FRONTEDGE
HELPSTON ENERGY LTD

ENGINEERING

PROCUREMENT

PROJECT MANAGEMENT

MANPOWER

SUPPLY


FRONTEDGE
HELPSTON ENERGY LTD


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WHO
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ARE

FRONTEDGE HELPSTON ENERGY LTD is a totally indigenous registered Engineering, Procurement, Project Management, and Manpower services company. Our services are pertinent to industries such as Oilfields, Power, Refineries, Petrochemical, and Fertilizer plants.

We provide a full spectrum of Engineering Design and Field services to the oil and gas sectors, with a focus on upstream and midstream projects for both onshore and offshore applications.

At **FRONTEDGE HELPSTON ENERGY LTD**, we pride ourselves on our commitment to customer satisfaction, integrity, and professionalism. Our team of experienced professionals is dedicated to exceeding expectations and delivering value-added solutions to enhance your operations. Contact us today to discover how we can support and elevate your projects.

Manpower Engineering:

Our manpower engineering services connect businesses with skilled professionals in the fields of engineering, project management, and technical support. With a focus on matching the right talent to the right opportunity, we empower organizations to drive success and achieve their goals.

Process Equipments:

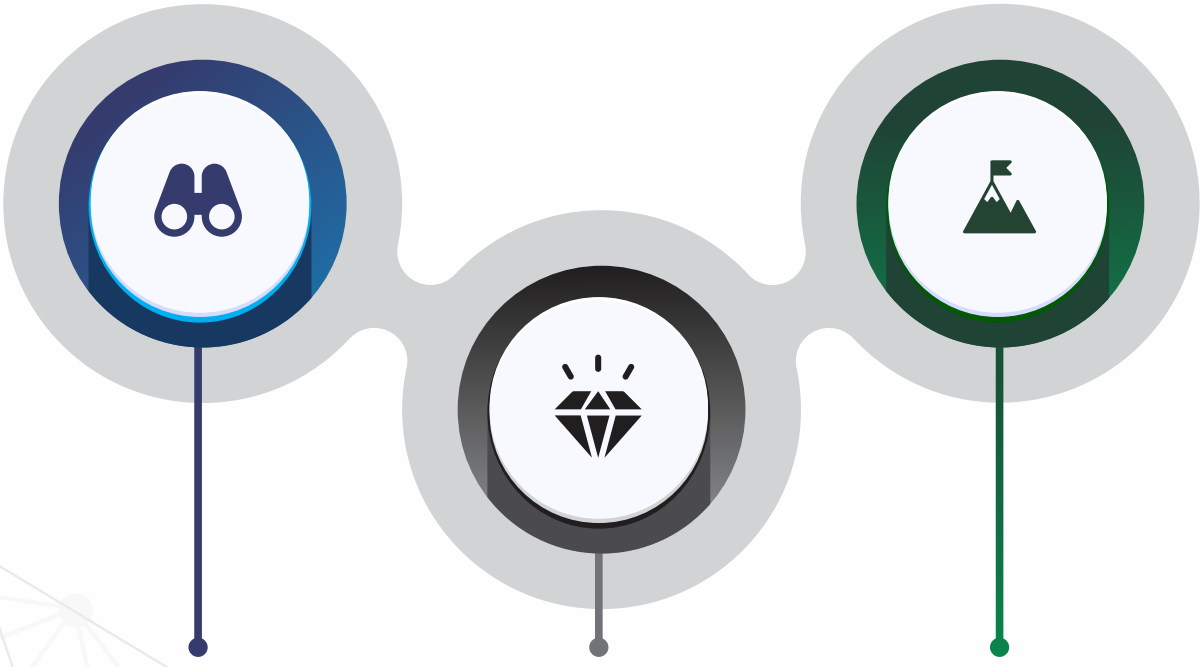
Our range of process equipments caters to diverse sectors, providing cutting-edge technology and robust solutions to optimize production processes. From heavy rotating equipments to simplified process equipments , we offer innovative solutions to meet the demands of modern industrial operations.

Civil & Mechanical Construction:

Building the foundations of progress, our civil and mechanical construction services embody quality craftsmanship, attention to detail, and a passion for excellence. From commercial developments to infrastructure projects, we bring expertise, innovation, and efficiency to every construction endeavor.

Quality Policies

- We are committed to delivering industrial machines that meet or exceed industry standards and customer requirements.
- Our quality policy emphasizes reliability, durability, and performance of our machines.
- Quality craftsmanship and attention to detail are paramount in our vessel maintenance and engineering solutions.
- Continuous training and development of our workforce ensure that our services are delivered with expertise and professionalism.
- Our construction projects are executed with a commitment to quality workmanship and adherence to project specifications.
- Safety is our top priority, and we maintain stringent quality policies to ensure a secure working environment.
- We are committed to building long-term partnerships with clients based on trust, integrity, and exceptional service delivery.



Our Vission

Our Vision is to become the most dependable service provider in the energy sector through perseverance, dedication and collaboration.

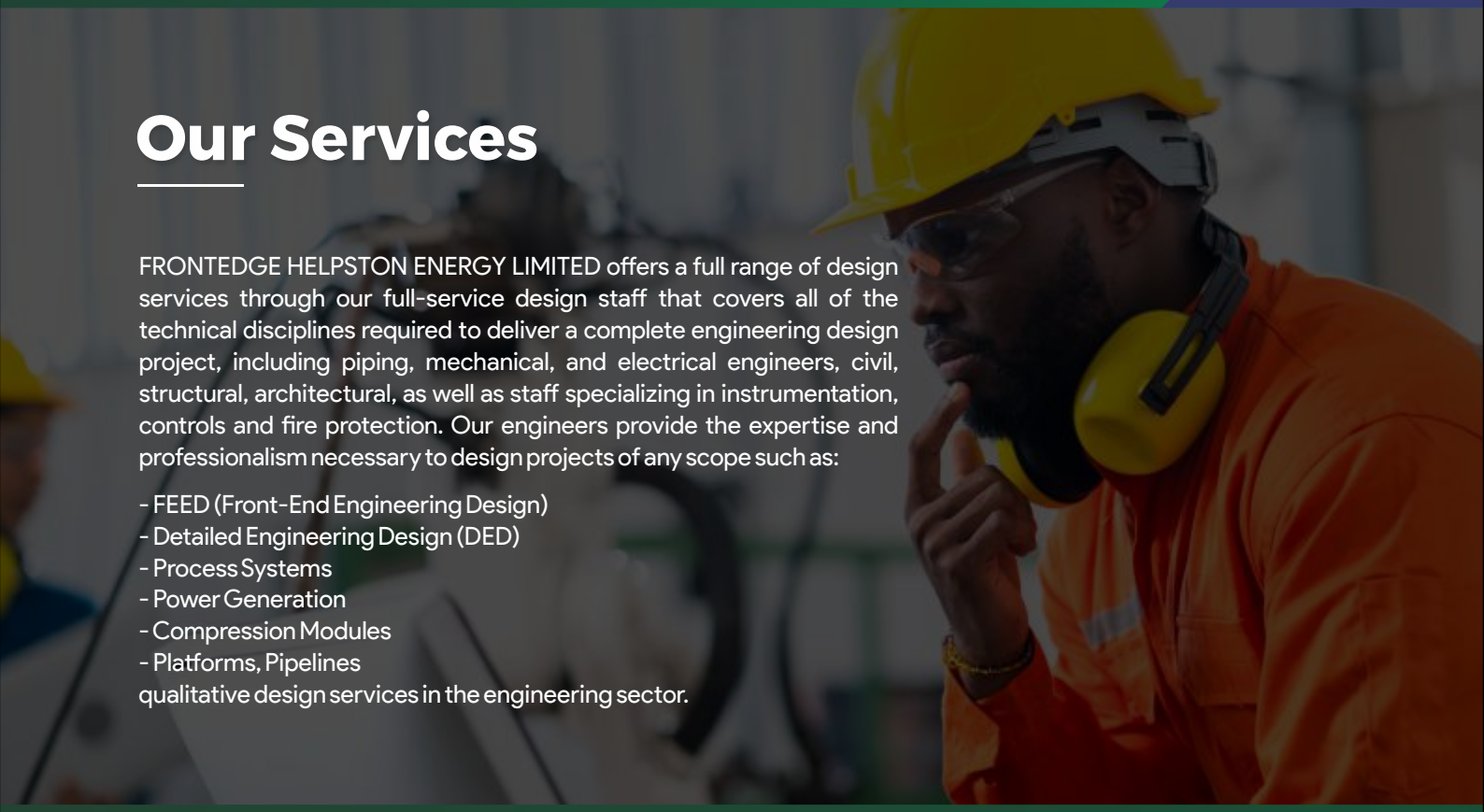
Our Mission

Our Vision is to Strive for operational excellence by implementing worldwide best industry practices and standards.

Core Value

Our customer feedback is valued and incorporated into our quality improvement initiatives to enhance client satisfaction.

Our Services



FRONTEDGE HELPSTON ENERGY LIMITED offers a full range of design services through our full-service design staff that covers all of the technical disciplines required to deliver a complete engineering design project, including piping, mechanical, and electrical engineers, civil, structural, architectural, as well as staff specializing in instrumentation, controls and fire protection. Our engineers provide the expertise and professionalism necessary to design projects of any scope such as:

- FEED (Front-End Engineering Design)
- Detailed Engineering Design (DED)
- Process Systems
- Power Generation
- Compression Modules
- Platforms, Pipelines

qualitative design services in the engineering sector.

Our wide range of engineering Software application and Tools consist of the following:

- **Process:** HYSIS/OLGA, Flarenet, HTRI/HTFS (Heat Exchangers), MAROS
- **Pipeline:** PIPESIM2000, OLGA2000, STONER, ANSYS, ABAQUS
- **Mechanical:** GTPRO (Gas Turbine), Spreadsheets (Valve sizing, relief, vessel sizing)
- **Design:** AUTOCAD, MICRO STATIO, PDMS and RebisAutoplant
- **Piping:** CAESAR11, Flex pipe, PV ELITE, PIPESIM, OFFPIPE
- **Instrumentation:** INTOOLS
- **Electrical:** EDD, SKM POWER TOOLS, EDSA, VISION, Intelec, Mathcad
- **Civil/Structural:** STRUCAD, SESAM, SACS, STAAD, CONCRETE ANALYSIS, MDESIGN, SPREAD FOOTING DESIGN
- **Project Management:** PRIMAVERA P3, MSP, ASSAI, ATLAS, PROARC,
- **Safety:** FRED, ENVID, FIREPLAN

Using this latest industry-standard engineering software, codes and standards, our multidiscipline engineering and technical team delivers qualitative design services in the engineering sector.

ENGINEERING

Continuous improvement is key to our quality assurance process, ensuring that our products are innovative and technologically advanced.

PROJECT MANAGEMENT

Continuous improvement is key to our project management, ensuring that our projects are delivered timely and cost effective.

MANPOWER

Our recruitment processes prioritize the selection of skilled professionals who meet our high-quality standards.

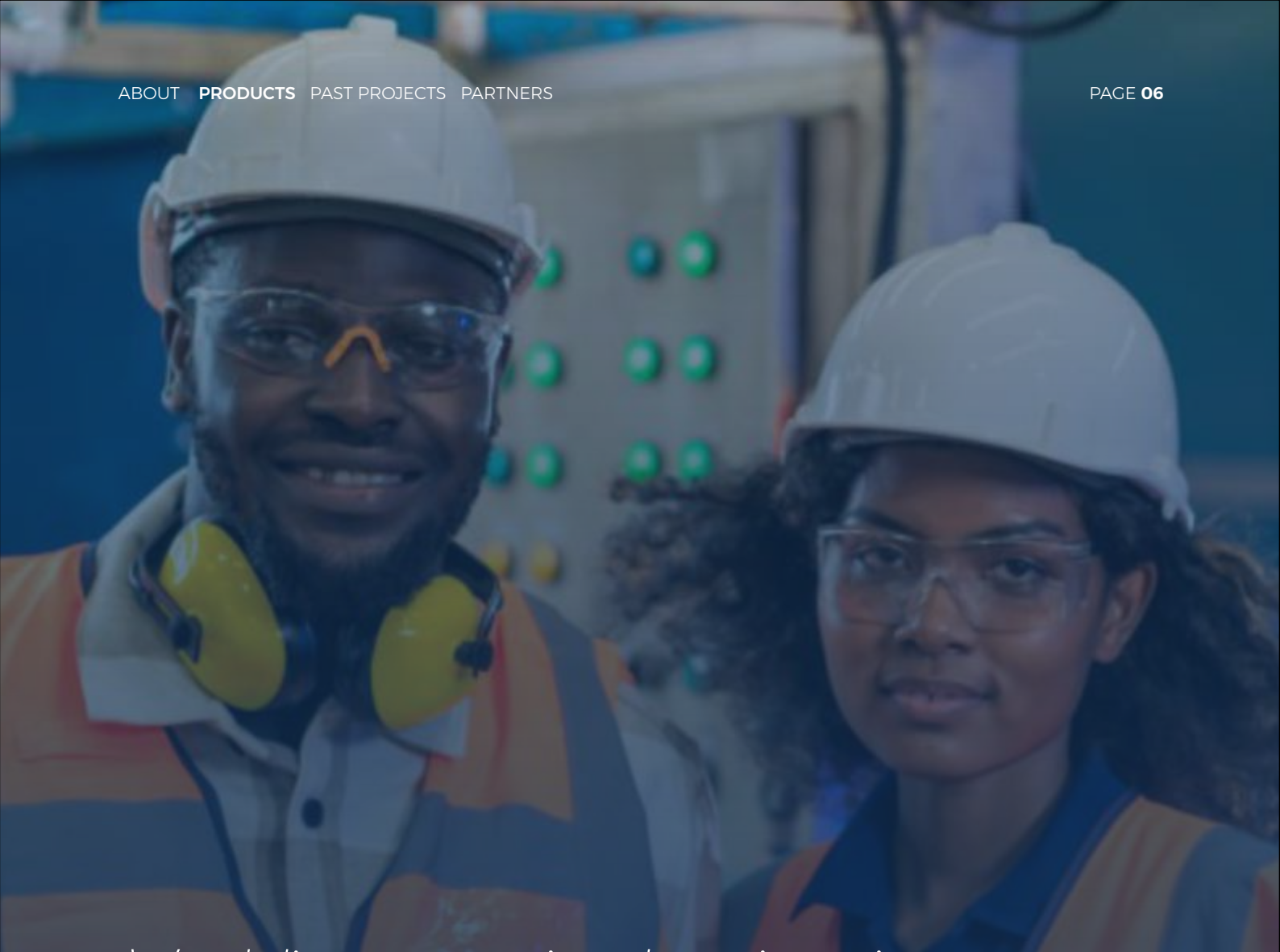
FRONTEDGE HELPSTON ENERGY LTD

EQUIPMENT LEASING

Land & Marine equipment;
Vessels, Tugboat, Speedboat, Houseboat, Ramp Barge, Work barge, Swamp Buggy, Bulldozers, Payloader, Cranes, Forklift and Supplies of spares.

PIPELINE SERVICES & CONSTRUCTION

maintenance of pipeline systems, which are essential for transporting oil, gas, water, and other substances, Fabrication, Corrosion Control, Field Test and Inspection



We deliver exceptional engineering solutions that exceed our clients' expectations in terms of quality, safety, and efficiency.

FRONTEDGE HELPSTON ENERGY LIMITED is a premier engineering firm with a strong presence in the mechanical and civil engineering sectors. Our quality policy emphasizes reliability, durability, and performance of our machines.

ENGINEERING

SUPPLY, INSTALLATION & COMMISIONING

FRONTEDGE ENERGY LTD is a distinguished civil and mechanical engineering firm, delivering comprehensive solutions for complex engineering challenges. Our services span from conceptual design to the final stages of construction, ensuring excellence and innovation at every step.

Civil Engineering:

We specialize in infrastructure development, including roads, bridges, and public works, ensuring sustainable and resilient structures.

Mechanical Engineering:

Our expertise extends to the design, analysis, and manufacturing of mechanical systems, focusing on efficiency and reliability.

Our maintenance overhaul of heavy duty machines including construction, welding and fabrication covers the following area

Fabrication: Custom fabrication of parts that may no longer be available or to improve design.

Alignment Checks: Ensuring all components are correctly aligned for optimal performance.

Calibration: Calibration of control systems and gauges to maintain accuracy.

Safety Checks: Verifying that all safety features are functioning properly.

Documentation: Keeping detailed records of maintenance activities for future reference.

PROCUREMENTS

BRINGING IDEAS & INNOVATION TO LIFE
THROUGH **TECHNOLOGY**

FRONTEDGE ENERGY LTD provides a dedicated services in the procurement and supply of MRO (Maintenance, Repairs and Operations) equipment in the Oil & Gas industry. With keen perspective to our client's cost portfolio, we strive to maintain the process of obtaining materials and supplies at the best price reasonably available through open and fair competition for our clients. In fact, we are in collaboration with Original Equipment Manufacturers (OEMs) and therefore able to supply various equipment at competitive prices. We supplement our client's internal procurement departments and assist in a variety of tasks. These tasks include: strategic planning, implementing best practices, supplier rationalization and collaboration, strategic sourcing and negotiation.

Our products include:

- Mechanical, Electrical, Instrumentation and Automation Equipment Supply
- Valves (Ball, Globe, Check, etc.)
- Pipes, Fittings, Flanges and Gaskets
- Gas Flow Meter and Detectors
- Metering Skids
- Subsea Equipment's (HFL's, Stab plates, ROV's, etc.)
- Bulk and Loose Materials

FRONTEDGE ENERGY offers end-to-end acquisition and procurement services to clients in both the upstream & downstream sectors. Our close relationships with leading manufacturers from around the world give us access to a comprehensive range of innovative products and full after sales technical support. This enables us to meet our customers' precise product requirements at highly competitive rates with minimum lead times.

FRONTEDGE
HELPSTON ENERGY LTD

PROJECT MANAGEMENT

Our specialty is providing project management services include but not limited to following discipline.

- Project Planning
- Construction management
- Commissioning/start up
- Procurement
- Project Management
- Quality assurance/Quality control
- Procedure development
- Database development and management
- Materials management

STRATEGIC PLANNING AND FEED STUDIES
Cost Estimating / AFE Development

- Regulatory Compliance
- Project Cost and Schedule Control /
- Progress Reporting / Project Metrics
- Construction Support, Facility
- Commissioning, Start-up Procedures and Start-up Assistance

POST PROJECT MANAGEMENT

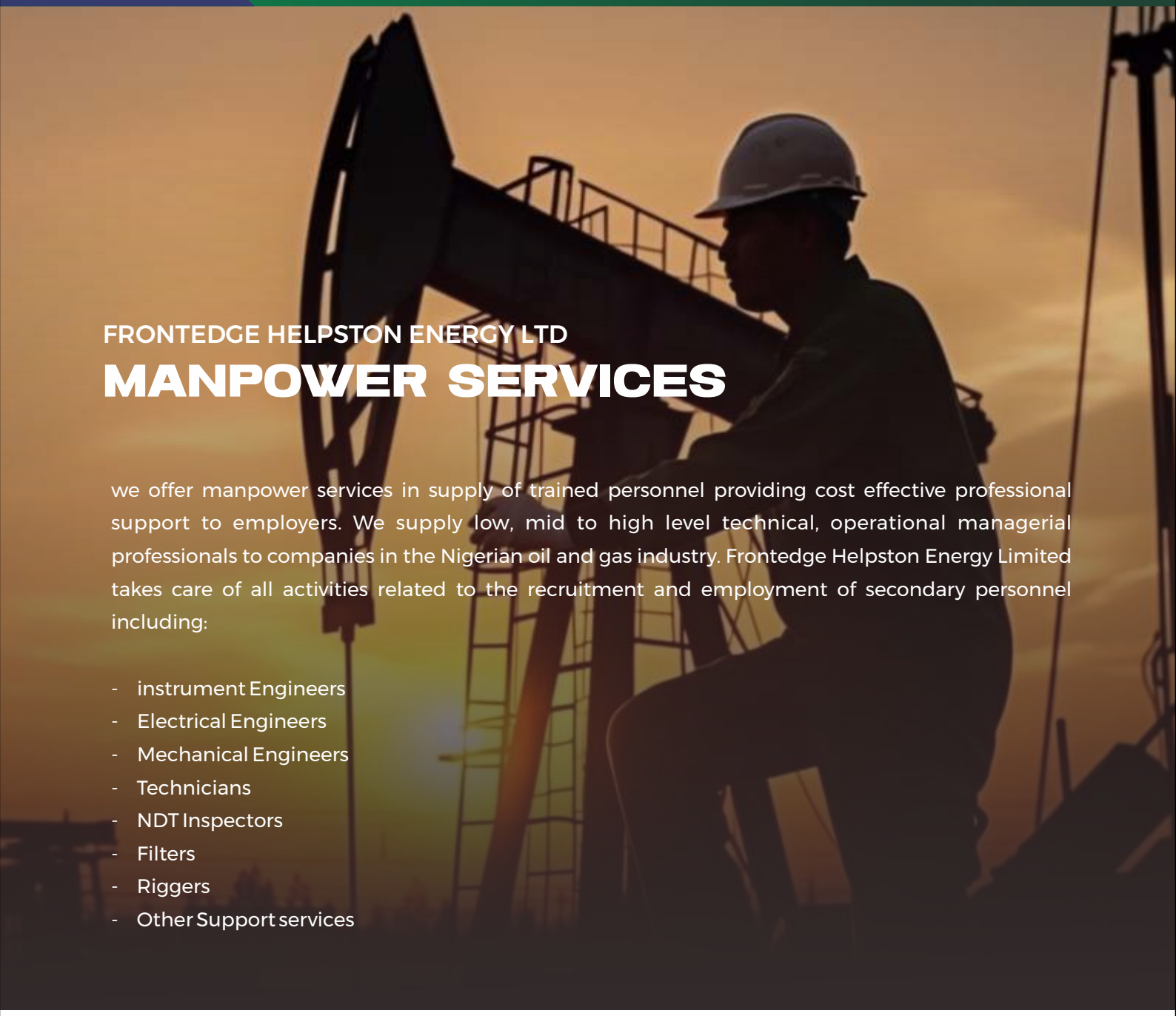
- Post Project Documentation
- Turnaround Planning & Support
- Process Safety Management (PSM)
- Operator Training and Operating Manuals

PIPELINE SERVICES

FLOWLINE CONSTRUCTION & PIPELINE MAINTENANCE SERVICES

FRONTEDGE ENERGY LTD has been at the forefront of delivering innovative solutions for the oil and gas industry. Our commitment to quality, safety, and efficiency is the bedrock of our operations.

- We specialize in the construction of flow lines, utilizing advanced welding techniques and state-of-the-art equipment to ensure durability and compliance with industry standards.
- Our fabrication services are tailored to meet the unique needs of each project, from complex pipeline components to bespoke structural elements.
- We offer comprehensive maintenance and repair services to ensure the longevity and optimal performance of pipeline systems.
- Adhering to the strictest safety standards, we ensure all projects comply with environmental regulations and industry best practices.
- We leverage the latest technology in pipeline construction and welding, including automated welding systems and nondestructive testing methods.
- Our in-house quality assurance program guarantees that all fabrication and construction activities meet or exceed client specifications and industry requirements.



FRONTEDGE HELPSTON ENERGY LTD

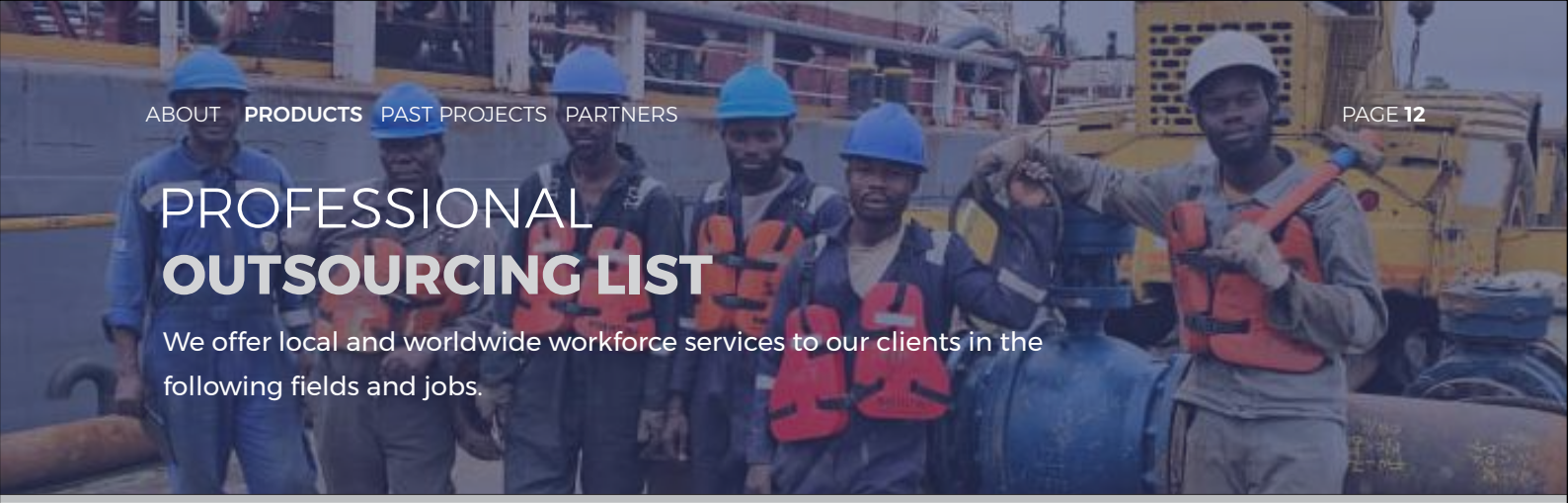
MANPOWER SERVICES

we offer manpower services in supply of trained personnel providing cost effective professional support to employers. We supply low, mid to high level technical, operational managerial professionals to companies in the Nigerian oil and gas industry. Frontedge Helpston Energy Limited takes care of all activities related to the recruitment and employment of secondary personnel including:

- instrument Engineers
- Electrical Engineers
- Mechanical Engineers
- Technicians
- NDT Inspectors
- Filters
- Riggers
- Other Support services

FRONTEDGE HELPSTON ENERGY LIMITED provides competitive and quality manpower delivery services. We aim to be a model and a reference point in our areas of operation and to bring to bear the wealth of experience of our knowledgeable and dedicated staff. At Frontedge our manpower service approach is guided by commitment to safety, compliance with international standards and regulations as well as guaranteed customer satisfaction.

Our manpower engineering services connect businesses with skilled professionals in the fields of engineering, project management, and technical support. With a focus on matching the right talent to the right opportunity, we empower organizations to drive success and achieve their goals.



PROFESSIONAL **OUTSOURCING LIST**

We offer local and worldwide workforce services to our clients in the following fields and jobs.

EXECUTIVE MANAGEMENT

Directors,
Chief Technical Office,
Executive Consultants,
Advisors
Chief Financial Officer

MANAGERS

Project Manager
Construction Manager
Finance Manager
Technical Manager
Operations Manager
QSHE Manager
Maintenance Manager etc.

ENGINEERS

Mechanical Engineer
Civil Engineer
Electrical Engineer
Instrumentation Engineer
Process Engineer
Civil Engineer
Safety Engineer
Structural Engineer
QAQC Engineer
Materials Engineer
Inspectors

ARTISIAN

Welder
Fitter
Grinder
Scaffolder
Rigger
Operators
Spray Painter
Blaster

TECHNICIAN

Instrument Technician
Electrical Technician
Mechanical Technician
Automation Technician
etc

OTHERS

IT Expert
Rope Access Technician
ASME Certified Inspector
API Certified Inspector
Subsea Engineer
Security Expert
Energy Consultant
Marine Consultant
Unskilled Labors

ADMINISTRATORS

Account
Admin officer
Logistics officer
Purchasing officer
Drivers etc.
Safety officer
Site Nurse
Business Development Executive

OUR PARTNERS EQUIPMENTS CATALOGUE

IN STOCK AND ON DEMAND

Our OEM Partners range of oil and gas process equipments caters to diverse sectors, providing cutting-edge technology and robust solutions to optimize production processes. From Oil separation equipments to gas process and treatment equipments, we offer innovative solutions to meet the demands of modern industrial operations.

Features

- High filtering and separation efficiency
- Reliable and easily operated quick-opening closures
- Flanged or welded connection
- With manway or without
- Reliable components and internals
- Process guarantee
- Mechanical / Digital Automation Systems
- Self-contained skid with pipe branch supports
- Fast delivery period
- Cost-effectiveness

Basic Technical Specification of Filter Separator

- Separator Vessel Diameter: 8 – 42 in.
- Separator Vessel Length (S/S): 6-12 ft.
- Max. Pressure Rating: up to 1440 psi (~10 Mpa)
- Gas flowrate: 2-220 MMSCFD

CODE & STANDARDS

ASME VIII Div. 1/2 | ASME UV | API 14C | API 6D | CE/PED
NACE MR 0175 | ASME B16 | IEC | GB150 | GOST

Product Composition

Well head Dual Pot Sand Filter has a mature, compact and concise design features that allows it to operate economically and efficiently under standard design pressures of up to 10,000psi and 15,000psi. It can provide services for major production and testing companies worldwide.

Application Exploration and well testing Production and on-line testing (including multi-phase flow measurement) Extended well testing Early production facilities.

Characteristics & Advantages

Separation of sand and other solid particles from well flow Double cylinder system with high pressure bypass and double isolation valves nter-cylinder switching flow rate for continuous sand removal Telescopic lifting bracket for easy replacement of filter element Quick union on cylindrical containers for rapid replacement and maintenance of filter elements Optional water-jet sand-washing system Optional sandbox for sand treatment

The three-phase separator is mainly used for the three-phase separation of oil-gas- water from oil wells or gas wells. It not only separates liquid and gas, but also removes oil and water in the liquid. Oil, gas and water go through different pipelines to the next link. This three-phase separator is more widely used than the gas/liquid two-phase separator and the oil-water two-phase separator. Correspondingly, there are also more complicated internal structure.

The basic difference between three-phase separator and two-phase separator is that the three-phase separator must be equipped with weir plate. The weir plate is an isolation plate with a certain height, which is installed at the end of the separator. In the process of oil-water separation, the oil-water mixture moves from the inlet to the end of the separator, and the oil floats gradually due to the low density, while the water gradually decreases. However, when the weir plate height is appropriate, only oil can flow over the weir plate and leave the separator from the oil outlet pipeline. Water is blocked in front of the weir plate and flows out from the water outlet of the lower part of the container in front of the weir plate.

Product Advantages:

- Max. design pressure: 9.8MPa (1440psi)
- Max. normal working pressure: <9.0MPa
- Max. design temp.: 80°C
- Liquid handling capacity: ≤300m3/d
- Inlet pressure: 32.0MPa (4640psi)
- Inlet air temp.: ≥10°C (50°F)
- Processing medium: crude oil, water, associated gas
- Set pressure of safety valve: 7.5MPa (HP) (1088psi),
- 1.3MPa (LP) (200psi)
- Set pressure of rupture disk: 9.4MPa (1363psi)
- Gas flow measurement accuracy: ±1%
- Liquid content in gas: ≤13mg/Nm3
- Oil content in water: ≤180mg/L
- Moisture in oil: ≤0.5%
- Power supply: 220VAC，100W
- Physical properties of crude oil: viscosity (50°C); 5.56Mpa·S; crude oil density (20°C):0.86
- Gas-oil ratio: >150
- We can also customize according to specific needs, please feel free to contact us.

THREE-PHASE SEPARATOR

It is mainly used for the three-phase separation of oil/gas/water in the production of oil or gas wells. It is not only necessary to separate liquid and gas, but also to separate oil and water in liquid. Oil, gas and water flow through different pipelines to the next link. Three phase separator is more widely used than gas-liquid two-phase separator and oil-water two-phase separator. Correspondingly, there are more complicated internals.

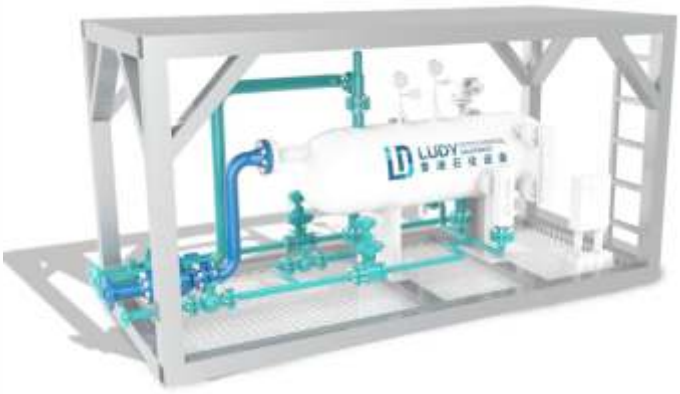
The basic difference between the three-phase separator and the two-phase separator is that the three-phase separator must be equipped with weir plate. The weir plate is an isolation plate with a certain height, which is installed at the end of the separator. In the process of oil-water separation, the oil-water mixture moves from the inlet to the end of the separator, and the oil floats gradually due to the low density, while the water gradually decreases. However, when the weir plate height is appropriate, only oil can flow over the weir plate and leave the separator from the oil outlet pipeline. Water is stopped in front of the weir plate and flows out from the water outlet of the lower part of the container in front of the weir plate.

Product Advantages:

- Daily natural gas processing capacity:30*104 Nm3/d
- Can deal with the crude separation of a large amount of liquid and gas;
- High separation speed and precision;
- Advanced control system, high degree of automation, easy to operate;
- Skid-mounted design, convenient for hoisting and transportation, saving transportation cost;
- High security with its less occupied area;
- Compact and reasonable structure design, integration of a variety of measuring instruments and control equipment;
- Compatible with multiple control modes (direct + PLC + computer + DCS);
- Reliable quality, can match parts according to the brand specified by customers, such as instruments and valves.

Three-phase Separation and Metering Skid with Heating

In the production process of oil and gas wells, oil and water will be mixed together by external force, in order to be extracted with the state of water-in-oil and oil-in-water. This requires the use of a separator to separate it, oil as an output to the next stage of production, water to be discarded or refilled, or treated as domestic water for oilfield construction sites, etc.



- Sensitive to scaling
- Fast separation speed
- Advanced control system, high degree of automation and easy operation
- Skid-mounted design, convenient for hoisting and transportation, saving transportation cost
- High safety
- Compact and reasonable structure design, integration of a variety of measuring instruments and control equipment
- Compatible with multiple control modes (direct + PLC + computer + DCS)
- Reliable quality, such as instruments and valves, which can be matched with the brand specified by customers

TWO-PHASE SEPARATOR

Horizontal two phase separator								
Size	Pressure	Inlet	Oil/Water outlet	Gas outlet	Operating temp.	Gas handling capacity	Liquid handling capacity	Medium
3000×900mm	1.7Mpa	DN50	DN50	DN100				
3000×900mm	3.5Mpa	DN100	DN50	DN100				
3000×900mm	10Mpa	DN100	DN50	DN100				
3000×1200mm	0.9Mpa	DN200	DN80	DN200				
3000×1200mm	1.7Mpa	DN150	DN80	DN150				
3000×1200mm	3.5Mpa	DN150	DN80	DN150				
4500×1200mm	0.9Mpa	DN200	DN80	DN200				
4500×1200mm	3.5Mpa	DN150	DN80	DN150	Up to 90℃	1~100 million cubic meters	500~30000bpd	Oil/gas/water
4500×1200mm	10Mpa	DN150	DN50	DN150				
5000×1200mm	1.7Mpa	DN150	DN80	DN150				
6000×1200mm	2.0Mpa	DN200	DN80	DN200				
4500×1800mm	0.9Mpa	DN200	DN80	DN200				
4500×1800mm	1.7Mpa	DN200	DN80	DN200				
4500×1800mm	3.5Mpa	DN150	DN80	DN150				
4900×1800mm	1.7Mpa	DN200	DN80	DN200				

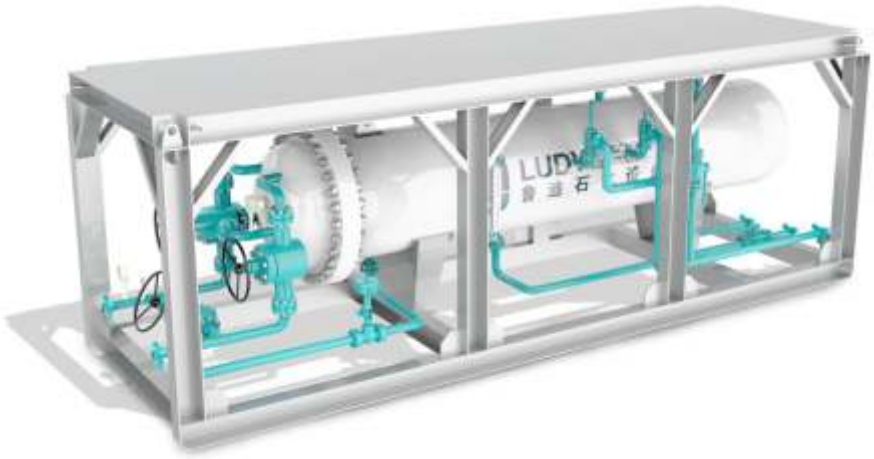
GAS BOOSTER SKID WITH 3-PHASE SEPARATION AND HEATING

The Gas Booster Skid with 3-phase separation and heating consists of heating (indirect principle), 3-phase separation (momentum, gravity), and a gas compressor with control and automation systems. All instrumentation and electrical components are explosion-proof with water & dust protection. The current modular booster skid is designed to heat up the fluids, conduct three-phase separation (oil, gas, water), measure the flow rate of each phase, and boost the gas pressure to transport to the further station or CNG application. It increases the natural gas pressure from 0.5-2 MPa up to 6 MPa. The Gas Booster Skid is modular, skid-mounted, and easy to transport and mobilization. The modular unit requires less site works for installation, commissioning, and mobilization. Feel free to contact our company for more information, technical assistance, price, and customization.

TECHNICAL PARAMETERS:

- Working medium: natural gas, oil, water;
- Gas flow rate: 100 000 – 500 000 Nm3/d
- Design pressure: 9.9 MPa (1440 psi)
- Compressor inlet pressure: 0.3-3 MPa
- Compressor discharge pressure: 4-6 Mpa
- Working Mode: continuous
- The package can be customized as per the project requirements

STEAM HEAT EXCHANGER



Steam heat exchanger is used as a part of well testing device, which plays an important role in ensuring that the well fluid reaches the necessary temperature level before entering the test separator.

Steam heater is a special type of heat exchanger that transfers heat from steam to well fluid. It is mainly used in well testing and well flushing. The configuration of steam heat exchanger depends on the requirements of oilfield service company or operator. It usually includes flow control valve, choke valve, level indicator, pressure thermometer, safety valve and steam pressure controller.

MODEL	LDSWE-10	LDSWE-15	LDSWE-11	LDSWE-118
SERVICE	sour	sour	sour	sour
SIZE	42in.×15 ft	42in.×15ft	48in.x18ft	48in.×18 ft
FLOW LINE PRESSURE	5000 psig	10000 psig	10000 psig	15000 psig
VESSEL PRESSURE	250 psi	250 psi	250 psi	250 psi
CHOKE SIZE	3/4"	3/4"	3/4"	3/4"
WELL FLUID INLET SIZE	3/4"	3/4"	3/4"	3/4"
WELL FLUID OUTLET SIZE	3/4"	3/4"	3/4"	3/4"
STEAM INLET/OUTLET SIZE	2"	2"	2"	2"
RELIEF SET PRESSURE	As Vessel Pressure			
SKID DIMENSIONS	20ft.X6ft.X8ft.	20ft.X6ft.X8ft.	20ft.X6ft.X8ft.	20ft.X6ft.X8ft.
CODES& STANDARDS	NACE MR0175;API;ASME;ANSI;DNV(for offshore);ISO			

WATER BATH HEATER

General description: Water Bath Heaters are designed to heat high pressure fluids and gas coming from the well or pipeline. Water bath heaters (water jacket furnace) used in oil and gas industry for heating medium of the pipeline to prepare for further technology needs. It also called indirect bath heater. The configuration of the heater may differ depending on the process application. Usually, the heater consists of main body with coil tubes, burner, fire-tube and flue stack. Sometimes skid may consider an expansion tank.

The main body refers to the basic vessel into which the fire-tubes and process coils are inserted from opposite ends. The burner ignites the fuel gas or fuel oil and blow it into fire-tube to heat the water in the vessel, and the hot water heats the medium in the coils such as crude oil or raw natural gas. The process coils are "bathing" in the water, and that's why it's called a water bath heater.

The heater shell has two saddle types supports, which is cuboid form and mounted on skid or special-designed bases. Outlet temperature may vary, but usually don't exceed 86-88 ˚C.

PRODUCT ADVANTAGES

- Sour medium;
- Heavy fouling medium;
- Salty medium;
- Specified kind of burner and fuel as per client requirements;
- Specified kind of control;
- Remote automation and control;
- Skid-mounted or trailer-mounted

HEATER TREATER

PRODUCT DESCRIPTION:

A heater treater is a pressure vessel that uses heat and residence time to separate clean, dry oil from incoming fluids. It usually is located immediately downstream of the Free Water Knockout during the oil dehydration process. The heat allows for easier separation of the oil and water and also allows solid particles such as sand and corrosive products to settle out. The quality of the effluent oil is measured with a bulk sediment and water (BS&W)probe.There are two separate sections in a heater treater, the heating section and the treating section. The heating section is where fluid is received and heat is applied. Heat can be applied with a burner or steam coils. The heat causes the viscosity of the oil to drop and flow through the water phase easier. At the boundary of the heating section, there is an internal weir that directs flow to the treated section. In the treating section, a lowered oil viscosity and residence time cause the oil to separate from the water. Gas from the process stream collects in the top portion of the vessel and exits the vessel through a nozzle designed to hold back pressure on the vessel. Water from the stream exits through the bottom of the vessel. The water is then sent to further processing to remove any additional bulk sediment or trace oil particles. Following this, the water may be filtered and softened for use in steam generation or water injection. Oil is collected from a weir box near the top of the vessel. Oil discharge may be flow controlled by a control valve or might dump with the assistance of an on/ off control valve. At this point, the oil should of sufficient quality for sale and it is is either transferred directly to a LACT Unit or a holding tank.

SHELL AND TUBE HEAT EXCHANGER

Shell-and-tube heat exchanger is widely used in upstream and downstream equipment for efficient heat transfer from one medium to another. The heat exchanger is divided into parallel flow and counter flow according to the flow arrangement. Parallel flow and counter flow. Parallel flow (common flow) is the flow generated when two fluids enter the exchanger at the same end and flow to the other end in parallel. Counter flow refers to two kinds of fluid from opposite ends into the exchanger.

The purpose of the heat exchanger may vary depending on the process requirements, such as hot and cold liquid, heat recovery, separation, reboiler, condensation.

The basic types of shell and tube heat exchanger are: fixed tube sheet, floating head and U-tube.

MODEL	LDSWE-15	LDSWE-15	LDSWE-11	LDSWE-118
SERVICE	sour	sour	sour	sour
SIZE	42in.×15 ft.	42in.×15ft.	48in.x18ft.	48in.×18 ft.
FLOW LINE PRESSURE	5000 psig	10000 psig	10000 psig	15000 psig
VESSEL PRESSURE	250 psi	250 psi	250 psi	250 psi
CHOKE SIZE	3/4"	3/4"	3/4"	3/4"
WELL FLUID INLET SIZE	3/4"	3/4"	3/4"	3/4"
WELL FLUID OUTLET SIZE	3/4"	3/4"	3/4"	3/4"
STEAM INLET/OUTLET SIZE	2"	2"	2"	2"
RELIEF SET PRESSURE	As Vessel Pressure			
SKID DIMENSIONS	20ft.X6ft.X8ft.	20ft.X6ft.X8ft.	20ft.X6ft.X8ft.	20ft.X6ft.X8ft.
CODES& STANDARDS	NACE MR0175;API;ASME;ANSI;DNV(for offshore);ISO			

SURGE TANK

Surge tank is a part of well test system, which is used to complete the secondary separation function after the well test separator, and to store the liquid and gas produced by the test separator. According to the requirements of well testing personnel, surge chamber can be divided into single chamber and dual chamber. In well testing, the pressure regulating vessel is usually composed of pressure vessel (usually sour/acid equipment), sight glass (level indicator), pressure and temperature indicator, pressure relief valve, level alarm system and skid. Some customers may require pressure control valves as part of the skid valve and piping. In some areas with high wax content, the vessel of surge tank is designed with steam heating coil to ensure proper temperature for further oil transportation. The frame (skid frame) of surge tank is required to be designed according to DNV standard and approved by this agency in some operation areas.

The surge tank is filled with liquid from the test separator and further transported to the metering tank or directly to the flare for further processing. Different from the gas of the test separator, the gas from the pressure regulating vessel is usually treated through the exhaust pipe, which is installed far away from the operator to avoid casualties.

On offshore platforms, the pressure regulating tank replaces the atmospheric pressure gauge tank and shall meet the requirements of DNV and local certification. The pressure vessel is designed according to ASME standard with ANSI flange connection.

Surge tank is a part of well test system, which is used to complete the secondary separation function after the well test separator, and to store the liquid and gas produced by the test separator.

On some offshore platforms, the pressure regulating tank replaces the atmospheric pressure gauge tank and shall meet the requirements of DNV and local certification. The pressure vessel is designed according to ASME standard with ANSI flange connection.

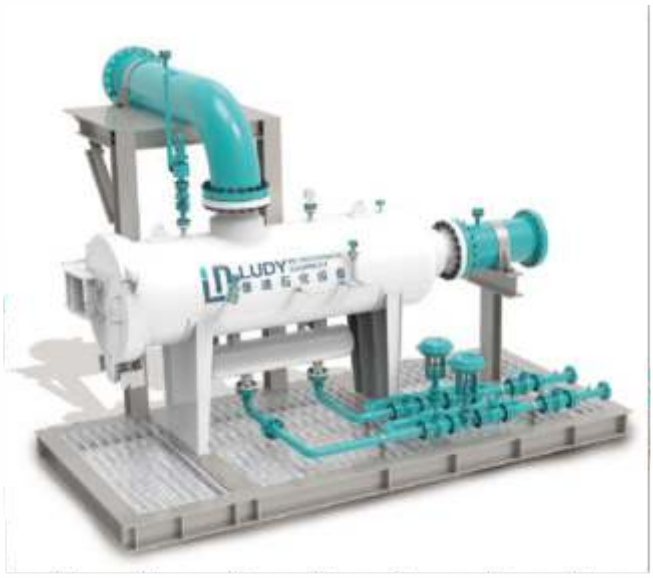
MULTI-CYCLONE SEPARATOR

Multi-cyclone separator is an important device that removes solid particles and liquid droplets from the feed gas to protect subsequent equipment or extend the service life of filter elements in subsequent vessels or meet certain process requirements.

The multi-cyclone separator produced by Jiangsu Ludy Petrochemical Equipment is designed to remove 100% of all liquid particles of 8.0μm and above, as well as 100% of all solid particles and 99% of 5-8μm and liquid particles when operating under design conditions. No more than one tenth of a gallon of entrapment liquid per MMscf gas is allowed to pass through the outlet when operating under the pressure and flow parameters specified by the plant.

PRODUCT ADVANTAGES:

- Wear-resistant material: made of alloy steel of cyclone separator and 316 stainless steel can also be provided;
- Low maintenance cyclone elements with self-cleaning; only regular drainage is required to remove the collected materials;
- No washing oil or liquid is used;
- Larger flow range compared with the centrifugal separator;
- Large capacity with each design scheme; options are single layer, double layer, vertical and horizontal. Cyclone separator elements are available in two sizes;
- To determine the size according to the application to achieve the optimal flow rate of each cyclone tube;
- Optional cyclone speed reducer to keep the internal speed at the specified level, so as to achieve the highest efficiency in the production range of various processes;
- Cost-effective, efficient solid-liquid removal, guaranteed performance and maintenance free.



NATURAL GAS FILTER SEPARATOR

Natural gas filter separator is an important equipment for natural gas separation and dust removal. It is widely used in natural gas gathering and transportation pipelines and various gas stations. It is used to separate liquid, fine solid, dust and other particles in gas. Like other gas-liquid separators, gas filter separators can be horizontal or vertical; the most common type is horizontal. If there is a large amount of water in the incoming gas, the structure of the filter separator is designed to have a "guide" at the bottom of the separator, which is connected by two parallel pipes. Separation of hydrocarbons (oil) and water by precipitation requires a retention time of 3~5 minutes. The size of each part of the filter separator depends on the calculation and design of the manufacturer or engineering company.

The natural gas filter separator is composed of coalescence filter and demister in its vessel. It usually has the function of quick opening and closing, which is used for the maintenance and replacement of filter.

When the droplet diameter is less than 3μm, filter separator and coalescence filter are required. Natural gas filter separator is widely used in gas pipeline and gas treatment plant. For example, in an acid removal unit, the filter separator can capture liquid and concentrated hydrocarbon from the absorption tower after passing through the filter. In the process of gas treatment, sufficient import separators and filter separators are needed to prevent bubbles from chemical contamination. If the absorption tower is located downstream of the amine unit, glycol unit or compressor, a filter separator is required. In addition, the filter separator and coalescence filter are used to prevent the fine mist from entering the absorption tower.

The solid removal rate of the filter separator will be 100% when the solid particle size is 3μm and above;

The solid removal rate of the filter separator will be 99% when the solid particle size is 0.5-3μm; The liquid removal rate of the filter separator will be 98%when the particle size is 8μm and above. The efficiency of natural gas filter separator depends on particle size, distribution and liquid loading.

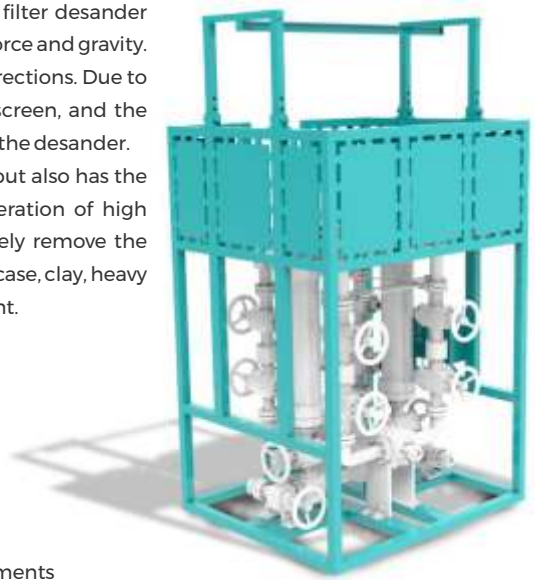
WELLHEAD CYCLONE DESANDER

Wellhead cyclone desander is used to remove sand and solids from well fluid, which is an important device for desanding and downstream equipment. It uses centrifugal force (axial) and gravity to separate solids. Cyclone desander is the first surface desander in which gas and fluid comes into contact with surface equipment after wellhead X-mas tree.

Wellhead cyclone desander is suitable for flow pressure between 1440psi and 15000psi. We design desander and accumulator according to ASME and API standards. The cyclone desander uses special swirl inserts made of stainless steel, special dual phase steel, tungsten carbide or other reinforced coatings to ensure longer service life. The desander inserts can be replaced after bing used up. The replacement depends on the operation cycle, operation time and the volatility of working medium. The construction materials of desander vessel, sand accumulator, pipeline and valve are usually carbon steel, and other special materials can be provided according to customer requirements and fluctuation of working medium. We conduct process calculations to ensure that the desander processes the given flow from minimum to maximum, and we perform mechanical calculations to ensure that the construction can withstand pressure and temperature under working and environmental conditions. Piping and instrumentation design ensures proper flow guidance and control. Desanders are usually equipped with instruments such as pressure gauges, thermometers, differential pressure gauges and other probes and transmitters according to customer requirements. Optional functions of the desander include sand probe and transmitter. Skid is made of carbon steel, which is convenient for transportation and installation of cyclone desander. Some offshore oilfield service companies may require DNV certification of skid-mounted equipment and additional requirements for space saving of desander steel structures. We ensure that the desander is manufactured in accordance with customer's requirements for process, space, working and environmental conditions, etc.

The wellhead cyclone desander and other sand and solid management equipment designed and manufactured by Ludy Petrochemical can guarantee high-efficiency mechanical performance and solid separation rate. Please feel free to contact us if you have any enquiry or technical assistance regarding cyclone desander.

Filter desander is an efficient well head desander designed to remove sand and other solid particles from well effluent to prevent downstream equipment corrosion and extend the life of well test equipment. It is mainly used for post-fracturing sand well cleaning and maximum sand free rate testing. The filter is usually located
downstream of the SSV and upstream of the choke manifold. Our dual-port filter desander separates and removes solid particles according to the principle of centrifugal force and gravity. After the outflow hits the baffle and enters the desander, it is refracted in all directions. Due to centrifugal force and gravity, the solid particles settle to the bottom of the screen, and the filtered liquid is discharged through the annular space between the screen and the desander.
The equipment can not only achieve the same effect as the imported device, but also has the effect of sulfur and acid prevention. It is suitable for the sand removal operation of high pressure, high production and acid bearing oil and gas wells. It can effectively remove the harmful solid debris such as fracturing sand, formation sand, ejection cartridge case, clay, heavy oil and other objects that affect surface transportation, testing and measurement.



PRODUCT ADVANTAGES:

- Pressure range: 5Mpa-140Mpa
- Max. working fluid temp.: 120˚C
- Ambient temp.: -40˚C-70˚C
- Min. storage temp. for the unit: -50˚C
- Operating medium: oil, gas, water
- Max. inner diameter of desander: Customized according to customer requirements
- Inlet and outlet sizes: Customized according to customer requirements
- Desander volume: ≥46L
- Natural gas processing capacity: ≥1.5 million cubic meters/day

FILTER DESANDER

Cyclone desander is a wellhead desander used for surface equipment testing. It can provide effective and reliable separation of sand and solid from hydrocarbon and water in the early life (well cleaning) or production life (recovery of formation sand). According to the working principle of the rapid rotation of solid particles in the desander, the unit should be placed as close as possible to the wellhead (upstream of the choke manifold) to remove solids from high- speed wastewater before further processing of the fluid. During operation, the whole well flow is sent to the desander. In the separator, centrifugal force, centripetal buoyancy and fluid resistance are separated in the cyclone separator. The separated solids fall into a reservoir for separation, decompression and flushing. Performance depends on outlet conditions such as particle size distribution, outlet density versus particle, outlet viscosity and inlet velocity.

PRODUCT ADVANTAGES:

- Simple structure, high sand removal rate, small occupied area and easy installation;
- Simple operation, low maintenance cost and less investment;
- Can be used for high temperature, high pressure and corrosive gas, and can recover dry particles;
- In the process of uninterrupted oil supply, the sand in the oil can be removed for continuous operation;
- Medium pressure loss, small power consumption, can be used in various materials manufacturing;
- Large capacity and stable operation;
- Small in size, space-saving and convenient transportation;
- Economically and effectively protect downstream equipment from erosion and avoid secondary pollution;
- Can be customized according to actual needs.

Model	Intake Pressure	Average Sand Removal Rate	Air Inlet	Air Outlet	Sand Outlet DN 1/2
	MPa	%	DN	DN	mm
LD-1	< 35	>95	65	65	32
LD-2	< 70	>95	65	65	32

CYCLONE DESANDER

Gauge TANK

Gauge tank is a vessel designed for temporary storage of crude oil after separation of separator and surge tank, which is used for onshore and offshore well testing. Atmospheric pressure gauge is a part of well testing system, which is mainly used for measuring separator flow and calibrating liquid metering instrument. Atmospheric storage tank has crude oil inlet and outlet. Oil enters from the surge tank and is discharged by the oil transfer pump.

The barometer storage tank is composed of mandatory vessel to ensure proper storage, a visual level gauge to control the oil level, a flame arrestor on each vent of the vessel, a grounding strap, and a shear roof to prevent overpressure of the vessel. Nowadays, in offshore well testing operations, gauge tanks have been seldom used and are replaced by surge tanks. In addition, the level tank should not be used where H2S is hazardous to operators.

Our atmospheric gauge tanks are designed and manufactured for various volumes and pressures.

LD Model Number	LDWT-GT-100	LDWT-GT-210	LDWT-GT-500
Capacity	100 bbl	210 bbl	500 bbl
Compartment numbers	Single	Dual	Dual
Service	General	General	General
Pressure	150 psi	150 psi	150 psi
Working Pressure	Atmospheric	Atmospheric	Atmospheric
Inlet	3 inch ANSI 602 WECO	3 inch ANSI 602 WECO	4 inch ANSI 602 WECO
Outlet	3 inch ANSI 602 WECO	3 inch ANSI 602 WECO	3 inch ANSI 602 WECO
Drain	3 inch ANSI 602 WECO	3 inch ANSI 602 WECO	3 inch ANSI 602 WECO
Code	API/ANSI	API/ANSI	API/ANSI
Weight	7000 lbs	12100 lbs	21100 lbs

The structure of the tank is atmospheric pressure double chamber rectangular tank. The inlet and outlet of the double chamber are equipped with bypass manifold. Each cabin in the front is equipped with a level gauge, and the rear of each compartment is equipped with a cleaning manhole. Meanwhile, there is a manhole on the top of each compartment. At the same time, the flame arrester outlet converges into an overflow pipe, which can be connected outside the safety area.

CHOKE MANIFOLD

Choke manifold is the supporting device of hydraulic BOP, which is the main equipment to control blowout and pressure of oil and gas well. Through the choking effect of choke valve, the well killing operation is carried out to replace the contaminated mud in the well. Meanwhile, the wellhead casing pressure and riser pressure are controlled to restore the pressure control of mud liquid column on the bottom of the well and prevent overflow. Through the pressure relief function of choke valve, the wellhead pressure can be reduced and "soft shut-in" can be achieved. The wellhead casing pressure can be reduced and the wellhead blowout preventer group can be protected through a large amount of relief effect of blowout valve.

- Main components: choke valve, gate valve, pipeline, pipe fittings, pressure gauge, etc;
- Three kinds of choke valves: manually adjustable, fixed and hydraulic;
- Two kinds of gate valves: manual or hydraulic;
- Can be equipped with hydraulic control box to realize remote control.

Executive Standards	API Spec 16C,NACE Mr0175
Rated Working Pressure	1000psi-20000psi
Nominal Diameter	2-1/16"-4-1/16"
Material Grade	AA,BB,CC,DD,EE,FF
Temperature Class	L,P,R,S,T,U,V
Performance Level	PR1-PR2
Product Specification Level	PSL1-PSL4
Working Medium	Oil, Gas, Mud
Working Temperature	-46℃~121℃(LU)

Emergency Shutdown (ESD) Console is a particularly important component of surface well test system, as ESD console supplies hydraulic force to emergency shutdown valves to close flow line instantly if emergency like high pressure or high temperature occurs during well testing and production.

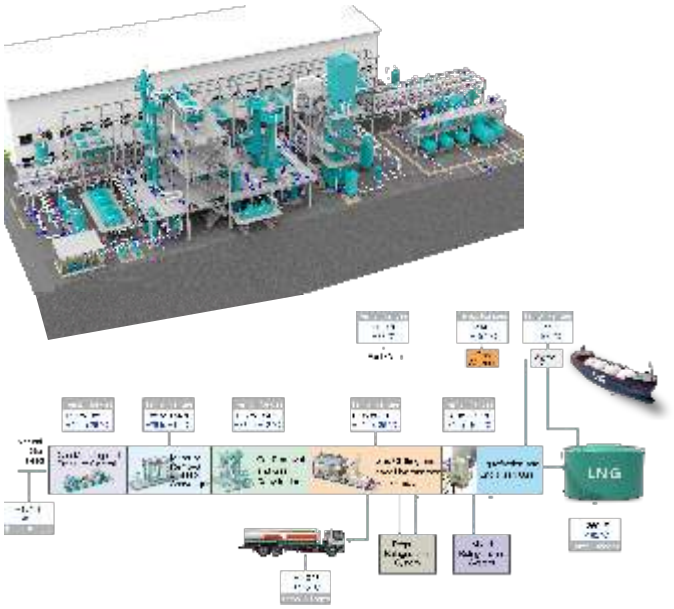
ESD console or ESD control panel consists of several components like air-driven hydraulic pump, pilot valves, check valve, strainer, SS liquid tank with indicator, pressure indicators, needle valves, regulators flow control valves, push button, regulator, ball valves, cylinders, and other auxiliary components. As a construction material for control panel and station stainless steel usually is used. For convenient transportation and operation, HC can design special skids with lifting lungs made from carbon steel.

Current flowchart shows how ESD Control Panel connected with components of surface well test systems. Emergency fail-safe valves requires hydraulic force to keep valves open during operation, so hydraulic force is constantly supplied to valves from ESD console by hydraulic hoses. Pressure pilots are installed downstream of choke valve on data header or line, and another pressure pilots are installed in the pipe manifold of test separator or on separator body to detect sudden increase in pressure (usually up to 1300 psi). After rise in pressure is detected, pilots activate ESD panel to shutdown upstream valves. Also, additional push buttons are installed on the back and head of test separator skid allowing operator to shutdown flow line immediately.

ESD Control Panel

ESD Control Panel

During well test, flowback and other oilfield operations, Emergency Shutdown System is very important and shall be designed properly using quality and certified components. HC Petroleum Equipment ensures proper design, performance guarantee, cost-effectiveness and immediate technical support when it comes to design and fabrication of oilfield hydraulic systems, such as well test ESD systems. Feel free to contact HC Petroleum Equipment for more technical information and quotation for ESD control panels, as well as complete emergency shutdown systems.



LIQUEFIED NATURAL GAS (LNG)

LNG, namely liquefied natural gas, is a gas that is cooled to -260˚F(-165˚C) and converted into liquid. When natural gas exists in liquid form, it takes up about 1/600 the space of gaseous state, which makes transportation more efficient and economical.

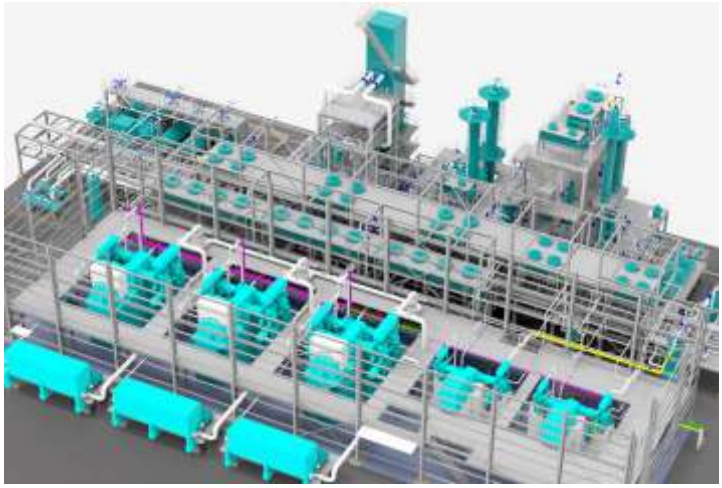
Applicable working conditions and application fields of natural gas liquefaction plant

u Applicable working conditions:

- Applicable air volume: 1×104 Nm3/d → 500×104 Nm3/d
- LNG temperature can be as low as -165 ˚C
- Applicable air source pressure: normal pressure →10 Mpa

u Application fields:

- Associated gas liquefaction in oil & gas fields
- Shale gas liquefaction
- CBM liquefaction
- Coal-to-Natural gas Liquefaction
- Pipeline natural gas liquefaction

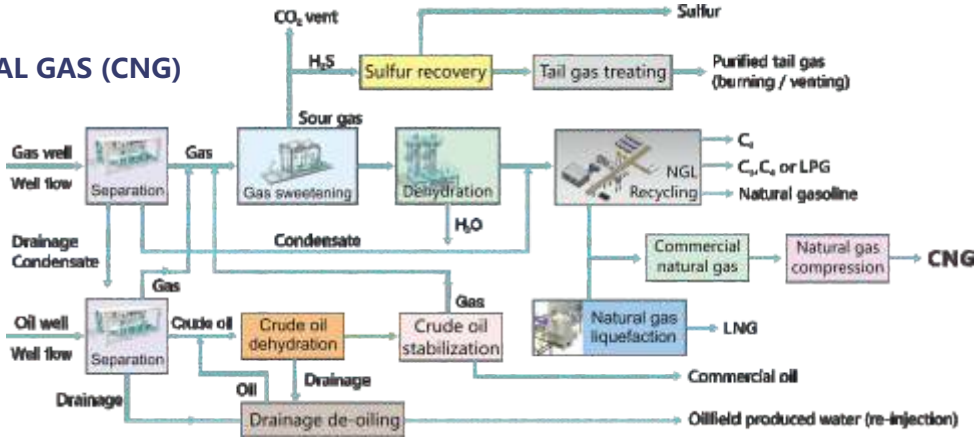


The Process of Natural Gas Liquefaction Plant

The process of natural gas liquefaction plant basically includes pretreatment (purification), liquefaction, storage, loading and auxiliary systems, etc. The main process flow includes natural gas purification and liquefaction process. The process and control composition of general liquefaction plant is as follows:

u - Feed gas filtration
u - Feed gas acid- gas removal
u - Feed gas drying & mercury removal
u - Liquefaction and heavy-hydrocarbon removal
u - Refrigeration
u - Refrigerant supplement
u - LNG storage & loading
u - BOG gas
u - Heavy-hydrocarbon storage & fuel gas
u - Utilities & auxiliary facilities
u - Computer Data Acquisition & Monitoring System (SCADA)
u - Safety Instrumented Systems (SIS)
u - Electrical System
u - Nitrogen Generation System (PSA Nitrogen Generation)
u - Heating System
u - Instrument Air System
u - Water Supply System (circulating cooling water unit, desalinated water unit) u - Fire Water System
u - Fire & Gas System (FGS)
u - Video Surveillance System (CCTV)
u - Flare System

COMPRESSED NATURAL GAS (CNG)



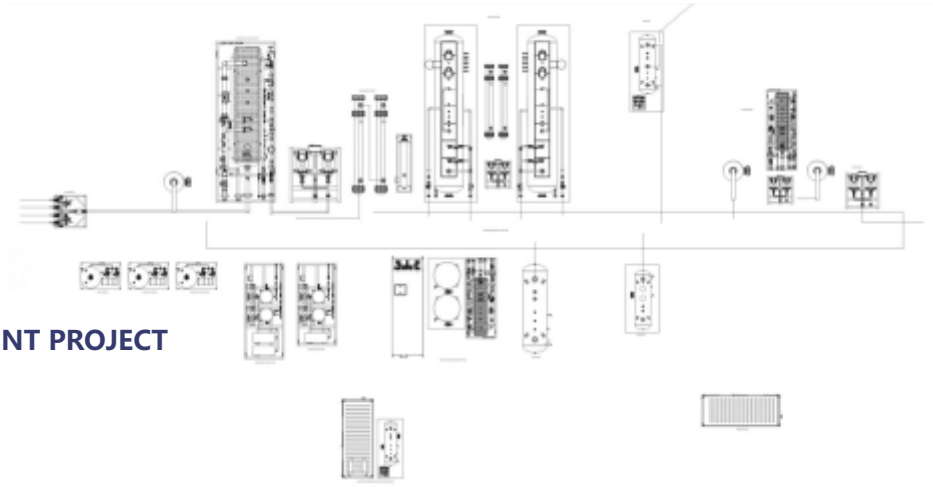
(CNG for short), is a gaseous natural gas compressed to a pressure greater than or equal to 20MPa and not greater than 25MPa. At temperatures higher than -82.5°C, no matter how much pressure is added, methane will not liquefy. In order to store more gas or reduce the size of gas storage vessel at atmospheric temperature, only compression can be performed. CNG is natural gas that is pressurized and stored in vessel in a gaseous state.

In addition to natural gas production from oil fields and natural gas fields, compressed natural gas can also be produced using artificial biogas, which is mostly methane. CNG can be used as vehicle fuel. A CNG-fueled vehicle is called NGV (Natural Gas Vehicle).

CNG can also be used to make LNG (namely liquefied natural gas).

Compressed natural gas processing technology

1. Natural gas desulfurization
2. Natural gas dehydration
3.Light hydrocarbon recovery
4. Natural gas compression



CRUDE OIL TREATMENT PROJECT

Small-size crude oil treatment system

Crude oil treatment equipment is designed to separate free gas and bulk water from crude oil and perform deep crude oil treatment according to pipeline or outlet specifications. Due to the different composition of high- quality fluids, the configuration of equipment may vary greatly. Especially when there is a large amount of hydrogen sulfide and salt, special crude oil processing equipment, such as dehydrators, desalter and H2S stripper, may be required. For small flows (2000~4000BPD), LUDY offers mobile trailer-mounted equipment to quickly and easily move equipment from one well to another. LUDY Skid-mounted equipment has been applied in projects at home and abroad to achieve the BS&W value and RVP required for crude oil treatment.

Medium-large size crude oil treatment system

Some crude oil processing facilities can process fluids from multiple oil wells with a total flow of up to 50,000BPD. Such facilities require larger volume equipment, such as multi-stage separation systems, heater processors or desalters, and stabilizer dehydrators. Typically, large crude oil treatment equipment also has a natural gas processing stage, in which the associated gas is separated from the separator, compressed by the natural gas compressor, dehydrated, desulfurized, and then used for outlet, NGL recovery or liquefaction, which is converted into LNG. LUDY is able to provide design and engineering services, as well as manufacturing and services for such equipment that meets the process, performance and safety requirements.

Flare Gas NGL Recovery Unit is designed to recover valuable natural gas liquids (NGLs) from natural gas which would normally be burned by the flaring systems. Flare Gas NGL Recovery Unit, as known as Flare Gas Recovery System (FGRS), allows gas operators to increase profit by selling recovered NGLs, meeting gas pipeline specification, and reduce impact on environment.

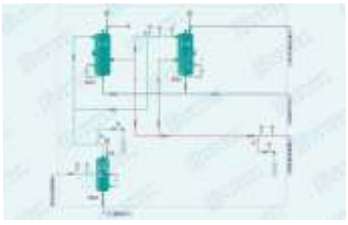
Configuration and price of NGL Recovery Units depends on many factors, such as flow rate; NGL volume in natural gas; pressure; temperature (working & environment); non-hydrocarbons volume in feed gas stream; requirements to final products; special requirements of the clients to configuration; automation and control. Our flare gas liquid recovery units are ideal to handle flare gas, associated gases, low pressure and low flow rate to recover Y-grade NGL, and condition outlet dry gas/lean gas for next disposal. After NGLs are recovered, they are transported by LPG tanks to nearest petrochemical facility, allowing fast investment turnover, maximize profits from operation, and reduce impact on environment.

COMPRESSED NATURAL GAS (CNG)

Product Advantage:

NGL Recovery unit is equipped with reliable and sophisticated control, automation and emergency shutdown system (ESD) to operate continuously and safely from local control panel and through remote operating system.

In case of hydrogen sulfide and other non-hydrocarbon, which is toxic and harmful for process equipment, present in feed gas stream, LUDY also offers H2S Scavenger units for H2S removal, Mercury removal and other gas treating units as part of gas processing systems.

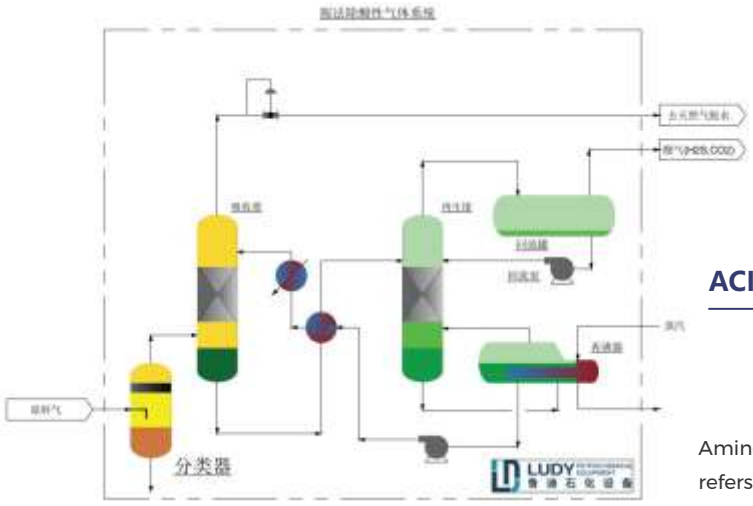


Sour gas sweetening unit is designed to remove hydrogen sulfide (H2S) by adsorption process and handle medium/large amount of natural gas. Gas Sweetening Units of Ludy Petrochemical Equipment is designed to remove effectively and safely hazardous H2S by using adsorption process. Gas Sweetening Unit consists of inlet gas-liquid separator, process columns fixed adsorbent bed, end gas filters, sampling ports, instruments, valves, safety devices, operating platforms, and other components specified in Ludy's proposal.

Working Principle:

Ludy Petrochemical Equipment offers a variety options for hydrogen sulfide removal adsorbents. We use quality H2S adsorbents, such as iron-based solid H2S scavenger, activated carbon and other adsorbents specified in our product catalogue. Our design solutions range also includes molecular sieve gas sweetening units and amine sweetening units, which are alternative to high flow gas desulphurization. The main advantages of our Solid Bed Scavenger are high cost effectiveness, short delivery time and guaranteed process performance. Compared with molecular sieve and amine treatment processes, our solid bed scavenger requires the lowest operating cost. However, some process selection depends on operating conditions, such as H2S concentration in natural gas, natural gas flow, and customer preference for process flow. As one of the leading and qualified suppliers of natural gas desulfurization equipment in China. Our technical team is composed of senior process engineers, chemical engineers, mechanical engineers and electromechanical engineers, can provide you with the most advanced solutions.

SOUR GAS SWEETENING UNIT



ACID GAS REMOVAL UNIT

Amine gas treatment, also known as acid gas removal, refers to a system that uses aqueous solutions of various alkylamines (usually referred to as amines) to remove hydrogen sulfide and carbon dioxide from gases. It is a commonly used unit process in refineries, but also in petrochemical plants, natural gas processing plants and other industries.

SOUR GAS SWEETENING UNIT

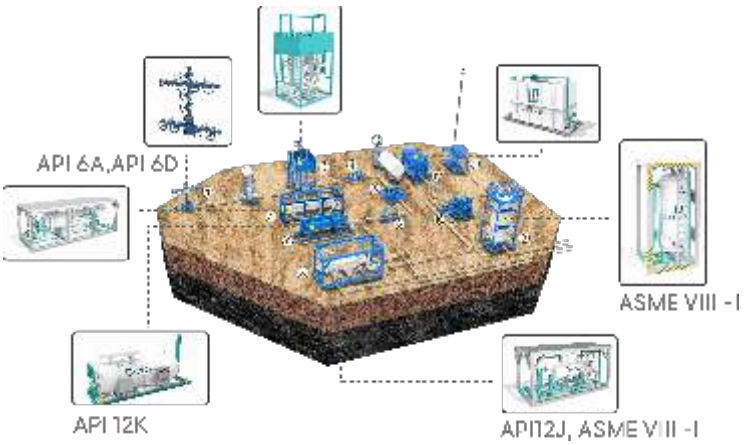
LUDY Petroleum Equipment offers a gas dehydration solution by molecular sieve technology for natural gas treatment and processing. Gas dehydration by molecular sieve is industry-proven process, which offers effective water vapor removal from natural gas stream. In natural gas processing and gas transportation, it is important to remove water vapor to avoid formation of hydrates, corrosion of equipment, and over saturation of natural gas. Molsieve- based dehydration packages are widely used in LNG plants, NGL recovery plants, gas transportation, gas utilization and other process needs. To remove water from natural gas, LUDY Petroleum Equipment offers molecular sieve gas dehydration units. LUDY offers in-house design and manufacturing for molsieve- based gas dehydration units along with other gas processing equipment.

Working Principle:

Molecular sieve or mol. sieve process is a very mature technology in gas treatment and processing, mol. sieve gas dehydration units consists of two, three or more columns filled with solid adsorbents, gas filters, and other associated regeneration equipment. Special solid desiccant, zeolite, is placed in columns. Wet gas (water-rich gas) comes in contact with zeolite, and special structure of zeolite captures water in its porous structure. After inlet gas is dehydrated, it becomes dry gas, and dry gas is discharged to utilization or processing. Dry gas is used for utility purposes of oil & gas facility, gas turbines, compressor station (booster compressor station), export, LNG. After dehydration, dry gas may be sent to NGL recovery, LNG, transported and other process needs.

Product Parameters:

> Mol sieve gas dehydration units remove water vapor from natural gas by adsorption (solid desiccant)
> Mol sieve gas dehydration units are supplied as self-contained skid-mounted systems to reduce site works and ease transportation
> Mol sieve gas dehydration units are custom-made based on the flow rate, water content in natural gas, and other process parameters



SURFACE WELL TEST EQUIPMENT

Surface test process mainly uses the surface test equipment to realize safety control and measure various data. See the attached drawing for the main equipment and process flow. The formation fluid flows through the surface X-mas tree, oil nozzle manifold, data manifold and other equipment to achieve safety control and measure the surface pressure and temperature data. After the fluid is heated by the heater, it enters the separator for three-phase separation. The separated oil, gas and water are measured by their respective measuring instruments. The separated crude oil can be measured in the metering tank (when the output is low), or it can directly flow through the distribution manifold to the burner for combustion. The crude oil measured by the metering tank can be pumped to the burner for combustion by the oil transfer pump. The water separated by the separator can be discharged into the sea (which shall meet the discharge standard) or into the sewage tank. The natural gas separated by the separator directly flows through the distribution manifold to the burner for combustion. In order to ensure the complete combustion of oil and gas during combustion, a blowing fan is also equipped to supply compressed air for combustion and atomization. The burner is also equipped with a cooling water pipeline, which supplies cooling water from the platform to cool the burner.

Through the surface test measuring instrument and data acquisition system, the pressure, temperature, oil, gas, water density, water content, impurities, oil, gas, water production and oil-gas ratio of the fluid after reaching the surface can be measured, and finally the surface test report is provided.

1. Wellhead X-mas Tree
2. Surface Safety Valve
3. Desander
4. Upstream Data Header
5. Choke Manifold
6. Midstream Data Header

7a. Indirect Water Bath Heater 7b. Steam Heat Exchanger
8. Three-Phase Separator
9. Surge Tank/Buffer Vessel 10. Oil Transfer Pump
11. Gauge Tank
12. Oil Tank Truck
13. Flare System

TRAILER-MOUNTED SURFACE TEST EQUIPMENT

PROJECTS

COMPLETED AND ON-GOING SERVICES

PROJECT	Procurement and supply of Instruments valves and fittings.
CLIENT	Roadlamp Nigeria Ltd,
YEAR	2023
LOCATION:	Awoba , Nigeria
STATUS:	Completed

PROJECT	Provision of Engineering Design and supply of valves fittings.
CLIENT	Roadlamp Nigeria Ltd,
YEAR	2023
LOCATION:	Awoba , Nigeria
STATUS:	Completed

PROJECT	Project : Provision of centering, Installation, Alignment of 2 Nos of fire water pumps for west Africa Gas pipelines compression station.
CLIENT	Client: Boab Engineering Services Ltd,
YEAR	2023
LOCATION:	Tarkorodi, Ghana
STATUS:	Completed







PROJECT	Project : Provision of centering, Installation, Alignment of 2 Nos of fire water pumps for west Africa Gas pipelines compression station.
CLIENT	Client: Boab Engineering Services Ltd,
YEAR	2023
LOCATION:	Accra, Ghana
STATUS:	Completed

OUR PAST PROJECTS COMPLETED CONTINUE

PROJECT	Decommissioning and installations of Ekulama 2 surge vessel.
CLIENT	Shomas Engineering services Ltd.
YEAR	2024
LOCATION:	Ekulama , Nigeria
STATUS:	Completed



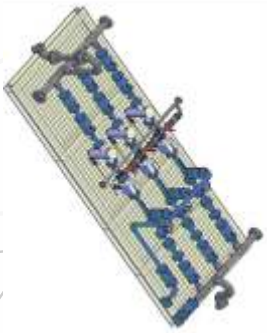






OUR PAST PROJECTS COMPLETED CONTINUE

PROJECT	Project : Engineering and Construction Supervision of Soku Condensate Metering skid.
CLIENT	Vicbriggs Nigeria Ltd.
YEAR	2023
LOCATION:	Sanbarth Manifold, Nigeria
STATUS:	Completed

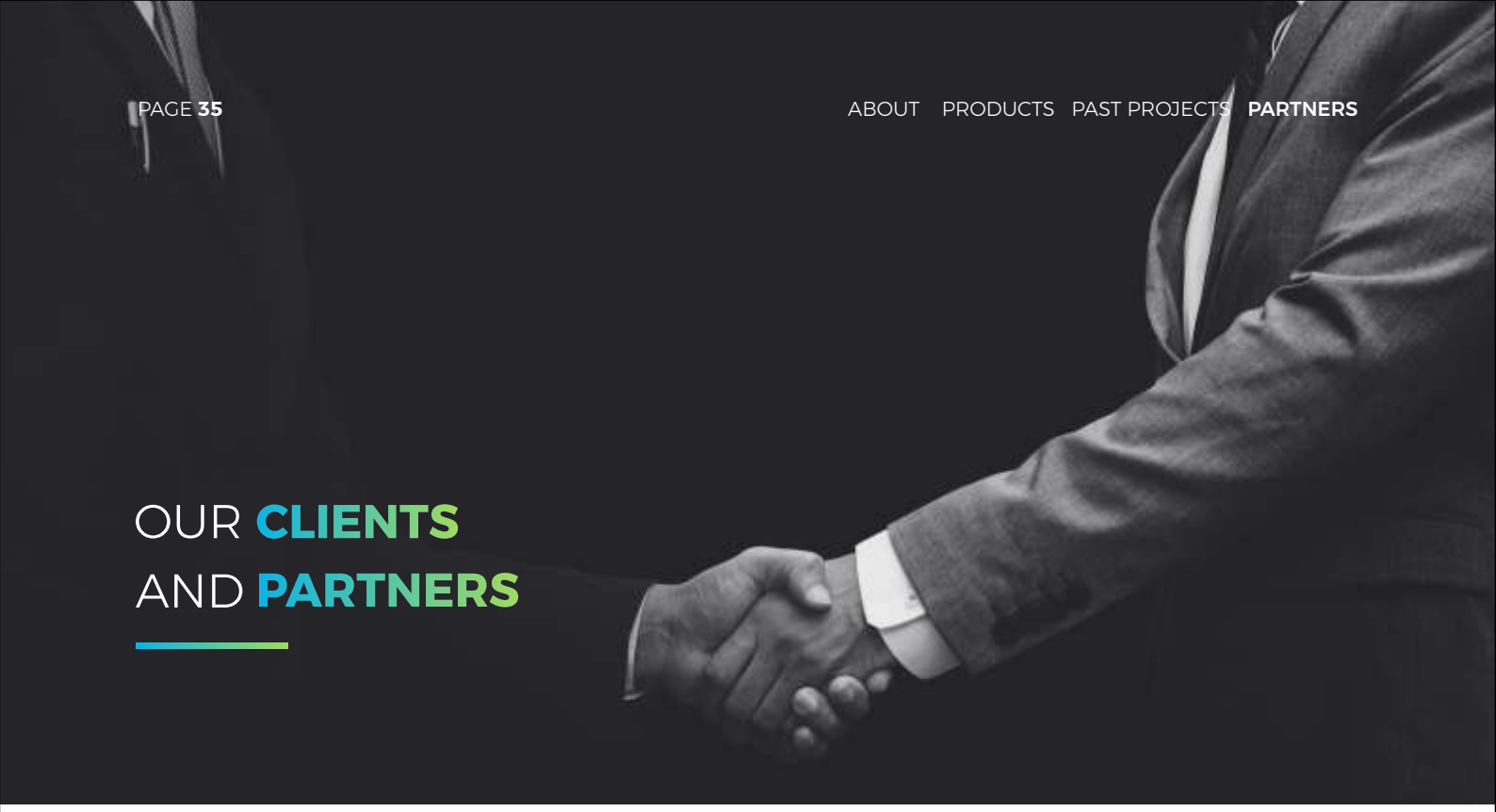


OUR LOCAL PARTNERS EQUIPMENTS IN STOCK









OUR CLIENTS AND PARTNERS

We work continuously with our partners and clients to achieve desired objectives through competency and teamwork. Our hardworking specialists delivered services that well above the customer's expectations.

Our strategic partnership with our partners and clients has propelled us to the top of the service provider rankings.

Innovative & Collaborative

Future OilField Services Limited

Rinceford CONSULTING LIMITED

SESL

roadlamp limited

PickerMan

EROTON EXPLORATION AND PRODUCTION

NNPC

Seplat energy

FORMEN VISIT OUR BOOTH BJ4-04 OSEA AT SINGAPORE 19-21Nov.2024

YONGJIA FORMEN VALVE CO.,LTD

ZGV Int. Dept.

HSCO 湖南申德钢铁有限公司 HUNAN STANDARD STEEL CO.,LTD

HC Petroleum Equipment OILFIELD SERVICE COMPANY

HK Huichuan International Petroleum Equipment Co.,Limited

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