



ENAR Petrotech Services



Ministry of Energy (Petroleum Division)
Government of Pakistan

Engineering Design and Project Management Consultant



www.enar.pk





Vision

To achieve a leading role as a design engineering and consultancy company in Oil & Gas, Petrochemicals, alternate energy and other process related sectors.

Mission

ENAR is fully committed to be an independent professional design engineering organization providing quality engineering & Project Management consultancy services with integrity, efficiency and cost effective manner to domestic and international clients, promoting long-term business relationship & achieving at most levels of client satisfactions.





About Us

ENAR Petrotech Services (Pvt.) Ltd. was formed in 1972 as a division of National Refinery Limited (NRL). In July 1974 ENAR was converted into a Private Limited Company, and become fully owned subsidiary of State Petroleum Refining & Petrochemical Corporation (PERAC). Currently, ENAR is working under the administration control of State Engineering Corporation (SEC) - Ministry of Industries & Production, Government of Pakistan.

ENAR Petrotech Services (Pvt.) Ltd. is 1st Government an **ISO 9001:2008, ISO14001:2004 & OHSAS 18001:2007**, Certified multi-discipline integrated design engineering consultancy organization in Pakistan, with more than 40 years of experience in oil & gas, storage and cross-country pipelines, chemicals, petrochemicals, fertilizers, hydrocarbon processing and other related process industry sectors.

ENAR has capabilities in project development/planning, feasibility studies, process simulation & design, FEED package, detailed engineering design, project management, procurement assistance, construction /construction supervision and Commissioning / Commissioning Assistance services. ENAR provides operation & maintenance services in oil & gas sector. ENAR also offers its client Engineering Procurement Construction & Commissions (EPCC) services through its association and affiliation.

After attaining significant growth in local business, ENAR started exploring new horizon in foreign market in the year 2011



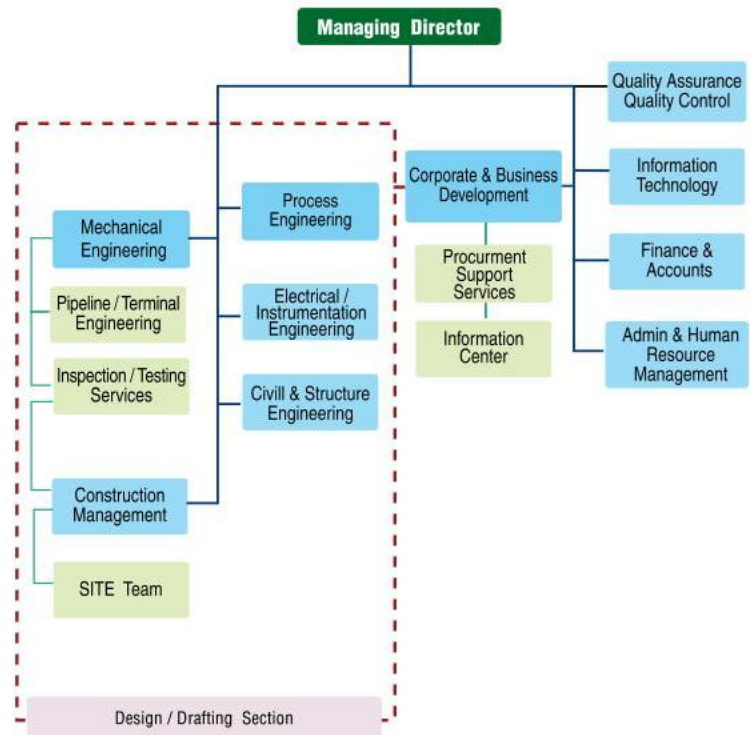
ENAR Petrotech Services (Pvt.) Ltd.

Organizational Setup

ENAR has a well - established structure that allows the Company to undertake any challenge within the purview of the scope of services and promotes the growth of the company.

Advent In Education Arena

ENAR is dissipating its technical expertise through Continuing Professional Development (CPD)/Professional Development Program (PDP) Courses for engineers in the field of oil & gas, engineering disciplines using state of art educational techniques with highly qualified faculty.





Corporate Strategy

To develop and apply a human resource policy which permits harnessing the requisite technical know-how from within the country and is firmly committed to a continuous training program.

To further strengthen its distinctive engineering consultancy competence in undertaking upcoming projects.

To build competent and skilled workforce to continuously develop and improve our skills and business practices.

To undertake design and engineering of industrial / commercial projects aimed at using country's own manufacturing capabilities and resources.

To diversify and make inroads into other upcoming sectors such as power generation through Alternate Energy Sources.

To extensively use modern analytical tools and techniques, information systems technology and engineering software/ programs including Computer-Aided-Design in order to improve quality of services and internal productivity.

To achieve customer's satisfaction and expectation as the driving force behind the spirit to meet challenges and reach the excellence in whatever job ENAR undertakes.



ENAR Petrotech Services (Pvt.) Ltd.

Our Core Values

Client Satisfaction

At ENAR, the satisfaction of our valued clients is the cornerstone around which we appraise the success of every project. We stand out with our tailored skills and depth of understanding of our client's needs.

Employee Satisfaction

At ENAR not only do we provide a career, but also we strive to continuously contribute to the well-being and self-development of our people. We believe that our growth is pivoted on the growth of our people.

Integrity

Our Fervent commitment to high ethical standards on every assignment we undertake has earned us unrivaled reputation. Legacy of past projects has ensured continuous success while opening door for future opportunities.

Innovation & Excellence

At ENAR, we see every new assignment as an opportunity to innovate through our broad-based understanding of the industry. Our innovation is tied with our strong commitment to excellence in everything we do, resulting in delivering unmatched services to our valued Clients.

Team work

At ENAR, Team-Together Everyone Achieves More. Team Work is one of the fundamental pillars of Enar's work culture. We at Enar operate as a family where individuals at all levels work closely together to contribute to the growth and development of the organization.



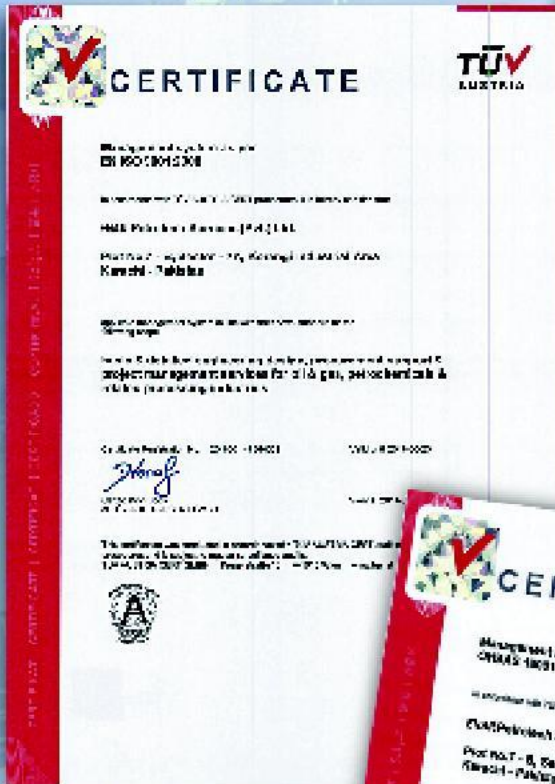
Our Commitment

We pride ourselves in our awareness and application of quality control/assurance and meeting the requirements of all the stake holders.

Integrated Management system

ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007

ENAR is the Integrated Management System (IMS) Certified which based on integrating the requirements of Quality Management System (ISO 9001:2008), Environmental Management System (ISO 14001:2004) and Occupational Health & Safety Management System (OHSAS 18001:2007)



Range of Services

- Services being offered by ENAR cover all Engineering & Technical requirements from project identification to successful operation.
- Throughout the Project Cycle ENAR is tailored to meet project needs and can be inducted at any point in the typical development cycle.





Capabilities

- Business Development
- Engineering
- Specialized Engineering Studies
- Safety & Environmental Engineering
- Procurement / Procurement Assistance
- Energy Management
- Project Management
- Construction Management Services
- Inspection Services
- Operation & Management
- Annual Turnaround (ATA) Shutdown maintenance
-For detail refer ENAR website



ENAR Petrotech Services (Pvt.) Ltd.

Business Development

- Project Identification/Screening Studies
- Sectorial/Feasibility Studies
- Market Research Studies
- Surveys and Pricing Analysis
- Project Planning/Development Support
- Plant Evaluation/Valuation
- Energy Planning & Conservation Studies
- Commercial Evaluation of Plants , Equipment etc.

Engineering

- Conceptual Engineering Design (CED)
- Feasibility Study
- Basic/Front End Engineering Design (FEED)
- Detailed Engineering Design (DED)

Engineering Activities

Our Engineering packages tackle all related engineering disciplines, and generally contain (but are not limited to) the following activities / deliverable.

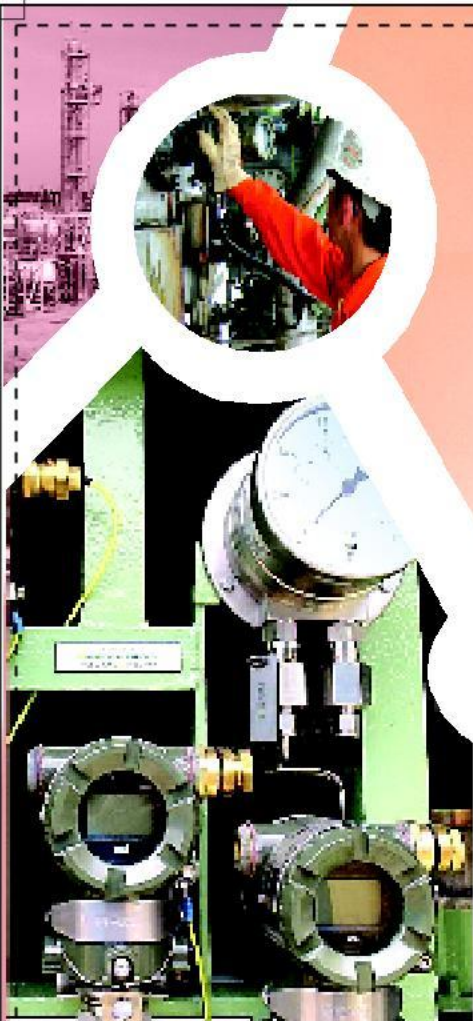
Process

- Process Flow Diagrams (PFD's) and Process Simulation Report
- Piping & Instrumentation Diagrams (P&ID's)
- Heat & Material Balance for Process & Utilities.
- Process Calculation Report (line sizing, equipment sizing etc.)
- Process Design Basis
- Equipment List and Process equipment Data Sheet
- Instrument Process Data sheet
- Line schedule, Piping Process Data and tie-in-List
- Operating instruction/Process Control Philosophy Report
- Process Safety Design, e.g. Hazop, Hazid, Sil & Hazardous Area Classification Report & Drawing
- Fire Fighting Facilities Design

Piping & Mechanical

- Stress & Surge Analyses
- Piping General Arrangement (GA) Isometric Drawings
- Structure & Pipe Rack General Arrangement
- Piping Works Specifications & Data Sheets
- Equipment Sizing and Hydraulic Calculations
- Storage Tank & Vessel Specification & Data Sheets





- General Arrangement & Layouts for Storage Tanks & Pressure Vessels

Instrumentation

- Instrumentation Specifications & Data Sheets
- Instrument Index, ESD System Cause and Effect Matrix
- Terminal Automation System Architecture
- Instrument Hook Up Drawings
- Cable Routing Layout
- Fire, Gas Detector Alarm & CCTV System Layout

Electrical

- Electrical Specifications & Data Sheet
- Single Line Diagrams
- Equipment Layout Drawings
- Cable Routing Layout
- Hazardous Area Classification

Civil & Structural

- Design of Pipe racks & Supports
- Operating platform design

- Equipment Foundation Design
- Other structural RC & Steel Designs

Specialized Engineering Studies to Analysis

At ENAR, we have dedicated and experienced engineers who are ready to provide specific Engineering Studies / Analysis that may be requested by any party (client, contractor, etc.) at any stage of the Project.

Safety & Environmental Engineering

ENAR has the adequate expertise to provide services related to Hazard and operability (HAZOP) of the Processes to ensure the design is safe from operability point. Node based P&IDs are developed for this purpose.



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Procurement/Procurement Assistance

- Preparation of Material Requisition
- Pre-qualification of Vendors, PC Contractors
- Preparation of Procurement Document
- Request for Quotation (RFQ)
- Bid Evaluations (technically & commercially)
- Preparation of Contract Document
- Placement of orders (LOI)
- Expediting
- FAT / Inspection (QA/QC) of equipment and material.

Energy Management

- Energy Planning
- Demand Forecasting and modeling, Supply analysis
- Investment planning & optimization
- Pricing systems development
- Renewable sources of energy
- Energy Data base
- Simulation of Energy Systems
- Energy Conservation: Energy Surveys
- Audits & conservation studies

Project Management

- Time & Resource Scheduling
- Client Orientation

- Performance Monitoring
- Cost & schedule control
- Co-ordination of engineering activities
- Tender Preparation & Bid Evaluation
- Quality Assurance
- Installation & Commissioning

Construction / Construction Supervision

- Equipment and machinery installation
- Piping fabrication/erection
- Tank fabrication/erection
- Fabrication of steel structures
- Witness tests, welding and facility installation
- Review of non-destructive testing report
- Inspection of construction works
- Civil works like equipment foundation, building, roads, drainage System and Earth works etc.
- Electrical/Instrumentation work
- Installation & construction works, including instrument installation and maintenance
- Site Acceptance Test (SAT)





Inspection/Testing Services

ENAR'S Professionals Carried out Inspection of following Facilities/Plant :

- LPG Processing Plant
- LPG Storage Bottling Plant
- LPG Air mix Plant

Other Inspections carried out during construction activities are as follows:

- Welding procedure qualification, Welder qualification
- Radiography
- Hydro Test, Vacuum Test,
- Visual Inspection, Welding Inspection
- Magnetic Partial Inspection (MPI) &
- Di-Penetrating Test (DPI)
- Alignment Inspection

Operation & Management

- Operation & Management
- Plants Maintenance Support
- Product Marketing

Annual Turn Around (ATA) Shutdown & Maintenance

- Preventive maintenance services for process control system and field instrumentation
- Field instrument calibration service for all types of pneumatic and electronic instruments
- Instrument cabling and tubing
- Instrument installation / erection
- Over hauling and testing of control valve

.....For detail refer ENAR website



ENAR Petrotech Services (Pvt.) Ltd.

Our Tools

ENAR is using well-known software on Core i7 processor based systems for process simulation and rating, hydraulic and surge analysis, design engineering and detailed drawings. Our capabilities in use of these software improve the efficiency, quality and precision of our work. In addition, ENAR has also developed in-house software applications and engineering tools and has its own research analysis/assessment utensils to setup the exclusive analysis requirements of its projects

Engineering Softwares

The following Engineering packages are being used in our offices depending on the projects requirements:

Process Engineering

- HYSYS Aspen Tec Suite 7.3, 8.3
- AMSIM (Amine Simulation)
- HAZOP Support (PHA HAZOP 6.0)
- Design of 3-Phase & 2-Phase Separator
- Reciprocating Compressor Performance Evaluation
- KG Tower 5.0/Glitsch Grate (Tray Sizing)
- EPA ISCST3 (Emission Model) & EPA Tanks
- KORF (Line Hydraulics) 3.0

- PIPE NET (Fire Fighting System, Hydraulic)
- Schlumberger Pipe Sim 2007
- Aspen Crude
- Fisher First Vue
- BP Cirrus 7.0

Piping / Mechanical Engineering

- CAESAR (Flexibility Analysis)
- TRIFLEX (Stress Analysis)
- CADWorx 2009 Plant Professional
- Hydraulic Analysis (with heat loss) Compress (Pressure vessel)





- Pipe - Flow (Including Networking)
- Pipe Calculation
- Pipe Line Tool Box

Equipment

- HTFS 7.3 (Shell Tube Heat Exchanger - TASC)
- HTFS (Air Cooled Heat Exchanger - ACOL)
- STAAD (Steel Structure Design)
- ANSYS (General Finite Element Design)
- HTC (STX, ACX)
- COMPRESS (Vessel and Heat Exchanger Design)
- Aspen Flare Analyzer 7.3

PIPELINE SURGE ANALYSIS

- PAULA Plus

Civil / Structural

- Auto CAD Revit Structure Suite 2011

Project Planning & Management

- Microsoft Project Server/Professional



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- Primavera Professional Project Management

Instrumentation

- INTools
- Control Valve Calculation
- Safety Valve Calculation
- Fisher
- Daincl Orifice Calculation
- Groth Pressure Relief Values.
- Crosby

Electrical

- ETAP 6.0.0
- Dilux
- Calculex

Fire Fighting

- ELITE FIRE Version 6.02.08
- Shell FRED 4.0
- Corrosion Analysis (Predict 4.0)

General Software

- AutoCAD Release 14
- Intergraph CADWorx & Rivit 10
- Microsoft Office

Achievements

ENAR has been involved in almost all major Oil & Gas projects in Pakistan and Provide FEED, Basic Engineering, Detail Engineering, Procurement/Procurement Services, Construction/ Construction Supervision, Commissioning and Operation & Management for:

- OGDCL's Qadirpur Complex, Dakhni LPG / Sulphur Recovery Plant, Nandpur & Panjpir Project, Uch Gas Processing Plant-I & II, Kunnar and Bobi LPG Plants, FimKasar LPG dismantling Plant, Gharihassu Rehabilitation Project, Chanda LPG Plant, Pirkoh Relocation & Compression, Pakistan
- OGDCL Qadirpur Projects: Capacity Enhancement, 600 MMscfd Expansion, Permeate Compression & Installation of Pirkoh Compressors, Pakistan.
- OGDCL: EPCC Services for Qadirpur Interim Compression Project, Pakistan
- PSO : Fuel Farm Facility at Lahore Intl. Air Port, Pakistan.
- Asia Petroleum : Pipri - Hubco - Furnace Oil Pipeline Project, Pakistan
- PARCO's (Pak-Arab) Mid-Country Refinery, Pakistan
- EPCC Services for National Refinery Revamps Project, Pakistan
- EPCC Services for State of the Art Condensate Refining Facility in Pakistan
- ENAR has also honor of successful completion of a study for development of Vision & Feasibility for setting up Petrochemical Production Facilities in Pakistan with collaboration of KBC-UK.
- Pakistan Petroleum Ltd (PPL): Habib Rahi Limestone and ADHI-III Projects, Pakistan
- Byco: Revamp study and design for 18,000 bpd to 30,000 bpd, Pakistan
- Annual Contracts with OMV for Design Engineering Services, Pakistan
- Annual Contracts with UEP for Design Engineering Services, Pakistan
- Bankable Feasibility Study for ERL-BMRE Projects, Bangladesh for Islamic Development Bank. Bangladesh
- Detailed design of Seperator Skid for ATG Limited, FZC, UAE.For detail refer ENAR website





Our Clients



OGDCL Oil & Gas Development
Co. Limited, Pakistan.



OMV (Pakistan) Exploration
GmbH



PPL Pakistan Petroleum
Limited



ARL Attock Refinery
Limited, Pakistan.



United Energy Pakistan Ltd.



ENAR Petrotech Services (Pvt.) Ltd.



BP Pakistan Exploration
and Production Inc.



Eni Pakistan Limited
(Formerly LASMO Oil Pak)



PSO Pakistan State
Oil Ltd.



NRL National Refinery
Limited, Pakistan.



PEL Petroleum Exploration
(Pvt.) Limited, Pakistan



Sui Southern Gas
Company, Pakistan

SSGC



Sui Northern Gas
Pipeline Ltd. Pakistan

Our Clients



Shell Pakistan



Byco Refinery Ltd.
Pakistan



Pak-Arab Refinery Company,
Pakistan.



Pak-Arab Pipeline Company
Pakistan.



MOL Pakistan:



Ministry of Petroleum & Natural
Resources (MP&NR) Pakistan.



PIDC Pakistan Industrial
Development Corporation



Engro Pakistan



Orient Petroleum Ltd.,
Pakistan



Pakistan Refinery Ltd.



Attock Petroleum,
Pakistan





Our Clients



Total Oil Pakistan Limited



ABB Lummus Pakistan.



BHP Billiton Pakistan



CPECC China Petroleum Engineering & Construction Corp. Pakistan.



Chevron Petroleum Pakistan



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Lotte Pakistan PTA Ltd.



Zaver Petroleum Pakistan



Petroleum Institute of Pakistan



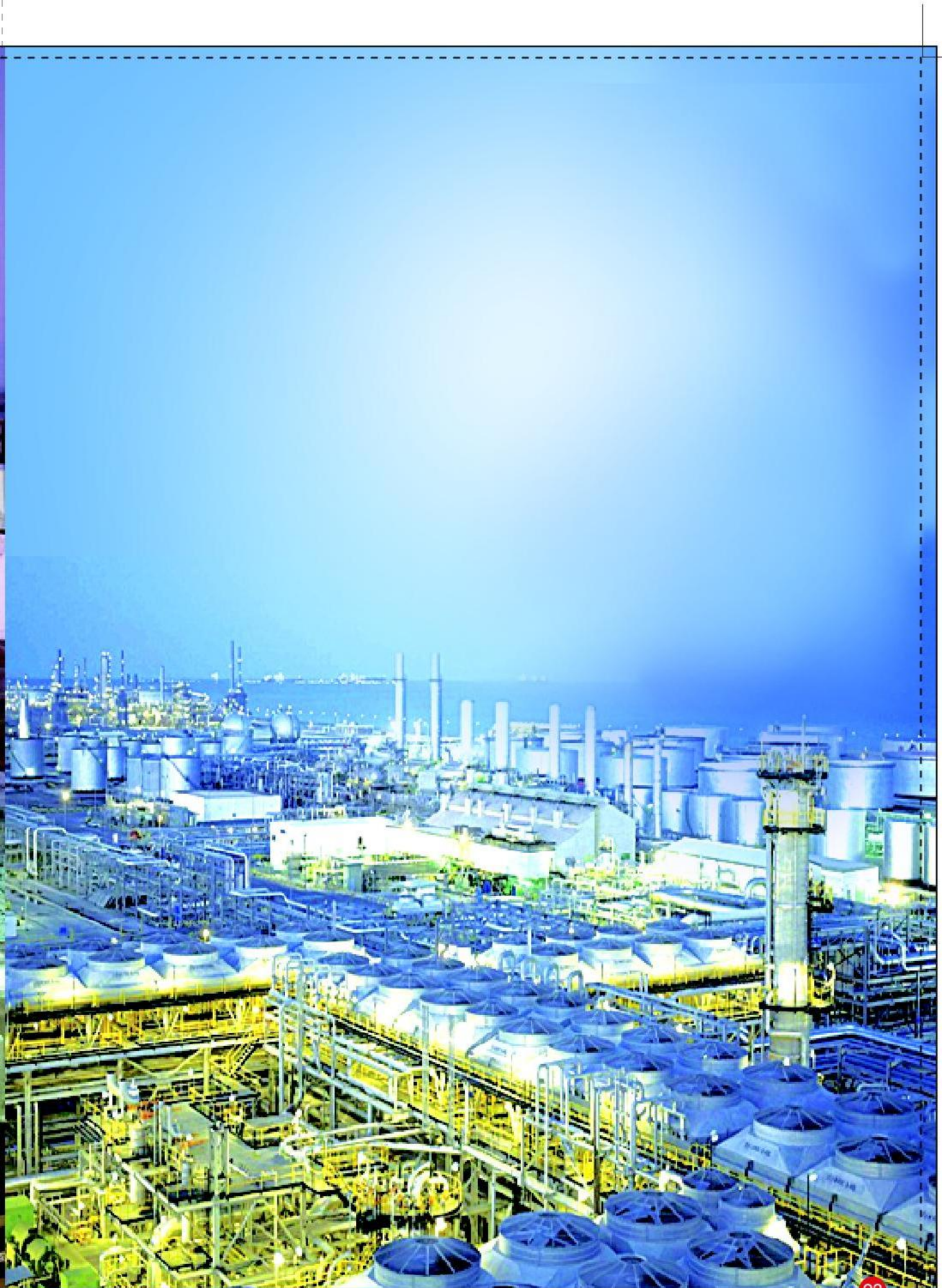
National Bank of Pakistan



ERL Eastern Refinery Ltd. Bangladesh.



Tullow Oil Plc Pakistan





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