

RC: 628833

CORPORATE PROFILE

Oil and Gas Solutions you can trust

**ENGINEERING, PRODUCTION AND FLOW ASSURANCE
SOLUTIONS**

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1.0 O&G SOLUTIONS NIG LTD

O&G Solutions Limited was incorporated as a wholly indigenous provider of integrated **engineering, production and flow assurance solutions** to operators of oil & gas and hydrocarbon processing facilities. Since its inception O&G Solutions has successfully executed projects for various companies including Moni Pulo Ltd – a leading local operator in the Nigerian Petroleum industry.

In 2007 O&G Solutions Limited established a mutually beneficial technical partnership agreement with **PMAC Systems Limited**-a reputable flow assurance company in the United Kingdom.

Today, as a company, we offer services and products through three (3) business streams. They are as follows:

- **Engineering Solutions**
- **Production Solutions**
- **Flow Assurance Solutions**

O&G Solutions is a member of the British Standards Institute (BSI). **BSI Membership No.: 47223781**



2.0 OUR VISION

To be a leading player in the global oil service business, the preferred and trusted local provider of well and process safety systems, operations, electrical and instrumentation services.

3.0 OUR MISSION

To consistently meet and exceed the overall expectations set by our customers and our own people; to deliver results that substantiate growth; to add value by applying:- superior technology, skill, leadership, knowledge, sound social and environmental responsibility and practices; to support operators in the efficient and safe production of oil and gas reserves.

4.0 OUR CORE VALUES AND CULTURE

O&G Solutions' culture is identified by three core values: **professional service, consistent performance and innovation.**

- We believe our **professional service** will be recognized by excellence in all we do and a determination to surpass our customers' expectations.
- Our people's **consistent performance** will set us apart in our field and ensure the delivery of superior financial results.
- Our **innovation** will prove our constant determination to find new and better solutions to problems.

5.0 OUR SERVICES

We market our services under the following business streams:

- Engineering Solutions
- Production Solutions
- Flow Assurance Solutions

All our solutions are fit-for-purpose.

6.0 ENGINEERING SOLUTIONS

O&G Solutions Ltd **Engineering solutions** is managed under 5 departmental functions namely:

1. **Projects**
2. **Control**
3. **Instrumentation**
4. **Electrical**
5. **Training and Consultancy.**



Our **Project Engineering** services includes:

- Conceptual and Feasibility Studies
- Estimating
- Preparation and/or Review of Technical Specifications
- Tender Evaluation and Preparation
- Purchase Requisitioning and Procurement
- Design, Procurement and Construction Programming
- Project Control, Procedures and Reporting
- Resource Scheduling Cost Control
- Construction Management and Support
- Commissioning
- Compilation of Operation Manuals and QA Documentation

In large or technically complex projects, it is often advisable to have offshore or on-site support from members of the design team during construction, commissioning and start-up. This is quite an essential service as it allows questions to be answered and decisions made on site without delay.

Our construction management and project support team will ensure that these projects meet often difficult deadlines without problems

Control Engineering services:

- functional design specifications (FDS);
- control and sequence programming for PLC / DCS Software;
- well control system design;
- installation supervision and commissioning

Instrumentation Engineering services:

- design,
- procurement services,
- installation and calibration,
- supervision and commissioning services

Electrical Engineering services:

- Area Classification
- Specifications for switchboards, Transformers, Motor Control Centres
- Purchase Orders
- Expediting and Inspection
- Cable Schedules
- Cable Block Diagrams
- Termination Schedules Wiring/Connection Diagrams
- Control Panel layout Drawings
- Control Construction

Training and consultancy services:

O&G Solutions is able to provide classroom based and on-site training for clients' engineers, technicians, operators and new joiners.

Course lists includes: Process measurement and control, Valves and Pipelines, Pumps and compressors, Gas turbine principles and operations

The following is a summary of the various **consultancy services** O&G Solutions is able to provide.

- Feasibility Studies
- Front-End Engineering Design (FEED)
- Conceptual Design
- Detailed Engineering and Design
- Preparation and /or Review of E&I Technical Specification
- Certifying Authority Liaison and Design Approval
- Design Freeze HAZOP
- Procedural HAZOP
- Project Definition HAZOP
- HAZOP of changes
- HAZID
- Quantified Risk Assesment (QRA)
- Fire Risk Assessment
- Construction Risk Assessment
- IPF Classification



7.0 PRODUCTION SOLUTIONS

Our **Production Solutions** range covers both onshore and offshore process facilities including FPF, EFP, MOPU, FPSO. O&G Solutions is able to provide the following services:

- **Operations**
- **Maintenance**
- **Procurement**

O&G Solutions' has maintenance competencies in **electrical, instrumentation and mechanical** disciplines. We are also able to supply experienced production operators, technicians and engineers to meet all your operations needs.

We have trained specialists who can carry out preventive maintenance on Solar or Siemens **gas turbines and generators**.



"Our people and partners understand that every time a customer uses our product or service, the client is making an investment. We therefore ensure that the solution we provide to their needs is an integrated package that completely embraces all the components necessary to make their investment a winning one."

So, whether you are considering new opportunities, assessing new technological options or developing new project plans, make O&G Solutions your partner in well and process control instrumentation.

8.0 FLOW ASSURANCE SOLUTIONS

O&G Solutions flow Assurance solutions is an independent business unit which is run in partnership with PMAC Service Ltd Aberdeen - our strategic cooperation partner.

Our flow assurance services include:

- Pipeline commissioning
- Pipeline cleaning (pigging, de-scaling, de-waxing and de-sanding)
- Pumping Services
- Sand Monitoring Systems
- Cathodic Protection System Design
- Digitized CP Survey System
- CP Inspection Services

PMAC provides a completely integrated service that

- Optimises oil and gas production rates
- Detects erosive material providing early warning of well formation breakdown
- Accurately quantifies solids production during well test, or drilling operations
- Provides on-line data
- Works in oil, water, or gas, and in multiphase flow
- Equipment and services available globally
- Protects topside equipment from erosion



Applications

Reservoir damage, pipe work erosion and deposition of solids are all potentially expensive results of sand production from hydrocarbon wells. Using PMAC erosion/sand probes, PMAC Ltd can detect minute quantities of material loss due to the erosive effects of sand production, enabling pro-active management of the system. PMAC's unique CEION metal loss measurement technology has exceptional resolution and extended sensor life giving high sensitivity to erosion and low cost of ownership. The rate of loss can be used to assess erosion effects or as a component in calculating the volume of solids produced. In the latter case information about the flow must be collected simultaneously.

Visit www.pmacsystems.com for more information.

9.0 LOCAL CONTENT

O&G Solutions Ltd is 100 percent Nigerian owned. We have a workforce which comprises of most engineering disciplines as well as technical and clerical support personnel. Our people have a ‘can do’ mentality and as consultants, we are flexible and always work together with our clients to come up with the best value solution.





Our offices are local to our clients. This allows us to work more closely with clients enabling them make critical decisions quickly.



O&G Solutions Ltd workforce is headed by an all Nigerian senior management team who have extensive experience of the Oil & Gas industry.

10.0 KEY PROJECTS EXECUTED

We have executed several projects for operators in the oil and gas industry, including but not limited to the following:

<p>Project Name and Location:</p>	<p>Design and construction of well control system, Abana West</p>	
<p>Client:</p>	<p>Moni Pulo Limited (Petroleum Development)</p>	
<p>Project Description / Scope of Supply:</p>	<p>Detailed design and implementation of well control panel and SSV local control panel.</p> <p>Scope of supply included:</p> <ul style="list-style-type: none"> • developing SAFE and Cause and Effects charts • General Arrangement drawings • Control Panel Schematic and Hook- up drawings • Bulkhead labels and identification tags. • Producing as-built P&IDs and bulk MTOs for Instrumentation. • Preparation of Instruments Data sheets • Construction and Commissioning. • Operation and Maintenance manual • Project Management Contractor 	

<p>Project Name and Location:</p>	<p>Electrical & Instrumentation Training, Port Harcourt. Rivers State. Nigeria</p>	
<p>Client:</p>	<p>Bayelsa State Government / Kohasa Engineering Ltd</p>	
<p>Project Description / Scope of Supply:</p>	<p>Process measurement and control training course for Bayelsa State Government sponsored engineering graduates. Course content includes:</p> <ul style="list-style-type: none"> • Principles of measurement and control • Process control • Transducer • Emergency Shutdown Systems • Calibration techniques • PLC/DCS applications in automation 	
<p>Project Name and Location:</p>	<p>Fiscal Metering System and Prover Loop, Knock –Adoon FPSO.</p>	
<p>Client:</p>	<p>Moni Pulo Limited (Petroleum Development)</p>	
<p>Project Description / Scope of Supply:</p>	<p>Scope includes</p> <ul style="list-style-type: none"> • Instrumentation Hook-up • Calibration • Test and Commissioning • Meter proving with DPR attending 	
<p>Project Name and Location:</p>	<p>*Design of well control system for 5 new wells.</p>	
<p>Client:</p>	<p>Moni Pulo Limited (Petroleum Development)</p>	
<p>Project Description / Scope of Supply:</p>	<p>Detailed design of well control panels for production wells. Scope of supply included:</p> <ul style="list-style-type: none"> • Detailed design drawings • Instruments Data Sheets. • MTO's for procurement. 	

<p>Project Name and Location:</p>	<p>*Shutdown and control philosophy for 40,000 BWPD Produced Water Re-Injection Package, Agbani Barge</p>	
<p>Client:</p>	<p>Moni Pulo Limited (Petroleum Development)</p>	
<p>Project Description / Scope of Supply:</p>	<p>Scope of supply included:</p> <ul style="list-style-type: none"> • Developed ESD, PSD and Water Injection USD Cause and Effect Charts • Provided Marshalling Cabinet drawings • Produced MCC-Control Room and Field termination drawings. • Marked up as-built P&IDs • Logic design and integration • Approval Authorities Liaison • Project Engineering and Construction interface management • Instruments Data and Specification Sheets. • Provided Instrumentation MTO's for procurement. • Construction and Commissioning supervision. • HAZOP review team leader 	
<p>Project Name and Location:</p>	<p>*Produced Water Re-Injection Metering System Design; Agbani Barge</p>	
<p>Client:</p>	<p>Moni Pulo Limited (Petroleum Development)</p>	
<p>Project Description / Scope of Supply:</p>	<p>Scope of work includes</p> <ul style="list-style-type: none"> • Re-engineering of PWRI meter run. • Piping design and specification • Supervised the construction and commissioning. 	

Project Name and Location:	*HAZOP Study and IPF Classification for Produced Water Treatment Package; Agbani Barge, OML 114.
Client:	Moni Pulo Limited (Petroleum Development)
Project Description / Scope of Supply:	Scope of work done includes: <ul style="list-style-type: none"> • HAZOP study of Produced Water Treatment package • Implement recommended actions from HAZOP Study. • Carry out IPF classification and determine Safety Integrity Level (SIL) for safeguard system. • Develop Cause and Effect charts • Engineer ESD/PSD logic as required • Carry out PLC programming. • Update P&IDs, Control Panel and JB's termination drawings. • Develop Produced Water Treatment Process Mimic on HMI.

*Jobs executed by O&G Solutions engineers working as Consultants to the Expro Group on Moni Pulo - Agbani FPF

11.0 OTHER PROJECTS (IN PICTURES) EXECUTED BY OUR CONSULTANTS



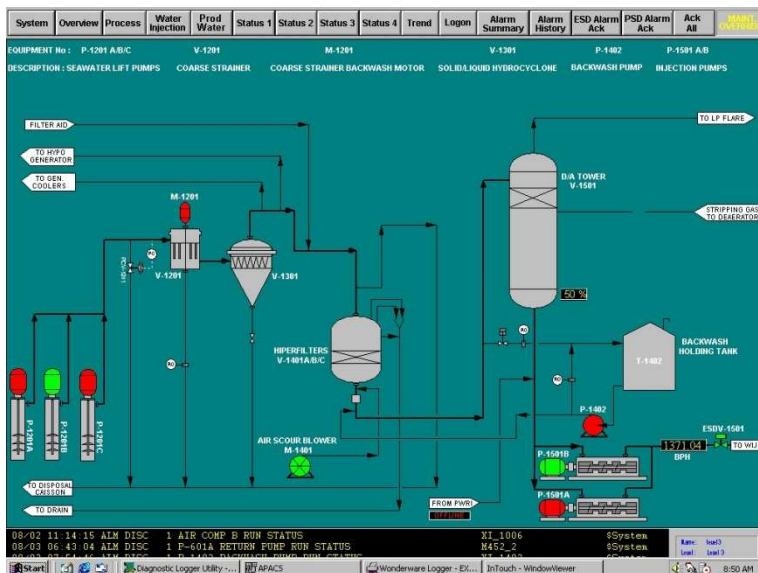
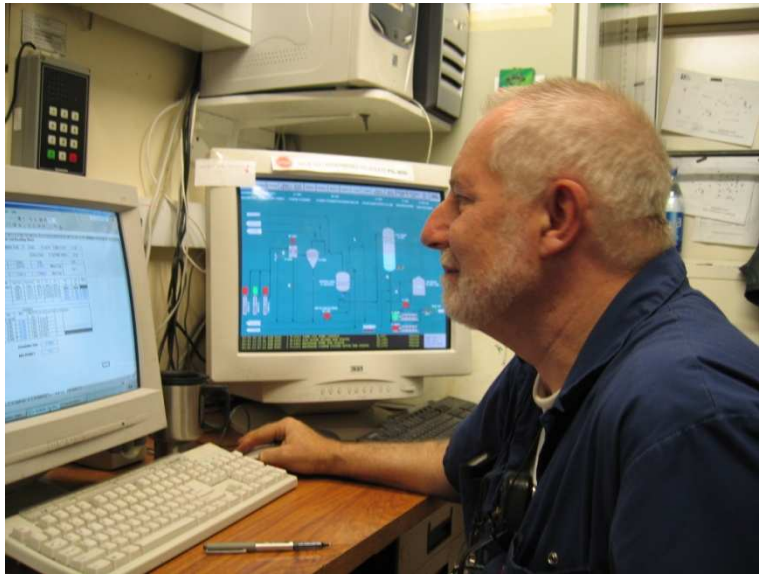
Power Supply Upgrade

Project Name and Location:	PLC I/O Cabinet Power Supply Upgrade
Client:	Moni Pulo Limited (Petroleum Development)
Brief Description:	Photo shows Mastervolt DC-DC Converters each upgraded from 24VDC 10Amps to 24VDC 20Amps in order to accommodate more field output devices.



Backwash Pump LSSL Switch Re-Engineered and Re-Located

Project Name and Location:	Backwash Tank pump Lo-Lo Level switch relocation, Agbani Barge.
Client:	Moni Pulo Limited (Petroleum Development)
Brief Description:	Photos show new LSSL switch located on Backwash Pump Suction pipe work. Original float level switch on the tank was sited at a height below the pump’s suction offering no protection to the pump.



Water Injection System Mimic Screen

Project Name and Location:	Water Injection System Mimic Screen, Control Room, Agbani Barge.
Client:	Moni Pulo Limited (Petroleum Development)
Brief Description:	The photos show Water Injection Process mimic screens including De-aerator Tower level display. Screen is configured with level alarm to facilitate real-time monitoring.

12.0 SYSTEMS SPECIFIC EXPERIENCE

Our system specific experience includes (but not limited to) the following:

DCS / PLCs:	Allen Bradley, Siemens S7, Mitsubishi FX-Series PLC
HMI / Process Mimic:	RS View, Wonderware Vision.
Gas Turbines:	Siemens (Alstom) TB 5000, Solar Saturn
Steam Boiler:	Cochran Dual fuel Burner Control
Water Injection System:	Axia Serck Baker Water Injection Systems
Gas Injection:	Ingersoll Rand Compressors

13.0 ENGINEERING SOFTWARE

Instrumentation Design:	Intergraph Intools, IDesign Office
Electrical Design	Amtech ProDesign25
Project Management	Primavera
CAD	Autodesk AutoCAD 2008
HAZOP:	Isograph HAZOP Plus

14.0 FINANCIAL INFORMATION

Bankers

GT Bank PLC
Plot 279A Tombia Street
GRA Phase II
Off Aba Express Road
Port Harcourt
NIGERIA

Auditors

Hassan Nakpodia & Co. Chartered Accountants,
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15.0 CONTACT US



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