**Summary Descriptions (1 Page)**

1. Asset Integrity Management (Core)

Our Asset Integrity Management (AIM) services ensure that important oil and gas assets are safe, dependable, and compliant throughout their life cycle. We use a wide range of inspection methods, including conventional and advanced NDT techniques, as well as subsea and topside facility inspection equipment, which are backed by corrosion monitoring, 3D digital modelling, and cutting-edge technologies like drones, robotics, and artificial intelligence. With solutions ranging from composite repairs to advanced inspection data management, we give clients the data and confidence they need to manage asset risks and extend operational life, whether onshore, offshore, or subsea.

1. Inspection Services

We conduct data driven inspections that meet or exceed industry standards at all stages of a project or operational life to ensure equipment integrity and availability. From third-party and source inspections to calibration services, we verify that equipment, materials, and processes satisfy specifications before they enter the field. By confirming vendor compliance, observing factory acceptance tests, and ensuring measurement accuracy, we provide the confidence required for safe, efficient, and effective field operations.

1. Engineering & Technical Services

We provide expert engineering and technical solutions that complement inspection activities and support safe, efficient project execution. Our services range from engineering and instrumentation solutions, rope access support to technical procurement and materials consultancy. With advanced capabilities in rotating equipment monitoring and technical manpower supply, we combine engineering expertise with practical field solutions to help clients achieve reliable performance, reduce risks, and optimize costs across operational lifecycle.

**Detailed Descriptions**

1. **Asset Integrity Management (1 Page)**

Asset Integrity Management (AIM) is at the heart of everything we do. It ensures that vital equipment and infrastructure in the oil and gas industry remain safe, reliable, and compliant throughout their lifecycle. Our AIM services combine cutting-edge inspection techniques, corrosion monitoring, and advanced digital technologies to provide clients with confidence in the operation of their assets — whether onshore, offshore, or subsea.

1. NDT Testing Techniques and Equipment

We apply a wide range of Non-Destructive Testing (NDT) methods to identify defects, monitor material conditions, and verify asset integrity without disrupting operations.

1. Conventional Techniques: Traditional inspection methods such as Visual Testing (VT), Ultrasonic Testing (UT), Radiographic Testing (RT), Dye Penetrant Testing (PT), and Magnetic Particle Testing (MT) form the foundation of our integrity programs. These are proven, reliable techniques used daily across the industry.
2. Advanced Techniques: For complex inspections and critical applications, we employ advanced NDT methods such as Phased Array Ultrasonic Testing (PAUT), Digital Radiography Testing (DRT), Thermography, Pulsed Eddy Current (PEC), and Automated Ultrasonic Testing with Ultrasonic scanning capabilities. These technologies allow us to detect hidden flaws, measure corrosion under insulation (CUI), and carry out precise corrosion mapping.
3. Pipeline Inline Inspections: Our pipeline inline inspection services cover the full spectrum of integrity management, starting with internal cleaning to prepare the line for assessment, followed by comprehensive integrity evaluations that include advanced inline inspection, internal geometry inspection, and XYZ mapping. These services provide accurate data on pipeline condition, geometry, and positioning, enabling proactive maintenance, reduced risk of failure, and extended asset life.
4. Eyes on Innovation: We continuously invest in new technologies, including robotics, drones, and AI-driven data analysis, to improve inspection accuracy, reduce downtime, and enhance safety.
5. Facility Inspections – Topside & Subsea

Our facility inspection services cover both topside and subsea assets, ensuring complete coverage across the operating environment.

1. Topside Inspections: We inspect pressure vessels, piping systems, tanks, flare stacks, and structural components to identify wear, corrosion, or mechanical damage. These inspections follow international standards such as API 570, API 653, and ASME codes.
2. Subsea Inspections: Using remotely operated vehicles (ROVs), divers, and specialized NDT tools, we assess subsea pipelines, risers, manifolds, and wellhead systems. These inspections provide critical information about subsea integrity where access is most challenging.
3. Corrosion Condition Monitoring

We use corrosion coupons to give clients a clear picture of how their assets are performing in real operating conditions. We install these small samples inside pipelines or process systems, then retrieve them after set periods to examine the corrosion. The findings help confirm if corrosion protection measures are working as intended and provide valuable insight for planning maintenance. This simple yet effective approach helps clients minimize downtime, avoid costly failures, and extend the life of their assets.

1. 3D Photogrammetry and Metrology

Using advanced 3D photogrammetry and laser scanning, we deliver precise digital models of assets and structures. This service supports dimensional control, damage assessment, and fit-for-purpose analysis. The resulting 3D models allow clients to visualize asset conditions, track changes over time, and plan maintenance or modifications with confidence. We use photogrammetry and laser inspections for the following deepwater facilities:

1. Flex Joint: High Density/Accuracy Point Cloud, 3D CAD Model, Rotation Angle Calculation, Comparison to Theoretical Model and/or Prior Measurements
2. Mooring Chain and Line: High-accuracy point cloud, side bar diameters, general dimensions, grip zone analysis, 3D CAD model, and finite element analysis.
3. Pipe: 3D measurement (outside and inside), high density/accuracy point cloud, 3D CAD model, anomaly characterisation, ovality/cylindricity, and finite element analysis.
4. Composite Repair Solutions

If anomalies are found during inspections, Phenomenal Energy offers stronger than steel composite solutions to restore your pipelines, saving you both time and money.

These low-cost alternatives maintain pipeline and structural integrity without shutting down, welding, or performing hot work.

1. **Inspection Services (1 Page)**

Our inspection services provide clients with reliable, and standards-driven verification at every stage of a project. Whether it is monitoring a vendor’s manufacturing process, verifying compliance at a construction site, or ensuring the accuracy of instruments and equipment, we deliver the assurance needed for safe and successful operations.

1. Third Party Inspection Services

We act as an independent inspection body, ensuring that equipment, materials, and processes meet industry standards, client specifications, and regulatory requirements. Our global third-party inspection services cover:

1. Vendor and manufacturing inspections this may include material verification, welding inspections, dimensional checks, hydrotesting, coating verification, and packaging inspection.
2. Manufacturing expediting services
3. Witnessing of factory acceptance tests (FATs).
4. Review and verification of quality documentation
5. Ensuring equipment compliance with purchase orders, technical specifications, and approved drawings

We provide utilize highly qualified third-party inspectors worldwide, delivering best-in-class inspection services that ensure compliance, quality, and reliable data. This ensures that only conforming products are shipped, reducing costly rejections and delays on site.

1. Calibration Services

Accuracy in measurement is critical for safe operations and reliable inspection results. Our calibration services ensure that instruments and inspection equipment remain precise and compliant with international standards such as ISO/IEC, API. By maintaining calibration integrity in a cost-effective manner, we help clients meet quality system requirements and avoid operational risks due to inaccurate measurements and save costs by preventing rework, equipment failures, and unnecessary downtime.

1. **Engineering & Technical Services (1 Page)**

Our engineering and technical services provide clients with the expertise and support needed to complement project execution and ensure projects are executed safely, efficiently, and to specification. By combining engineering know-how with practical field solutions, we deliver value throughout the project lifecycle — from design, procurement installation and maintenance.

1. Engineering & Instrumentation Solutions

We provide specialized engineering and instrumentation services that support asset performance and integrity, delivering design and integration solutions for piping, process equipment, and control systems. We focus on optimizing system performance, ensuring that all equipment runs safely, efficiently, and in line with operational requirements. Through these services, we bridge the gap between engineering design and real-world field performance.

1. Rope Access Support

When inspections or maintenance must be carried out in hard-to-reach locations, we provide safe and efficient rope access solutions. We have Nigerian Level 1 -3 Rope Access technicians that are also ASNT certified.

1. Materials/Metallurgy Consultancy & Support

Phenomenal Energy is the first Nigerian engineering company to provide comprehensive material, metallurgy, and welding handbooks tailored to any project size. We rigorously analyse material requirements and deliver easy-to-use guides that simplify procurement, minimize fabrication errors, and reduce excess materials. Our cost-effective designs optimize material grades, while our traceability program ensures even “untraceable materials” are managed efficiently — helping clients save money, avoid waste, and meet stringent industry standards with confidence.

1. Rotating Equipment Condition Monitoring

Using AI, IoT, and sophisticated analytics, we offer round-the-clock rotating equipment monitoring. Our system identifies problems, predicts remaining life, and allows for timely corrective action without the need for a human-machine interface. Complex algorithms are used to identify anomalies, describe issues, and keep clients informed via an intuitive online and mobile interface, ensuring reliability and minimizing downtime.