

## KEY PROJECTS LIST

Project Title	Client Name	Project Description	Manhours	Completion Date
<b>Engineering Consultancy Services for Plant Change Requests and Miscellaneous Engineering Support Services for QP various locations (FIELD SUPPORT - DUKHAN)</b>	QP	<b>A multiple project for the provision of engineering consultancy services for plant change requests and support services in the State of Qatar.</b> Services include the execution of Technical Studies, Conceptual Designs, FEED, HAZOP Study, Performance Assessment Report of Equipment & System, Basic Engineering Drawings, and Manpower, Material Cost Estimate etc. for Civil & Structural, Electrical (HV & LV), Mechanical (Piping & Pipeline), Pressure Vessels, Heat Exchangers, Instrumentation & Control System, Fire & Gas Detection System, Telecommunication, Architectural & Landscaping, HVAC, Rotating Equipment and Process.	67,6750	Under Execution
<b>Provision of Construction Services</b>	SHELL	<b>Forming part of an approved panel of contractors to provide services for the construction and pre-commissioning of plant changes and projects for Pearl GTL production facilities in Ras Laffan Industrial City, including its off-plot facilities such as harbor tank farms, offloading jetties and interconnecting infrastructure.</b>	133,120	Under Execution
<b>Engineering Services</b>	QATALUM	<b>Provision of services for engineering / design for all required disciplines, procurement of materials related to all required disciplines (Process, Civil / Structural, Mechanical, Piping, Electrical, Instrumentation etc.), construction management and supervision as well as as-built drawings preparation.</b>	19,200	Under Execution
<b>Al Udeid Blatchford Preston Complex</b>	AMEC	<b>Construction of two new billet buildings for the Al Udeid Blatchford Preston Complex.</b> Services include Mechanical, Electrical & Plumbing works.	-	Under Execution
<b>Maintenance works of Non-Shutdown Sensitive Static Equipment for Gas Operations, Mesaieed</b>	QP	<b>Provision of maintenance to non-shutdown sensitive static equipment for gas operations in Mesaieed.</b> Services include spading and de-spading, insulation removal and replacement of insulation, opening up, cleaning, mechanical works, closing, testing, painting lining and other miscellaneous works as directed by QP.	130,800	Under Execution
<b>EPIC of Ammonia Recovery &amp; Ammonia Flare Systems in Ammonia 1 &amp; 2 Plants</b>	QAFCO	<b>Installation of ammonia flare systems and flash tank for two plants.</b> Services include design, engineering, procurement, quality assurance, inspection, fabrication, supply, construction / erection, installation, testing, pre-commissioning and commissioning, performance testing, training and project management of Ammonia Recovery & Ammonia Flare Systems in Ammonia - 1 & 2 Plants.	405,500	04/03/2014

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Project Title	Client Name	Project Description	Manhours	Completion Date
<b>EPIC of Changing Manual Valves on Deluge System to Automatic (MOC-128)</b>	<b>ORYX GTL</b>	<p><b>Detailed engineering design, procurement, installation, pre- commissioning and commissioning of Changing Manual Valves on Deluge System to Automatic (MOC-128).</b></p> <p>Services include installation of 4 new remotely operated Deluge Valves both from the control room &amp; local fire panel, piping modification inside the valves pits, flame CCTV system with flame detectors, its cabinets in RIB 1 &amp; 2, Patch Panel in Equip/Telecom, DCS/F&amp;G hardware, Equipment Room (MCR) and configuration works, flame / heat detectors, cables trays, laying of primary and secondary cables, UDV in the control room, laying of 20 pair instrumentation and control cables, etc.</p>	128,200	31/03/2013
<b>Plant modification works in onshore and offshore facilities</b>	<b>QATAR GAS</b>	<p><b>Multi-disciplined call-off contract for the provision of services to facility in Ras Laffan Industrial City.</b></p> <p>Services include engineering, procurement, fabrication, installation, construction, hook-up, commissioning and start up assistance of small and medium size projects. The services involve all work categories including, engineering, civil, mechanical, piping, electrical, instrumentation and control and any necessary specialized system integration works.</p>	85,330	Under Execution
<b>Plant modification works in onshore and offshore facilities</b>	<b>QATAR GAS</b>	<p><b>Multi-discipline call-off contract for the provision of services to facility in Ras Laffan Industrial City.</b></p> <p>Services include engineering, procurement, fabrication, installation, construction, hook-up, commissioning and start up assistance of small and medium size projects. The services are expected to involve all works categories including, engineering, civil, mechanical, piping, electrical, instrumentation and control and any necessary specialized system integration works.</p>	93,410	Under Execution
<b>EPIC of Sweet Fuel Gas Supply to Dukhan Consumers (SFGSDC)</b>	<b>QP</b>	<p><b>EPIC Project for the supply of Sweet Fuel Gas at Dukhan and the provision of adequate gas supplies to cater for the projected demand up to year 2016.</b></p> <p>Services include construction of pipelines sizes 36", 18", 12", 6" &amp; 4". All distribution lines are terminated from the 18" main line running 30 KM from Station N to KMDHS which consists of 42 KM pipeline, cable trenching, road works, 62 Culverts, 83 track crossing, pig launchers and receiver stations, valve stations, 33 KV sub-station and control system works, fiber optic cabling, electrical / telemetry buildings, telecom works and solar power buildings. Works include decommissioning and demolition of existing pipelines and O.H lines as well as all other works related to civil, structural, mechanical, piping, electrical, instrumentation, painting and then pre-commissioning and commissioning.</p>	1,963,200	Under Execution

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Project Title	Client Name	Project Description	Manhours	Completion Date
<b>EPIC for Upgrading of Turbine / Compressor Controls System at Fahahil Gas Lift Compressor Station (FGLCS) and Recycling Gas (RG) Plant in Dukhan Fields</b>	<b>QP</b>	<b>EPIC upgrade of turbine / compressor controls system at Fahahil Gas Lift Compressor Station and Recycling Gas Plant in Dukhan Fields.</b> Activities include necessary modification at existing Sub-station-C buildings at RG Plant for installation of new, installation of TCP/AS/CMS/PLC System as well as SCADA/DCS/ESD/F&G System hardware, new Anti-surge Valves/HART valve petitioners, New HART Field Instruments, new vibration sensors, new F&G detection devices, UPS, LV Feeder/DBs, cable trenching, Power/Signal/FO Cabling, testing and commissioning works at ARAB-D and FLGCS plant areas.	202,200	30/10/2013
<b>Providing Engineering, Procurement and Construction Services on Call-off Basis</b>	<b>DOLPHIN ENERGY</b>	<b>Multi-discipline term contract for the provision of services to onshore and offshore facilities.</b> Services include engineering, procurement, fabrication, installation, construction, hook-up, commissioning and start up assistance of small and medium size projects. The services included all work categories such as engineering, civil, mechanical, piping, electrical, instrumentation and control and any necessary specialized system integration works.	425,000	04/10/2012
<b>EPIC of Upgrade of Recycle Compressor - K9503 at Arab D Plant – Dukhan</b>	<b>QP</b>	<b>EPIC of Upgrade of existing Recycle Gas compressor K- 9503 and replacement of suction knock-out drum of the compressor C/W all associated piping, electrical, instrument and control system.</b> Activities include pre-shutdown and shutdown activities; pre-fabrication of piping spools, cable laying, pipe supports footings casting, fabrication blasting and painting of pipe support structural etc., pre-shutdown activities, demolition and dismantling of existing V-9504 along with related piping, instruments etc. and installation of new V-9504 along with new piping, instruments etc. The upgrade of the recycle compressor including all related instrumentation and control system as well as a new anti-surge control system, pre commissioning and commissioning, completed during the above mentioned shutdown window, with the association of the compressor system vendor M/S GE-Thermodynamic.	80,200	30/10/2013
<b>Construction of Civil Works and Minor Buildings for Nakilat Ship Repair Yard (Phase 1 &amp; 2) and Nakilat Ship Construction Facility (Phase-4) Port of Ras Laffan (BCEC - SEG JOINT VENTURE)</b>	<b>NAKILAT</b>	<b>SEG/BCEC JV Project for the construction of civil works and minor buildings for the Nakilat Ship Repair Yard and facility port of Ras Laffan.</b> Services include construction of building and facilities such as - Subcontractors' Facility, Stores and Support Facility, Pipe Working Facility, M&E Facility, Plate and Section Stockyard, Treatment Line, Steel Working Building, Paint and Blast Cell, Dedicated Utility Buildings, Mobile Accommodation Units, Infrastructure Works associated with the above including power distribution, fire protection, process gas distribution, roads, paving, fencing and drainage.	91,820	15/09/2011

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Project Title	Client Name	Project Description	Manhours	Completion Date
<b>RASGAS- Beach Valve Phase II Project</b>	<b>CHIYODA ALMANA/ RASGAS</b>	<p><b>Installation of instrumentation between beach valves and the offshore control room for the pipeline.</b></p> <p>Procurement, installation, testing and commissioning of Beach Valve Phase II Project comprised of Civil, Mechanical, Electrical, Instrumentation works as well as testing and commissioning works. Scope of work also included demobilization, excavation and back filling underground facility detection survey, equipment foundation, structural steel works, micro-tunneling, cable / multi-optical fiber cable laying and its termination, fiber optic cable splicing and termination, main cable trays underground cable trenches, coating and water proofing, installation of field instruments, pressure lead piping installation, signal air tubing installation, calibration works, loop testing, functional check etc.</p>	83,500	30/12/2010
<b>EPIC of New Source Water Wells DKW-41 and DKW-42 at Pumping Stations PS-1 and PS-4 in Dukhan</b>	<b>QP</b>	<p><b>EPIC project for new source water wells at two pumping stations in Dukhan.</b></p> <p>Services consisted of 8" pipelines ( DKW-041 to PS-1 &amp; DKW -042 to PS-4), Station Pipe work at DKW- 041 &amp;042 and PS-1 &amp; PS-4, Piping tie-ins in shutdown. Installation of down hole pump along with well tube inside source water wells DKW 041 &amp; 042 and civil works.</p>	200,000	15/12/2010
<b>Creation of Corrosion Inhibition Facilities at the Wellheads with Gas lift, Dukhan</b>	<b>QP</b>	<p><b>Provision of corrosion inhibitor injection facilities for each individual Wellhead having Gas Lift facilities in order to protect the Wellhead casing, tubing and flow lines from corrosion.</b></p> <p>Services included site surveys/detail engineering of all new corrosion skids, construction of skids concrete foundation/piping, tubing foundation, excavation back filling of cable trenches, laying/termination of instrument/FOC cables, connecting/termination to existing PLC/SCADA and necessary modification /integration with existing PLC/SCADA for the monitoring of the new installation from central control room. The works also included the fabrication/installation of steel sheds in each location and all necessary pre-fabrication installation of piping/tubing new instruments in 28 stations. Construction works were carried out in a very large geographic area (70 km) which required complex logistics and coordination with client to complete and commission the works on time with an excellent safety record.</p>	945,500	08/05/2010

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<b>Construction of Desalinated Water Network Phase II at Ras Laffan.</b>	QP	<b>Construction of second phase of a desalinated water network in Ras Laffan Industrial City.</b> Services include construction of site survey, topographic survey, detailed design and engineering, procurement of materials such as MOV PCV, manual valves, electrical and instrumentation materials, civil works such as temporary facilities, leveling / grading, pipeline trench; construction of valve chamber, micro tunneling , product corridor crossing, pipeline crossing, pipeline installation, instrumentation & control installation, testing of electrical and instrumentation / control systems, sterilization of pipeline, pre-commissioning and commissioning.	1,500,000	23/11/2009
<b>Replacement of V-2003 and Installation of Air Coolers at NGL-2 Mesaieed</b>	QP	<b>Replacement of glycol separators and installation of air coolers at NGL-2 Mesaieed.</b> Design and detailed engineering, procurement of all materials including glycol separators V-2003 and air coolers E-2410/S. Construction consisted of earthworks, excavations, concrete foundations, structural steel, fabrication and erection of access road, transportation and erection of glycol separator and coolers, piping , cable laying, installation of control / ESD panels, calibration and installation of field instrument, installation of lighting and earthing system, installation of firewater monitors, F&G detectors, F&G panels, hydro testing, pre-commissioning / commissioning, part shutdown, start-up and reliability test.	533,200	31/05/2009
<b>Installation of Nitrogen Pipeline for consumer supply in Mesaieed Industrial City</b>	GASAL	<b>Installation services for laying the 14" Nitrogen Gas Pipeline and its Control Stations.</b> The pipeline routed between Gasal Plant, located in QASCO premises and consumers QATOFIN and Q-CHEM II, located in Mesaieed Industrial City. The pipeline is equipped with control stations at its export and receiving points with facility for pressure control and metering.	140,400	31/05/2009
<b>EPIC of SOW for Installation of Continuous Emission Monitoring System (CEMS) on Selected Combustion Sources in NGL-1 &amp; 3 Plants- Mesaieed</b>	QP	<b>Installation of CEMS is to provide facilities for automatic continuous monitoring of major components of the flue gas emissions mainly oxides of nitrogen and oxygen at NGL-1&amp;3 Plants, Mesaieed.</b> Extractive type CEMS with automatic sampling using microprocessor based analytical instruments, data acquisition and recording/reporting system. Project consisted of detailed engineering, procurement, installation and commissioning. As well as mechanical, electrical, instrumentation and loss prevention works such as installation of nozzle for CEMS sampling probes, access ladders and platforms for stacks, power supply 415 V AC, cabling, DCS (ABB Harmony Controller with OPIT System) and F&G systems which interfaces with existing GE Fanuc system for NGL-1 and ICS System for NGL-3 plants,	204,960	Under Execution

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<b>EPIC for Continuous Emission Monitoring System in Dukhan</b>	QP	<p><b>EPIC for the Continuous Emission Monitoring System (CEMS) in Dukhan Plants in compliance with state of Qatar Environmental Regulations (MoE).</b></p> <p>Provision of manual sample ports for all the existing stacks at Dukhan. Microprocessor based automatic sample extraction, sample transportation, purging and heat tracing accessories, access ladders and working platforms with all required accessories in stacks for CEMS and manual monitoring facilities. Ports for manual sampling and CEMS Monitoring, instrument air distribution lines, thickness measurement for stacks where platforms are directly mounted on the stack. Installation of foundations for CEMS Panel and new structural steel access platforms for sampling ports, electrical power distribution system, tie-in facilities for piping, electrical and instrumentation works, earthing system, new lighting and illumination systems, necessary heat shields and insulation for personnel protection and fire protection system.</p>	129,559	Under Execution
<b>EPIC for Upgrading the Instrument Air System at KNDS within Dukhan Fields</b>	QP	<p><b>Upgrade of Instrument Air System which consists of Mechanical / Process and Machinery, Supply, Installation and Commissioning of 5 Nos.</b></p> <p>New Skid mounted units' rotary oil free screw air compressor (195 CFM). Supply and installation of new dry air receivers, buffer tanks, new piping, instrumentation and control along with the related E&amp;I, F&amp;G, New PLC room, compressor building with travelling crane, site survey, topographical survey, underground service survey, geotechnical investigation, civil, structural, mechanical, piping, electrical, instrumentation &amp; control, inspection, testing &amp; commissioning works.</p>	84,416	06/10/2014
<b>EPIC to Upgrade the Turbine Air-Intake Filtration System with Dukhan Fields</b>	QP	<p><b>Design, construct, supply, installation and commissioning of upgraded Air Filtration Systems at KM, KN &amp; FM.</b></p> <p>Involving Mars 100S-15000 (SoloNox) System with 2 stage filtration, 1st stage self-cleaning jet pulsing with F9 filter elements and second stage have filter element H10 efficiency. SS31L / 304 L filter assembly housing complete with lighting, gas detectors, 3DP transmitters, CS support structure, new filter outlet new air filtration system to render hot corrosion formation. It consist of corrosion protection, reduction of ultra violet radiation, loss prevention, commissioning and related Civil, Structural, Mechanical / Piping, Electrical, Instrumentation, coating and painting works.</p>	30,570	15/09/2015
<b>Upgrading Gas Turbine Air Inlet Filter Elements and Supply and Installation of Modified Restriction Orifice (RO) Plate on Sea Water Return Line of Train-3</b>	QATAR GAS	<p><b>Upgrade of Gas Turbine Air Inlet Filter Elements as well as supply and installation of Modified Restriction Orifice (RO) Plate on Seawater return line of Train-3.</b></p> <p>Supply and installation of the new Pulse Air Manifolds in KT 601/602/603/604 of Train-3 in QG-1 and all the related works such as additional tube supports to the exchanger of cooling air tubes etc.</p>	76,410	31/08/2013

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<b>Turnaround Maintenance Works at Gas Recycling Plant within Dukhan Field</b>	QP	<p><b>Maintenance works for Gas Recycling Plant process approx. 780 MMSCF / day of non-associated gas taken from Arab-D reservoir produces approx. 33,000 BPD of condensate, 77,000 BPD of NGL and re- injects approx. 620 MMSCF / day of gas back to reservoir.</b></p> <p>The facility constitutes system of condensate extraction, NGL extraction, Acid Gas Removal, utilities, gas injection, Import &amp; Export, Flare Stacks and wellhead.</p> <p>Scope of works included decontamination of the facility, internal inspection of static equipment, overhauling of valves, civil works, piping works, supply of all materials, labour, services, supervision, testing devices, warehousing, equipment, tools, water, consumables, scaffolding, rigging, isolation, spading &amp; de-spading, degassing, equipment inspection, opening, cleaning, modification, repairs, closing, re-insulation , hydrostatic testing, painting, insulation and purging of plant for start- up.</p>	326,580	Under Execution
<b>EPIC of Smokeless Flare &amp; Automatic Blowdown System &amp; New Co</b>	QP	<p><b>EPIC to upgrade / modify the flare / blow-down / drain system and install a new air assisted elevated smokeless flare. Construction of a new 11 KV Substation building with all its building services, F&amp;G, Fire alarm, HSSD etc.</b></p> <p>Modification of gas and liquid blow-down system and provide automatic blow-down system which shall meet the requirements. Carryout necessary modifications in the plant to install automatic blow-down system, so that blow down of equipment in each fire zone can take place upon the detection of external fire in that zone. Installation of new, adequately sized Flash Gas Compressor to avoid flaring of the flash gas. Flash gas pressure was be boosted and injected to either of the following locations (1) to SAG Header (2) Recycle to RAG line upstream of K-1101 Booster Compressor (3) to proposed pipeline (future) for diverting excess SAG and Flash Gas to FMDS. Eliminate existing Burn Pit by diverting all existing streams to the new flare / drain system. Contaminated drains were diverted to FMDS Crude Desalter Tanks, through a new pipeline.</p> <p>Modification and repair works during Plant Maintenance Shutdown Construction of New Control Room at Fahahil Stripping Plant. Construct a new 1000m<sup>2</sup> Blast Proof Control Building with all building services MEP, Electrical, F&amp;G, Fire alarm / HSSD, Telecom / SCADA.</p>	3,393,574	Under Execution