

New West Harbour Flashed Gas Compressor

Owner	Pharaonic Petroleum Company (PhPC)
Client	Pharaonic Petroleum Company (PhPC)
Location	West Harbour, Port Said, Egypt
Year / Status	2025 / Successfully Delivered
Project Type	Concept and FEED Study
Keywords	Brownfield, Gas recovery, Flaring and Emission Reduction, Energy Efficiency

Scope of Work

UNEP was commissioned by PhPC to perform Concept and FEED studies for a new Flashed Gas Compressor (FGC) at PhPC's West Harbour plant to manage gas from the Atoll and Harmattan fields following Ha'py field decline. The scope included data review, process simulations, and Basis of Design preparation to define compressor configuration, operating parameters, and control philosophy. FEED covered process, mechanical, electrical, civil, and control system design, equipment sizing, cost and schedule estimation, and integration with existing utilities and safety systems. Deliverables supported EPC tendering with full compliance to PhPC and international standards.

Technical Challenges

- Tight layout constraints within a congested facility required optimized equipment arrangement.
 - Integration with existing power, utility, and control systems demanded precise interface management.
 - Achieving compression from 6.5 to 90 barg while maintaining high reliability and minimizing downtime.
 - Managing increased power load and controlling flaring to ensure safe, continuous operation.
 - Ensuring full compliance with PhPC and international standards under live plant conditions.

Execution Strategy

UNEP applied a phased, risk-managed strategy focused solely on engineering development through concept and FEED stages. Early coordination with PhPC ensured alignment of design objectives, supported by process simulations, modeling, and cost benchmarking. Multidisciplinary integration, modular design, and strict QA/QC reviews secured compliance, optimized constructability, and ensured readiness for future procurement and execution within schedule and budget limits.

Strategic Outcome

The study delivered an optimized two-stage compressor concept ensuring safe gas recovery and long-term reliability. It provided PhPC with a clear design basis, verified costs, and execution roadmap for EPC. The solution minimizes flaring, improves efficiency, and supports integration with future developments—reinforcing UNEPP's capability in brownfield gas compression and emission reduction projects.

Photos / Diagrams

