructability Risk Assessment for the 3.5 Km Natural Gas Pipeline Construction from the VRA Natural Gas Substation to Metka's Power Plant in Tema.

130 MW Solar Power Plant in Ghana

8

Stark Energy Limited is the consultants to Orion Energy Ghana/ Petra's 130 MW Solar Power plant and provide all technical, administrative and operational support to ensure that the renewable project is developed. Stark Energy Limited will also be providing technical and operational support before, during, and after the construction of the project.

9

Installation and Commissioning of Tank Gauging and Gas Detection Systems at Quantum, Tema

- Mounting of sets of tank instruments for 3 No. LPG tanks.
- Loop checking to confirm existing wiring on all terminations.
- Termination of instruments in the field and MCC room (RTU).
- Final loop checks and instruments power up.
- Functional checks and handing over.
- Submission of installation report.

10 Provision of Electrical, Instrumentation,Fire and Gas Systems and SCADA Installation works at the Newgas Cylinder Bottling Plant, a subsidiary of the Quantum Group - Tema

1. Installation of Low Voltage (LV) switch board with Automatic Transfer Switch (ATS).
2. Connection of power cables and control cables from LV Switchboard to field equipment.
3. Installation of pressure gauges, flow switch and emergency shutdown valves.
4. Installation of instrument junction box and support.
5. Installation of field Fire and Gas (F&G) devices including; Flame detectors, Gas detectors, Heat detectors smoke detectors, manual call point, beam and sounder.
6. Installation of Fire and Gas panel.
7. Connection of electric cables from F&G terminal server to field F&G devices including termination.
8. System wiring between F&G terminal server and F&G panel.
9. Installation of SCADA & KC SCADA panel.
10. Wiring and connection of cables between SCADA & KC SCADA panel.
11. System wiring between Remote Terminal Unit (RTU) terminal server and RTU.
12. Connection of cables between RTU and F&G panel.
13. Calibration of field instruments.
14. Test and inspection as per Electrical continuity check, loop check and others.

11 Special Survey, LIMPET Sea Chest Isolations And Remotely Operated Vehicle (ROV) Inspection On Tullow's Jubilee FPSO, GHANA

1. Installation of the LIMPET Sea Chest Isolations to enable maintenance work be carried out safely on the client specified Sea Chests.
2. General Visual and Close Visual Inspections of the Hull and Its appendages using an ROV.
3. Inspection and Angle Measurements of Mooring Chains.
4. Isolation of underwater penetrations (Draft Gauge Sea Water Inlet) for maintenance work to be carried out.
5. Isolation of underwater discharge lines (Boiler Blowdown) for maintenance work to be carried out.
6. Impressed Current Cathodic Protection (ICCP) Surveys.

12

HCP in partnership with Stark Energy conducted a training to provide advanced technical solutions for the aviation fuel value chain according to JIG, EI and IATA standards. All the major aviation fuel stakeholders including National Petroleum Authority (NPA), Total Energies, TOR, Vivo/Shell, GOIL, Woodfields, CBOD, Sentuo Oil refinery, Sahara Energy and Blue Ocean.

13

Manntek in partnership with Stark Energy conducted an intensive training on the repair and maintenance of dry gas couplings for the major downstream oil and gas companies. These major downstream companies includes: National Petroleum Authority (NPA), Tema Fuel Company, Quantum LPG , Matrix Gas, Blue Ocean, , CBOD and Annadale Gas.

14

Stark Energy in partnership with HOERBIGER undertook a comprehensive servicing and overhauling LPGC Compressors on MODEC's TEN FPSO to ensure reliability and performance.

15

Stark Energy, in collaboration with CBOD, provided an advanced training program led by the Canadian Petroleum Training Institute, focused on building expertise in Terminal Operations, Refinery Economics, ESG, Safety, Terminal Automation & Data Analytics, and Innovation.

16

Provison of Technical Advisory Services for A & B Success Africa Waste Lube Oil Recycling Plant

Stark Energy conducted an operational audit and developed Piping and Instrumentation Diagrams (P&IDs) for the A&B Success Africa Waste Lube Oil Recycling Plant.

Revalidation for Tema Oil Refinery's 2008 CDU HazOp Studies and Layers of Protection Analysis (LOPA)

17

Stark Energy conducted full Plant assessment by identifying potential process deviations and their consequences, evaluating the adequacy of existing safeguards, conducting a Layers of Protection Analysis (LOPA) to assess risk levels and the effectiveness of protection layers, and recommending practical, sustainable risk reduction measures that align with best international practices and applicable regulatory requirements.

18

Provision of Asset Integrity services on bunkering hoses onboard Thor Magni Vessel, Norwegian Research Vessel.

Stark Energy provided its DNV approved hydrotest pressure on hoses onboard the Thor Magni vessel to ascertain the integrity of the bunkering hoses for safe operations. The bunkering hoses were tested and certified before the vessel sailed off from the anchorage.

Underwater Inspection in Lieu of Dry-Docking (UWILD) On Tullow's Jubilee FPSO and MODEC's TEN FPSO, GHANA

19

- General Visual Inspection (GVI) and Close Visual Inspection (CVI) of the Jubilee FPSO (MV.21) hull and Its appendages using an ROV.
- General Visual Inspection (GVI) and Close Visual Inspection (CVI) of the TEN FPSO (MV.25) hull and Its appendages using an ROV.

20

UWILD Inspection of CALM Buoy Mooring System – Tullow Ghana Limited

- Diverless inspection and integrity assessment using Remotely Operated Vehicle (ROV)
- General Visual Inspection (GVI) and Close Visual Inspection (CVI) of the Mooring Chains.
- Chain measurements of mooring chains.

21

Provision of Hull and Marine General and Specialist Repair Services for Tullow's Jubilee FPSO – Survey, Engineering Design and Installation using Sandwich Plate System (SPS) Reinstatement for FPSO Decks-(ongoing)

Our Clients

1. Puma Energy
2. Zen Petroleum
3. Goil
4. Quantum Terminals
5. Total
6. Vivo/Shell
7. Matrix Ghana
8. Petrosol
9. Tema Fuel Company
10. Vana Energy
11. Stargas
12. Trade Cross
13. Annandale Gas Ghana
14. Trinity Gas
15. Sahara Group
16. GTS Trailer
17. BOST
18. Tema Oil Refinery (TOR)
19. METKA
20. IBISTEK
21. Tullow Oil
22. PSB Oil & Gas
23. Partnership with Assosciation of Oil Marketing Companies (AOMC)
24. Partnership with Chamber of Bulk Oil Distributors (CBOD)
25. MODEC
26. YINSON
27. ENI

Major Clients

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