It has been a pleasure serving the **industry and valuable clients since 1979.** I would like to thank you for taking the time to learn more about our Company. In order to **serve you better,** I would like to take this opportunity to offer you insight about **Techno’s proven capabilities.**

Since the foundation of Techno Engineering Services (TES) in 1979, TES has delivered some of the most challenging oil and gas facilities, oil and gas pipelines, and infrastructure projects in Pakistan, Iraq, and UAE. Our projects are now the key assets of the clients as they are delivering high Return-on-Investment (ROI) for them.

While leveraging on Techno’s Engineering, Procurement and Construction (EPC) project delivery strength in Oil & Gas Pipelines, Storage & Terminal Facilities, Infrastructure Development i.e. Motorways, Bridges, Tunnels, Power Plants, Overhead Transmission Lines, and API Pipe Manufacturing, Techno is looking forward to expand in delivering full-scale EPC contracts for Oil Refinery projects, Oil/Gas Central Processing Facilities projects, Water Treatment projects and projects for Conceptual to FEED Phases, EPCM and PMC Services in Oil/Gas, Power, Water and Infrastructure Development.

One of the key elements of our business is establishing long-lasting relationships with our clients. Techno is offering its clients Project Development and Delivery Services across the entire life cycle of a project – starting from project initiation to hand over to operations.

I invite you to visit our website [www.technoengineering.com](http://www.technoengineering.com) and browse our company’s strengths and our services portfolio. I am confident that our portfolio will encourage you to consider TES to be part of your current and future project development and execution initiatives.

With corporate culture embedded in our system, I assure you that our clients are in trusted hands because our approach is to find solutions, to all kind of problems during the project execution, in a tactical, methodical and logical manner. Our prime focus is delivering excellence to our employees, suppliers, subcontractors and clients.

I would like to offer my thanks for the patronage & continued business support of our valuable clients.

Yours sincerely,

Abid Ali
CEO
INTRODUCTION:

Techno Engineering Services (Pvt.) Ltd. (TES) is a privately owned firm established in 1979 which began its services by serving Pakistan’s domestic oil and gas industry. Since then, TES has focused on growing and expanding its professional services not only in the domestic and global markets of Oil and Gas but also in Power, Water, Infrastructure Development and API Pipeline manufacturing sectors. Over the years, TES has served hundreds of clients across Pakistan, Iraq & UAE and has gained reputable position in the business community.

TES was founded on core values of integrity, client focus, teamwork, and sustained excellence which, over the years, has resulted in beyond 85% of our projects coming from previously satisfied clients. It realizes the extensive growth over the years through the rigorous pursuit of catering to the needs of the clients by adjusting to the dynamically changing environment.

Currently, TES core strength is in Engineering, Procurement and Construction (EPC) phase of the project life cycle in Oil & Gas Pipelines, Storage & Terminal Facilities, and Infrastructure development i.e. Motorways, Bridges, Tunnels, Power Plants, Overhead transmission lines and API Pipe manufacturing. However, Techno is looking forward to delivering full-scale EPC contracts for Oil Refinery Projects, Oil/Gas Central Processing Facilities Projects, Water Treatment Projects and Projects for Conceptual to FEED Phases, EPCM and PMC Services in oil/gas, power, water and infrastructure development sectors.

Techno Engineering Services (PVT.) LTD takes pride in establishing the highest standard of business professionals in its roots through which it has been providing the utmost level of performance; this effort has always been rewarded with positive feedback.

Some of the highlights of the challenging projects are:

**OIL & GAS PROJECTS:**

- EPC 18"-dia. 107.5 Kms. “Gas Export Pipeline” Badra – Zubaidah Project, Republic of IRAQ.
- EPC 42"-dia. 102 Kms. Onshore Export Pipeline & Associated Works (i.e. 67Kms. 33kV Overhead Power Line) from Central Processing Facilities to Tuba Tank Farm, Republic of IRAQ.
- Construction of 24"Ø x 201.00 Kms. EXLI Pipeline of AHDEB Oil Field Project – Republic of IRAQ.
- Pipeline Construction Section IV – 48"-dia. 100Kms. Abu Dhabi Crude Oil Pipeline Project (ADCO), United Arab Emirates.
- Construction of Main Oil Terminal (Civil Works Tank Foundations & Area Development) - Abu Dhabi Crude Oil Pipeline Project (ADCO) United Arab Emirates.
- EPC 26"-dia. 817 Kms. White Oil Pipeline Project (WOPP) Pakistan – Consortium CPECC and Techno.

**POWER PROJECT:**

- EPC 67Kms. 33kV Overhead Power Line as Part of EPC 42"-dia. 102Kms Onshore Export Pipeline & Associated Works, Republic of IRAQ.
VISION:

We're committed to delivering excellence in executing the projects across the full project life-cycle in line with the agreed capital and operating targets including but not limited to HSE, Quality, Cost and Schedule.

MISSION:

Our aim is to deliver exceptional project management and engineering services ensuring high value for our clients by implementing global best-in-class customized project & engineering management services and tools by a team of highly skilled professionals.
VALUES:

We believe in working together to foster creativity and leverage individual strengths in order to achieve common goals and objectives.

INTEGRITY
Carrying out our business activities in an ethical manner and in strict compliance with the local and international law, wherever we operate.

RESPONSIBLE
We are committed to our employees, stakeholders and our clients with prime focus in their growth and in providing them safe and healthy environment.

VALUE OUR PEOPLE
We invest in individuals working for us. We empower them to reach their full potential where they have the freedom to take their own decisions.

FLEXIBILITY
Flexible and practical approach to client requirements in delivering high-value work, on time, within budget and expected key performance indicators.

DELIVERING ON COMMITMENTS
Every day we focus on our employees, stakeholders and clients and deliver our promises. We work hard to build long-term partnerships with clients for mutual benefit.
Safeguarding the **Environment and Health & Safety** of our employees, suppliers, contractors, clients, third parties & communities are of **utmost importance**.

Techno is committed to provide accident free and healthy work place for all involved in the project activities and is committed to designing and constructing safe, reliable and environmentally friendly facilities. Our goal is continuous improvement and for that purpose, we regularly review our Health, Safety and Environment procedures to prevent any adverse impacts to environment and to our staff, clients and other stakeholders.

Techno’s Management communicates the HSE Policy to all personnel and stakeholders associated with our business and ensure its conformance in the project activities.

Techno believes:

- All incidents are preventable.
- HSE matters can be systematically identified, controlled, corrected and improved.
- Individual awareness, personal engagement, and appropriate behavior are the key drivers in promoting effective and efficient HSE culture.

Our HSE management system is based on ISO 9001 and ISO 14001:2004, occupational health and safety systems using OHSAS 18001 and the OHSMS guidelines.

We are constantly working on improving workplace Health, Safety and Environment activities guided by the principles as below:

**WORKFORCE PARTICIPATION**

We provide a supportive environment in which employees and contractors are involved in all aspects of our HSE management program. This program allows to collect data and provide a statistical overview of our safety performance along with the implementation of corrective actions to improve the performance.

**CONTINUAL IMPROVEMENT**

We regularly conduct audits for HSE performance for every project to correct and implement the necessary changes in a timely fashion.

**ENVIRONMENTAL STEWARDSHIP**

We perform activities that are environmentally friendly. Our aim is to minimize any adverse impacts by finding out innovative ways to deliver projects.

**HSE PERFORMANCE**

To minimize accidents, Techno uses implementation and tracking of HSE leading indicators in our systems. HSE leading indicators are used to improve performance by eliminating defects in current work processes that may lead to injuries, property damage, regulatory non-compliance, negative perceptions and undermine the HSE culture.
HEALTH, SAFETY AND ENVIRONMENT (HSE) POLICY

We believe every incident is preventable. Our health, safety and environmental (HSE) management program is an essential part of Techno’s everyday culture. Our philosophy of “Zero Incident” begins in the workplace and extends to the communities where we conduct our business. This fundamental belief, outlined in our HSE Policy is embedded in our corporate culture and integrated into every aspect of TES business activities.

We are committed to a process of continuous improvement in all we do and to the adoption of international industry standards and codes as the Company achieved ISO 14001: 2004 and OHSAS 18001: 2007 Certifications. The company ensures that the work environment for all employees is set in such manner as to keep all health, safety & environmental factors in place as well as providing services and measures to avoid hazardous scenarios for all personnel.

Management has a leadership role in the communication and implementation of, and ensuring compliance with, HSE policy, procedures and standards. We are committed to:

- Identify and strive for best practices for continuous improvement of HSE system performance;
- Comply with Health, Safety & Environment codes and legislation, and co-operate with relevant enforcement agencies including local communities;
- Systematically identify potential hazards, assess their relative significance, develop reduction measures and establish suitable controls to ensure that risks are minimized;
- Plan for, respond to and recover from any emergency, crisis and business disruption;
- Minimize our impact on the environment through pollution prevention, reduction of natural resource consumption and emissions, and the reduction and recycling of waste;
- Monitor HSE performance of all stakeholders involved in the TES business activities using agreed key performance indicators;
- Provision of training, controls, and protective measures based on sound assessment of personal health and safety, equipment and process safety, workforce and asset security, and environmental and social responsibility;
- Audit and review of HSE systems & performance and continually improve the effectiveness of system;
- Allocation of appropriate resources to implement this policy;

This policy shall be regularly reviewed and updated to ensure the quality and appropriateness of its implementation. The Management commitments to HSE are in addition to comply with International standards as well as all applicable law and regulations where we operate. Company measures the achievement of this HSE Policy by setting measurable HSE performance targets in our business plans, which we are all committed to. This Policy Statement shall be made freely available to all interested parties.

Arsalan Ali
Director
21st August 2017
Techno Engineering Services (Pvt.) Ltd ensures **client satisfaction** by implementing **class quality assurance guidelines & procedures**, strict quality control program and its well-defined **Quality Policy for the execution of projects**.

A strong, client focused approach and constant quest for top class quality has enabled us to deliver projects within the expected quality targets and meeting key performance indicators. Techno Engineering Services (Pvt.) Ltd utilizes a Quality Management System in compliance with the International Standard ISO 9001:2008.

We are committed to adhering to highest standards of quality assurance and controls by implementation of Quality Management System through all phases of the project including tendering, project management, engineering design, procurement, inspection, construction, commissioning and start up. Guided by our Quality Management System, we are dedicated to providing a complete professional engineering and project management services with adherence to the following key goals:

- Achieve excellence through the active participation of all levels of management, our staff and other stakeholders in our Quality Management System
- Meet or exceed the international standards and client requirements

**ISO 9001-2008 CERTIFICATE**
QUALITY POLICY

We, at Techno Engineering Services (TES), are committed to delivering excellence in all areas of our business and are passionate about providing the best solutions and services to our clients and other stakeholders. We maintain and enhance our reputation in the marketplace by consistently earning the trust of all stakeholders by implementing the best standards of quality assurances and controls while ensuring client’s requirements are met.

TES believes in the accountability for Quality from all our employees, contractors and third parties. We are committed to:

- Continuously striving for improvement in Quality at all times and exceeding customers’ expectations;
- Ensure that a customer-focused and process-driven quality management approach is maintained;
- Meet client’s specific requirements and promote a culture of continual improvement, responsibility and accountability through the use of an effective quality management system;
- Ensure that quality policy, standards, programs and performance is communicated openly to all employees and made available to all interested parties;
- Increase the motivation and skills of our people to add value to our clients and our businesses, through continual training and development;
- Ensure that analysis, monitoring and controlling, inspection, audit and performance measurement systems are established and implemented on regular basis;

Management has the ultimate responsibility for the implementation and effectiveness of the quality management system and ensuring that the quality management system is communicated, understood, implemented within the organization and to the client satisfaction.

This Policy shall be regularly reviewed to ensure that it is always up to date. The commitments listed are in addition to applicable laws and regulations where we provide our services.

Arsalan Ali
Director
14th August 2017
Techno Engineering Services (Pvt) Ltd, a well established name and a preferred choice of the customers, is an integrated engineering, procurement and construction (EPC) company, committed to delivering excellence in all aspects of project execution, starting from concept design to detailed engineering, procurement and contracts, construction, commissioning and start up and handover to operations including operator training.

Techno is fully equipped with highly skilled local and international expertise and resources including construction equipment and tools to deliver large scale national and international projects for oil and gas, infrastructure, power and water sectors.

We proactively engage with our customers and are flexible in our approach to deliver cost-effective and timely solutions for all our projects. For over 30 years, Techno Engineering Services has shown its ability in successfully managing projects of all types and sizes at national and international level.
Effective project management is one of the key elements in the successful delivery of the project. Techno has developed and refined project management systems, procedures, and specifications for the effective, fit-for-purpose and customized management and control of engineering, procurement, construction and commissioning of the projects.

Our range of project management services is specifically tailored to suit client practices, procedures, and standards which enable us to add maximum value to the projects leading to the expected outcomes.

Some of our services include:

- Consultation and supervision of all project phases from the concept phase to hand over to operations
- Pre-FEED / Basic Engineering Design and FEED development services including Supervision and Review
- Project Assurance Review Services
- Tender Development, Evaluation, Negotiation and Recommendation
- Setting up Project Management Office (PMO) unit
- Planning, Scheduling, Risk, Reporting Management
- Procurement, Contracts and Logistics Management
- Quality and HSE Management
- Construction Management
- Commissioning and Start Up Management
Capitalizing on Techno’s prior experiences, internal expertise, international best practices along with reputable partners, we are capable of delivering high-quality engineering solutions for the most challenging projects.

Our engineering expertise covers the entire spectrum of projects in Oil/Gas, Infrastructure, Power, and Water sectors. We deliver right and fit-for-purpose services and solutions to our clients to maximize assets value, improve competitive positioning, and increase long-term business success. We offer engineering services and solutions for conceptual design, front-end engineering and detailed engineering including support to procurement, construction and commissioning & start up.

Some of our services are highlighted below:
- Technical Safety
- Process Engineering
- Plant Layout & Piping
- Civil, Structural and Architectural Engineering
- Mechanical Engineering
- Control Systems Engineering (Instrumentation and Automation)
- Electrical Engineering
- Document Management
- Pre- Commissioning, Commissioning and Startup

SOME OF THE SERVICES OF ENGINEERING STAGES AND THE STUDIES ARE:
CONCEPTUAL DESIGN
- Feasibility Study
- Identify & Determine Conceptual Process Studies
- Concepts Development and Modeling
- Basis of Design
- Assurance Reviews
- Site Surveys
- Safety Philosophy and Environment Impact Assessment

BASIC ENGINEERING DESIGN / PRE- FEED
- Basis of Design
- Preliminary plot plans, PFD’s and P&ID’s for Process and Utility Generation
- Piping Classes Summary
- Definition and Sizing of main Equipment Resulting in Process Specifications
- Design & Specification for Instrumentation & Control
- Preliminary Soil Investigation Report
- Local Effluents Regulations
- HAZID, Safety Philosophy and Environment Impact Assessment
- Concept Selection
- Value Engineering
- Assurance Reviews
- Engineering and Site Surveys

FRONT END ENGINEERING DESIGN (FEED)
- Equipment and Instrument process data sheets
- P &IDs –Packaged units
- Requisition for inquiry for main equipment and LLI
- Plot plans with plan and elevation views
- Material Selection Diagrams and Piping material class specifications
- System I/O sizing and Instrumentation
- Preliminary cable schedule
- Soil Investigation report
- Typical equipment foundations drawings
- HAZOP, Safety Philosophy and Environment Impact Assessment
- Assurance Reviews
- Engineering and Site Surveys
- 3D Modeling

DETAIL ENGINEERING
- Development of Piping and Instrument Diagrams issued for construction
- 3D Modeling
- Development of detailed piping drawings, including isometrics and stress calculations issued for fabrication and construction
- Development of detailed drawings related to electrical, instrumentation and controls issued for manufacturing and construction
- Development of civil works detailed drawings issued for construction
- Development of technical documents for the purchasing of equipment, main and bulk.
- Management of vendor data and documentation
- Development of commissioning and Start-up procedures.

ENGINEERING TOOLS AND SOFTWARE
Some of the tools and software Techno utilizes for engineering:
- HYSYS
- Aspen PLUS
- SPS
- FAST
- TANK (2015)
- ETAP
- STAAD.Pro
- CASS 9.1
- ANSYS
- PDMS
- AutoCAD
- CAESAR II
- Microsoft office
- Pipeline Construction Management Solutions (CMS)
- Material Management and EDM
Techno procurement team delivers cost-effective, high-quality equipment and materials for projects through efficient supply chain management, that in turn supports Engineering, Construction and Commissioning requirements and timelines.

Our procurement approach is based on a well-coordinated procurement model, which enables Techno to operate as a unified supply chain management organization, capable of delivering successfully procurement targets and benefits to its clients.

Techno’s Global Procurement Mission;

- Developing long-term relationships with suppliers
- Implementing new procurement strategies to improve competitiveness and quality
- Gathering and updating client’s list of approved suppliers
- Hiring of reputed third party inspectors for inspection
Construction is one of the core strengths of Techno. We have unique expertise to manage and deliver most challenging major projects.

Creative methods and fit-for-purpose processes enable us to deliver projects as per customer satisfaction and the highest standards in HSE and Quality. Our national and international experience and a network of construction resources enable us to understand the local country’s law, regulations and challenges quite well. Moreover, we have an ability to quickly adapt to the requirements of new locations and devise workable solutions efficiently and quickly mobilize construction equipment and construction crews. Techno has excelled and is well known for its diversified staff which includes people from various culture, race, and regional backgrounds. Techno’s first priority is employing and training local labor to the degree that is possible to add value to each project and to the local economy.

TECHNO’S CONSTRUCTION EXPERTISE INCLUDE

OIL AND GAS
- Export Pipelines
- Brownfield Development
- Facilities Upgrade
- Gathering and Injecting Systems
- Pump and Compressor Stations
- Storage Tank Systems
- Receiving Terminals
- Process Plants
- Water
- Industrial and Waste Water Treatment
- Produced Water Treatment of Oil and Gas Field
- Construction of Water Distribution and Network Services

INFRASTRUCTURE
- Buildings & Facilities
- Highways and Bridges
- Tunnels
- Municipal Infrastructure
- Dams

POWER
- Power Generation Facilities i.e. gas, Hydro and Thermal Power Plants
- Overhead Transmission Lines
- Substations
- Distribution Facilities
One of Techno’s key assets is its self-owned construction equipment.

<table>
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<th>UAE</th>
<th>IRAQ</th>
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<td>Motor Graders</td>
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<td>Wheel / Skid / Backhoe Loaders</td>
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<td>Scissor Lift</td>
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<td>Bending Machines with Mandrills (10’ to 52”)</td>
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<td>Thrust Boring Machines</td>
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<td>Micro Tunneling Machine (HERRENKNECHT)</td>
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<td>HDD Drilling Machine (Ditch Witch JT 100 &amp; JT 4020)</td>
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<td>HDD Drilling Machine (HERRENKNECHT 250T)</td>
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<td>Heavy Bridges for river and canal crossings with accessories</td>
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<td>31</td>
<td>Trenchers</td>
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<td>Dewatering Pumps</td>
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<td>Compressors &amp; High Pressure Pumps</td>
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<td>34</td>
<td>Pipe Fabrication / Manufacturing Factory</td>
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<td>35</td>
<td>3LPE Pipe Coating Plant</td>
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<td><strong>TOTAL</strong></td>
<td>963</td>
<td>316</td>
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</table>
Techno delivers Commissioning and Start-Up scope in a planned, controlled and timely manner with the safety, security, and health of its employees, clients, suppliers and subcontractors an utmost importance.

We are well-versed in systems completion, commissioning and start-up activities. Our experienced team, with extensive field proven expertise, delivers client-focused services using proven processes and systems resulting in increased productivity, enhanced construction processes, accurate scheduling, cut-down maintenance cost, reduce downtime, and assure safe operation for every project.
Techno offers a complete range of API line pipe manufacturing for the oil and gas cross country / export / transmission pipeline applications. Our manufacturing facilities share a unified global quality policy and are ISO 9001 certified. Our line pipe production facility, SHASHI Steel Pipe-Works Ltd is located in Pakistan with the following production capacities:

- Covered Area 75 Acres
- Production Cap. 200,000 Tons Per Annum
- 3 Layer Poly-Ethylene Coating
- Current Cap. 12”-100” dia.
- Pipe Length 10ft, 20ft, 40ft.
- Beveling Capability
- Thickness up to 25 mm.
- Grade up to X70
- API 5LPSL2

We have manufactured & supplied pipes for the following Clients:

- PARCO, 800 km long three layer coated pipe (X-65 steel grade) having 26 inch diameter in year 2002
- PARCO, 20 km long three layer coated pipe (X-65 steel grade) having 26 inch diameter on 24 May 2005
- SSGC, 151 km long three layer coated pipe (X-70 steel grade) having 24 inch diameter on 05 June 2006
- SNGPL, 16.9 km long bare pipe (X-46 steel grade) having 16 inch diameter on 26 February 2004
- SSGC, 30 km long three layer coated pipe (X-70 steel grade) having 24 inch diameter on 18 September 2007
POWER

OIL & GAS

INFRASTRUCTURE

POWER

WATER

MARKETS
Techno Engineering Services (TES) is a leading engineering, procurement and construction (EPC) company that delivers the most challenging and complex engineering, procurement and construction projects for Oil & Gas, Water, Infrastructure, Power and Manufacturing sectors across Pakistan, United Arab Emirates and Iraq.

TES IS NOW EXPANDING IN OTHER MIDDLE EAST COUNTRIES TO PROVIDE ITS HIGH VALUE SERVICES IN OIL & GAS, WATER, INFRASTRUCTURE AND POWER SECTORS.

Techno is a reliable name when clients are looking to build oil / gas cross country & export pipelines, well-gathering systems, refining & central processing facilities, invest in power plants & build overhead transmission lines. Furthermore, we build infrastructure (roads, motorways, bridges, and buildings), water pipelines and treatment facilities or upgrade / revamp existing facilities with sustainable infrastructure.
Techno has over 30 years of experience in the oil and gas industry. We have a strong history of delivering oil and gas projects at all levels from upstream to downstream.

The cross country/export pipelines and facilities we engineer and construct have an outstanding track record with respect to start-up and performance. Our quality-driven approach to project execution enables us to provide customized services with a high degree of predictability and client satisfaction.

Techno has significant experience with various contracting approaches that include EPCM/EPC/Construction. Our scalable EPC solutions are proven in oil/gas projects of varying sizes. Our processes and systems have resulted in the successful management and delivery of projects. We approach every project with strong planning, engineering, procurement, construction, commissioning and operations and maintenance capabilities with a relentless drive to understand and meet our clients’ expectations. Our clients can count on us for adaptability, attention to detail and a commitment to deliver the project towards successful completion.

Our core services include engineering, procurement, construction, commissioning & start-up including full project management for projects across an extensive range of areas including:

- Cross Country/Export Pipelines
- Greenfield and Brownfield Development
- Facilities Upgrade
- Gathering and Injecting Systems
- Pump and Compressor Stations
- Storage Tank Terminals
- Process Plants
We offer **water treatment services and solutions** for industrial water treatment, water produced **during oil and gas production**, **waste water treatment** and water desalination. We ensure our clients that **precious water resources** are protected and managed in a **sustainable manner**.

Together with our partners, who have strong expertise in all kind of water treatment areas, we provide engineering, procurement and construction (EPC) and commissioning services for water and wastewater networks, treatment facilities and ancillary equipment. We have expertise in the design and construction of water distribution and collection pipeline networks. Our highly trained teams design, procure and manage the delivery of complete projects from route selection, laying technique, dealing with utilities, connecting to existing services, testing, commissioning and reinstatement.
Our fully integrated teams take full control of a project, from advisory services to design and construction. We offer end-to-end solutions to a broad range of sectors that include:

- Buildings & Facilities
- Highways and Bridges
- Tunnels
- Municipal Infrastructure
- Dams

Techno has significant experience in all of the above sectors with various contracting approaches that include EPCM, EPC and Construction services. Whether we provide a separate or one fully integrated solution, both the approaches allow us to deliver outstanding modern infrastructure.
As the demand for **sustainable power grows** across the globe, so do our **contributions to the power sector**. We offer a complete set of **engineering, procurement, construction (EPC) services** for power projects, including: power generation, overhead **transmission lines**, **substations**, and **distribution facilities**.

We also offer diversified power distribution services for large and small scale oil and gas pipelines and facilities. Our experience further extends to power generation facilities which include gas, hydro and thermal power plants.
PROJECT

Engineering, Procurement and Construction of 107.5 KMs. 18”-dia. Gas Export Pipeline Badra – Zubaidah Project

PRINCIPAL OWNER
Midland Oil Company (MdOC)

CLIENT
Gazprom Neft Badra B.V.

LOCATION
Badra – Zubaidah, IRAQ

REGION
Middle East

SERVICES
EPC - Engineering, Procurement, Construction, Commissioning and Start-up

PROJECT SCOPE

PROJECT CHALLENGES
As per the Client’s request the overall design (FEED) has been optimized, so deletion of redundant equipment and design changes were done considering the initial requirements for the project parameters.

• The detailed design of more than 150 crossings, including the Tigris river crossing (1200 m length) by horizontal directional drilling method.

• Timely delivery of material was a critical requirement to support construction, commissioning & startup schedule. Iraqi custom clearance requirements were communicated to all suppliers proactively and effective coordination was done to release the shipments from the customs and deliver all the material at site as per the project requirements.

• Construction of GEP was done throughout the agricultural areas and farmlands. During construction Pipeline had to cross more than 400 irrigation channels, 12 hardtop roads, 2 major rivers;

• Facilitate with GPNB & MdOC to coordinate construction works and methodology with local landowners to minimize negative effect on their farmlands and environment;

• Scheduling of the works in order to avoid working in lowland areas during rainy seasons. 60% of the area crossed by the pipeline is not accessible during rainy season due to weather and water discharge from Iranian mountainous areas;

• Timely & efficient interfaces with GPNB, MdOC, Samsung & Zubaidah Power Plant.

RESULT
Met the Principal Owner and Client’s Gas-in milestone in accordance with the contractual timeline.
**PROJECT**

Engineering, Procurement and Construction of 102 KMs. 42”dia. Onshore Export Pipeline & Associated Works including 33kV Overhead Power Line from Central Processing Facilities to Tuba Tank Farm

**PRINCIPAL OWNER**
South Oil Company (SOC)

**CLIENT**
Lukoil Mid East Ltd.

**LOCATION**
West Qurna II, IRAQ

**REGION**
Middle East

**SERVICES**
EPC - Engineering, Procurement, Construction, Commissioning and Start-up

**PROJECT SCOPE**

**PROJECT CHALLENGES**
- Design and Construction of 33kV OHL Tower Foundations in High Water Table area
- Installation of Lattice Tower for 33kV OHL
- HDD Crossing at Major Canal around 841.37m
- HDD Crossing at Euphrates River and Major Canal for 33kV Power Line
- Construction works for 42”dia. Pipeline in High Water Table area with the installation of Geo-Textile Weights
- 239 Number of Canal, River, Road, Highway and Utilities crossings

**RESULT**
Met the Principal Owner’s and Client’s commercial production timeline and targets.
Construction and Commissioning Services for 201 KMs. 24"dia.
AHDEB Oil Field EXL1 (Phase I) Project

**PRINCIPAL OWNER**
Al Waha Petroleum Company Limited

**CLIENT**
China Petroleum Engineering & Construction Corporation (CPECC)

**LOCATION**
Al Wasit Governorate, IRAQ

**REGION**
Middle East

**SERVICES**
Construction and Commissioning

**PROJECT SCOPE**
Construction of 201 KMs 24" dia. Oil Export Pipeline CPF00 to PS2 Project, Republic of IRAQ, (100bar pressure) including River & Major Canal crossings, 8 Block Valve Stations, Cathodic Protection System, Solar Power System and Lightning Protection System, Testing & Commissioning.

**PROJECT CHALLENGES**
- Most of the locations Water Table was very high, so the Contractor installed Set-on-Weights on the Pipeline
- Crossing of Al-Gharraf River by Float & Sink Method

**RESULT**
Achieved the required quality targets and met the timeline to support the completion of the entire scope by the Client / Main Contractor CPECC.

Crude Oil 100 Kms 48"Dia Pipeline Construction of Section IV
Abu Dhabi Crude Oil Pipeline Project (ADCOP)

**PRINCIPAL OWNER**
International Petroleum Investment Company (IPIC)

**CLIENT**
China Petroleum Engineering & Construction Corporation (CPECC)

**LOCATION**
Habshan - Fujairah, UAE

**REGION**
Middle East

**SERVICES**
Construction and Commissioning

**PROJECT SCOPE**
Construction of 100 Kms of 48"Dia. KP 272 to KP 382 with 5 Block Valve Stations, Road Crossings (Micro Tunnelling Method), Fiber Optic Communication System, SCADA System, Cathodic Protection System, Testing & Pre-Commissioning.

**PROJECT CHALLENGES**
- 60~70% works in Mountainous Section, Very Hard Rock, difficult to cut, do blasting works also
- Slopes between 20 to 45 degrees.
- Using the cable crane system for construction in mountainous section
- HDD Crossing at Sheikh’s Farm
- Crossing of Roads by Micro Tunneling Method

**RESULT**
Achieved the required quality targets and met the timeline to support the completion of the entire scope by the Client / Main Contractor CPECC.
**PROJECT**

Construction of Infrastructure for the Main Oil Terminal (MOT)
Abu Dhabi Crude Oil Pipeline Project (ADCOP) United Arab Emirates

**PRINCIPAL OWNER**
International Petroleum Investment Company (IPIC)

**CLIENT**
China Petroleum Engineering & Construction Corporation (CPECC)

**LOCATION**
Habshan – Fujairah, UAE

**REGION**
Middle East

**SERVICES**
Construction

**PROJECT SCOPE**
Construction of Tank Foundations (08 Nos.), Dykes, Ramps and Joining Road, Area Development, Fire Water Tanks (02 Nos.) etc.

**PROJECT CHALLENGES**
- Cutting of mountain by controlled blasting and jack hammer for collection of Material (0-300mm)
- Construction of Tanks Foundations in layer (11 Layers)

**RESULT**
Achieved the required quality targets and met the timeline to support the completion of the entire scope of the Main Oil Terminal by the Client / Main Contractor CPECC.
## List of Completed Projects

<table>
<thead>
<tr>
<th>S.NO</th>
<th>Year</th>
<th>Owner</th>
<th>Client</th>
<th>Location</th>
<th>Work Description</th>
<th>Value (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2010</td>
<td>Al-Waha Petroleum Company Ltd.</td>
<td>China Petroleum Engineering &amp; Construction Corporation (CPECC) IRAQ</td>
<td>Republic of IRAQ</td>
<td>Construction of 24'' x 261.00Kms EXLI Pipeline of AHDEB OIL Field Project – Republic of IRAQ</td>
<td>USD 87.00</td>
</tr>
</tbody>
</table>
▶ Construction of 100Kms of 48''-Dia. KP 272 to KP 382 with 5 Block Valve Stations, Road Crossings (Micro Tunnelling Method), Fiber Optic Communication System, SCADA System, Cathodic Protection System, Testing & Pre-Commissioning. (USD 120 Million)  
▶ Supply & Compaction of Gatch Material for Preparation of ROW for Abu Dhabi Crude Oil Pipeline Project (ADCOP) United Arab Emirates (USD 10 Million)  
▶ Main Oil Terminal (Civil Works Tank Foundations & Area Development) - Abu Dhabi Crude Oil Pipeline Project (ADCOP) United Arab Emirates (USD 100 Million) | USD 295.00 |
<table>
<thead>
<tr>
<th>Year</th>
<th>Company</th>
<th>Project Details</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>ENI Pakistan Limited</td>
<td>Inland Transportation 48”-dia., 34000 nos. of Line Pipes from Mina Zayed Abu Dhabi to Storages along ROW (400kms) for Abu Dhabi Crude Oil Pipeline Project (ADCO) United Arab Emirates (USD 15 Million)</td>
<td>USD 4.28</td>
</tr>
<tr>
<td>2007</td>
<td>ENI Pakistan Limited</td>
<td>Construction of Residential Camps for 4000 People for Abu Dhabi Crude Oil Pipeline Project (ADCO) United Arab Emirates (USD 25 Million)</td>
<td>USD 4.28</td>
</tr>
<tr>
<td>2002</td>
<td>Pak Arab Pipeline Co. Ltd. (PARCO)</td>
<td>The major activity is dismantling and removal of all existing piping and instrumentation works (From K-7 Wellhead) for subsequent reinstallation at another location (K-18 Wellhead). Complete relocation of South valve station, includes Civil, mechanical, E&amp;I work. Supply of all materials, fabrication testing and installation of pig launchers and receivers at relocated South valve Station also includes control panel, solar panel, construction and testing of 12” dia Duplex flow line completed at Kadanwari Oil and Gas field.</td>
<td>USD 189.20</td>
</tr>
<tr>
<td>2002</td>
<td>PKP Exploration Limited</td>
<td>Access Road &amp; Well Sites Construction</td>
<td>USD 0.89</td>
</tr>
<tr>
<td>1994-2001</td>
<td>Lasmo Oil Pakistan Limited</td>
<td>Construction of 21 Km Access Road, Well Site and Camp Site. Construction of Wellhead Piping, Civil Works and Flowlines 10” Dia Duplex SS for K-11 including Telemetry Cable laying, Instrumentation and Electrical Works. Construction of civil heavy foundations, installation of front end compressor, Fin Fan Air Cooler, interconnecting pipe works, electrical, instrumentation, insulation, painting works etc.</td>
<td>USD 8.17</td>
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<tr>
<td>No.</td>
<td>Year</td>
<td>Company</td>
<td>Supplier</td>
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<td>9</td>
<td>1999</td>
<td>Astaldi - Ferrocemento J.V. Sukkur</td>
<td>Astaldi - Ferrocemento J.V. Sukkur</td>
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<tr>
<td>10</td>
<td>1999</td>
<td>Tullow Pakistan (development) Ltd.</td>
<td>Tullow Pakistan (development) Ltd.</td>
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<td>11</td>
<td>1998</td>
<td>Gregory &amp; Cook S.A.</td>
<td>Gregory &amp; Cook S.A.</td>
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<tr>
<td>12</td>
<td>1993 - 1998</td>
<td>Pak Arab Pipeline Co. Ltd. (PARCO)</td>
<td>Pak Arab Pipeline Co. Ltd. (PARCO)</td>
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<tr>
<td>13</td>
<td>1997</td>
<td>Petrosin Ravi Engineering (Pvt) Ltd.</td>
<td>Petrosin Ravi Engineering (Pvt) Ltd.</td>
</tr>
<tr>
<td>No.</td>
<td>Year</td>
<td>Contractor/Client</td>
<td>Project Description</td>
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<tr>
<td>16</td>
<td>1991 - 1995</td>
<td>Union Texas of Pakistan Inc.</td>
<td>Construction of 12&quot; Pipe line from Buzdar(South) to Mazari.</td>
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<tr>
<td></td>
<td></td>
<td>Union Texas of Pakistan Inc.</td>
<td>Flowline Installation at Badin Gas Development Project.</td>
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<td></td>
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<td></td>
<td>Construction of Mali Dabhi - Mazari flow lines and pipelines</td>
</tr>
<tr>
<td>17</td>
<td>1989 - 1994</td>
<td>Sui Northern Gas Pipelines Limites (SNGPL)</td>
<td>Construction of 8&quot; ND 11.39 Miles Pipeline Takhtbhai to Sakhakot.</td>
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<td></td>
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<td>16&quot; dia Operational phase from SMS Sheikhupura Road to G.T Road Gujranwala along Jinnah Road.</td>
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<td>Preparation of right of way, Trench excavation in the rocky area for 16&quot; Dia high pressure gas pipeline at Dera Bughti, Pirkoh and Loti site in Baluchistan.</td>
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<td></td>
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<td>Construction of 16&quot; ND 20 km long pipe line from G.T road, Rawat to Faizabad.</td>
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<tr>
<td>18</td>
<td>1993</td>
<td>Clough Engineering Group. (Australia)</td>
<td>Construction of Flow lines and Trunk Line</td>
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<tr>
<td>19</td>
<td>1993</td>
<td>SHYDO, NWFP</td>
<td>Construction of Tunnel in Mountain for RHPP, 1.6 Km long</td>
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<tr>
<td>20</td>
<td>1993</td>
<td>Telecom Foundation</td>
<td>Laying of Primary &amp; Secondary Optic Fiber Cables</td>
</tr>
<tr>
<td>21</td>
<td>1992</td>
<td>Aquater SPA-Karachi</td>
<td>Construction of the N.D. 14&quot; gas line from Mari Gas Field to Fauji Ammonia-Urea Complex</td>
</tr>
<tr>
<td>22</td>
<td>1991 - 1992</td>
<td>Capital Development Authority (CDA)</td>
<td>Replacement of PRCC pipe over the river crossing on the Simly conduction Main lines from Filtration Plant to Kurang River near VP-6 Islamabad</td>
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<td>Construction of an extension line 36&quot; dia MS Cement Mortar pipeline construction of Main 2nd line ISLAMABAD</td>
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<td></td>
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<td>Construction of 2Nos. Nullah crossing for re-routing of 16&quot; Dia Conduction main 2nd line near Noorpur Shahan and Quaid-e-Azam University.</td>
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<tr>
<td>23</td>
<td>1992</td>
<td>Shynrio Corporation Japan (ETV Centre)</td>
<td>Electrical, HVAC and plumbing Works at ETV Centre (PTV2)</td>
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<tr>
<td>24</td>
<td>1992</td>
<td>Pakistan State Oil Co. Ltd.</td>
<td>Construction of 24&quot; dia main pipeline to connect F.O. Buffer Terminal with Pipri Terminal</td>
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<td></td>
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<td>Construction/Installation of Feeder Line, wellhead surface fittings and well fencing at Adhi Well - 10</td>
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<tr>
<td>26</td>
<td>1991</td>
<td>Amoco Pakistan - Exploration Company</td>
<td>Construction of Location &amp; its Access Road</td>
</tr>
<tr>
<td>27</td>
<td>1988</td>
<td>Karachi Shipyard &amp; Engg. Works Limited.</td>
<td>Gathering Pipeline from Dhakni Wells 1,2,3, &amp; 4 to Dhakni Treatment Plant</td>
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HSE ZERO LTI CERTIFICATES

ISO 14001 & OHSAS 18001 CERTIFICATES