



NUBERG EPC
Making Ideas Happen

Engineering

Technology
Know-How

Procurement

Construction

Project
Management

Caustic Soda Project Lifecycle and Nuberg's Success in Chlorine & Derivatives Industry

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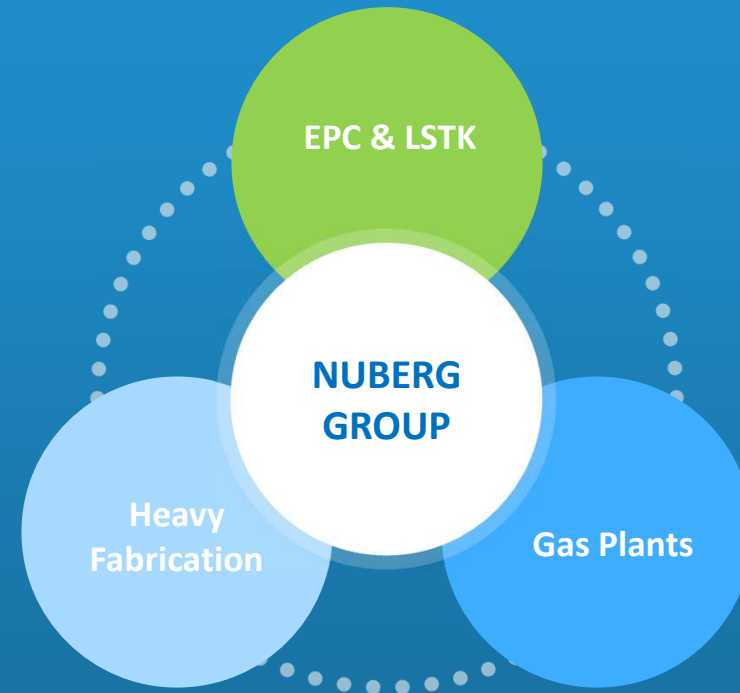
11th TECHNICAL SEMINAR

WCC GST SAFETY WORKSHOP

TABLE TOP EXPO

November, 14-16, 2018
Monterrey - Mexico

Chemicals & Fertilizers,
Nuclear & Defence,
Hydrocarbons, Steel



Pressure Vessels & Reactors,
Heat Exchangers, Columns &
Towers, Tanks

Hydrogen, Compressed
Air System, PSA –
Nitrogen, PSA/VP
SA -
Oxygen

NUBERG EPC

Founded in 1996, Nuberg EPC is a global EPC and turnkey project management company providing solutions with basic engineering and process know-how either from its own intellectual property or licensed from technology suppliers.

What We Do In Chlor Alkali

Technology & Engineering Services

Process Design & Technology

- Feasibility Study
- Product & Technology Development
- Process Know-how & Licensing
- Basic Engineering

Front End Engineering Design (FEED)

Project Management Consultancy (PMC)

Detail Engineering

- Civil & Structural Engineering
- Layout & Piping
- Rotary & Static Equipment
- Electrical & Instrumentation

Construction Management

Commissioning Services

Operation & Maintenance Services

EPC & LSTK Solutions

Greenfield-LSTK Project Execution

EPC Project Execution

Relocation, Expansion of Projects

Composite MEP Packages

Manufacturing of Major Equipment

Manufacturing

Columns & Towers

Pressure Vessels

Reactors/Columns

Heat Exchangers

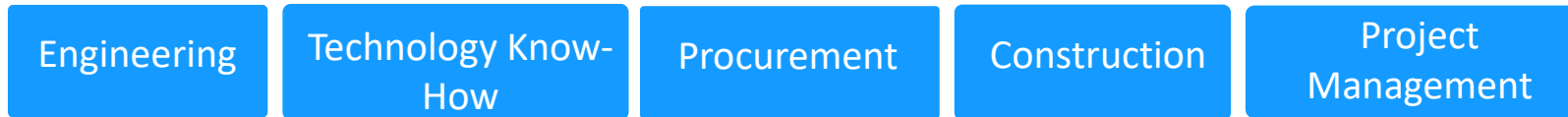
Primary Gas Cooler

Air Pre Heater

Waste Heat Recovery Boiler

Tanks (API Tank, Conical Roof, Rectangular Tanks)

What We Do



Engineering

- Basic Engineering
- Front End Engineering Design (FEED)
 - Detailed Engineering
- Civil & Structural Engineering
 - Layout & Piping
- Rotary and Static Equipment
- Electrical & Instrumentation



Process Design and Technology

- Feasibility Study
- Product & Technology Development
- Process Know-how & Licensing



Procurement

- Vendor Development & Qualification
- Cost Estimation & Purchase
- Super Capability Assessments
 - Quality Inspection and Surveillance



Project Management

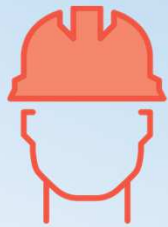
- Technical & Commercial Documentation
- Site Survey & Project Schedule
- Construction & Procurement
- Commissioning and Hand Holding



Construction

- Construction & Project Management
 - Installation and Erection of Equipment, Piping & Systems
 - Mechanical, Instrument and Electrical Work
 - Site Inspection & Safety Enforcement





World Class Engineering

- World class engineering set up with team strength of 300+ engineers
- In-house set-up for FEED, Basic & Detailed Engineering
- Latest Tools & Software: PIRS, AUTOCAD, HTRI, PRIMAVERA, PV Elite, ISOMAC, ProSteel, STAAD.Pro
- Plant 3D modeling through PDMS and Solidworks



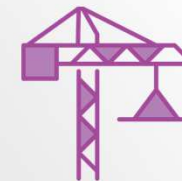
State-of-the-art Manufacturing

- 115000 sqm state-of-the-art heavy fabrication facility
- Cold rolling capacity of 100 mm and handling capacity of 200 ton
- Certifications: ISO9001:2008, ISO14001:2004 & OHAS 18001:2007
- ASME, U,U2, R, IBR accreditation



Swedish R&D Facility

- R & D facility in Sweden for specialty chemicals
- Proprietary technology for hydrogen peroxide and sulfuric acid



International Quality Construction

- Construction team of 200+ professionals with global experience
- Proven track record of delivering projects with international quality and standards
- Experience of working with international PMCs



Global Knowledge Base

- Global experience in working with local codes, norms and standards
- Executed more than 60 turnkey projects in 30+ countries
- Strong global knowledge base with industry experience of over two decades

Health and Safety



Nuberg EPC is committed to provide protection against health and safety risks for its employees and all other stakeholders involved in completion of a project. We take stringent actions required to provide a safe environment for all stakeholders thereby minimizing the hazards. A proper management of risks control is the only solution for a safe environment and in Nuberg EPC we follow every aspect of risk control with integrity.

Stringent international quality and safety process standards are maintained. All major international certifications and accreditations are in place. We follow a world class HSE policy and safety is a paramount attitude we foster towards every team member working on projects. **With zero accident since its inception in 1996, Nuberg EPC takes pride in being considered as one of the safest contractors.** This repositions the company as one of the leaders in EPC industry.

NUBERG EPC Success Story in Chlor Alkali Industry

Caustic Chlorine Worldwide EPC & LSTK Projects



Inovyn, Sweden

Caustic Soda Plant

Client: Inovyn

Location: Stenungsund, Sweden



Tasnim Chemical Complex
Bangladesh

Caustic Soda Plant

Client: TASNIM

Location: Dhaka, Bangladesh



Al Ghaith Industries
Abu Dhabi

Caustic Soda Plant

Client: Al Ghaith Industries

Location: ICAD, Abu Dhabi



Fluoder
Paraguay

Caustic Soda Plant

Client: Fluoder

Location: Villeta, Paraguay

Caustic Chlorine Worldwide EPC & LSTK Projects



SACHLO
Saudi Arabia

Caustic Soda Plant

Client: SACHLO

Location: Riyadh, Saudi Arabia



SARL SASKO
Bangladesh

Caustic Soda Plant

Client: SARL SASKO

Location: Biskara, Algeria



Confidential
Morocco

Caustic Soda Plant

Client: Confidential

Location: Morocco



Egyptian Petrochemical Company
Egypt

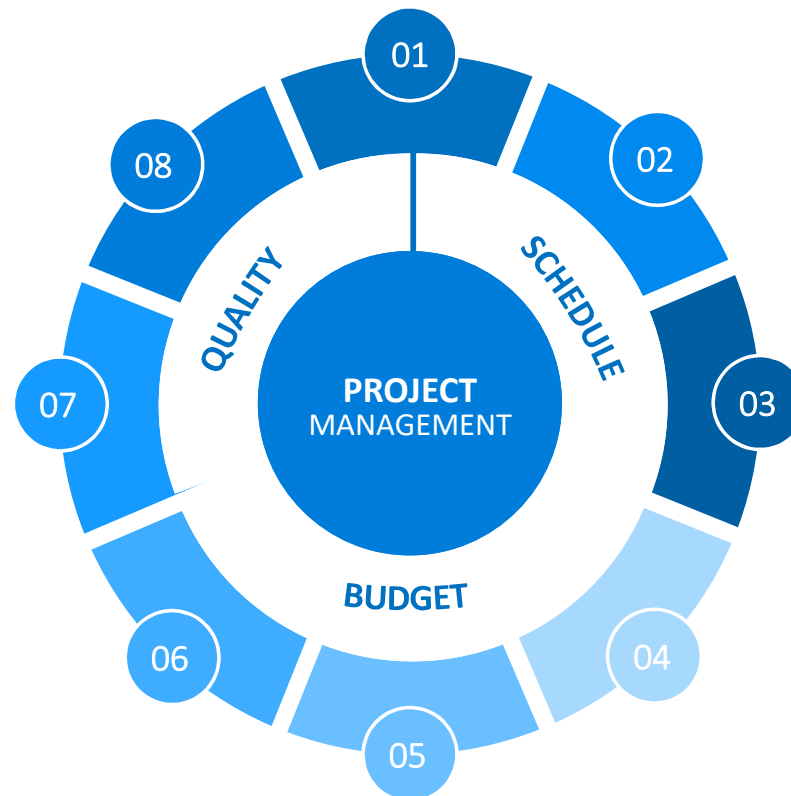
Caustic Soda Plant

Client: Egyptian Petrochemical Company

Location: Alexandria, Egypt

Project Execution and Management Methodology

Project Matrix



Schedule

Microscopic planning and scheduling activities to the last point.

Budget

Proper planning and regular execution monitoring are prerequisite to control budget.

Quality

Essential for customer satisfaction and plant life.

01 Scope

Clear scope and brief keeps project in budget and time.

02 Planning

Planning all activities for better execution.

03 Monitoring

Tracking and reporting details minutely for quality delivery.

04 Engineering

Dedicated teams, equipped with latest technology and software, to deliver safe, sustainable and cost efficient plants.

05 Procurement

Procurement team compliments processes for quality and timely execution.

06 Construction

Specialized teams and approved contractors with global experience deliver faster and better.

07 Commissioning

Dedicated and experienced teams for smooth commissioning, training and handover of project.

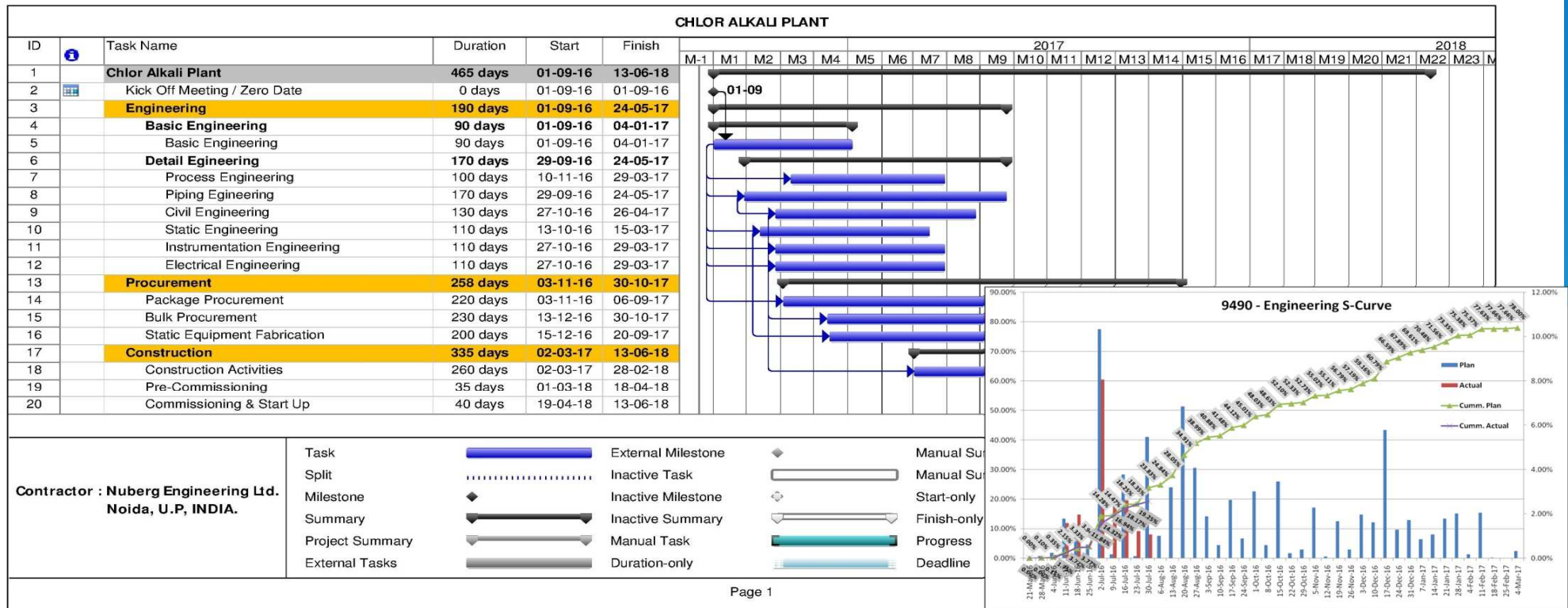
08 HSE & Quality

HSE, quality control and audit is of paramount importance and integral part of project life cycle.

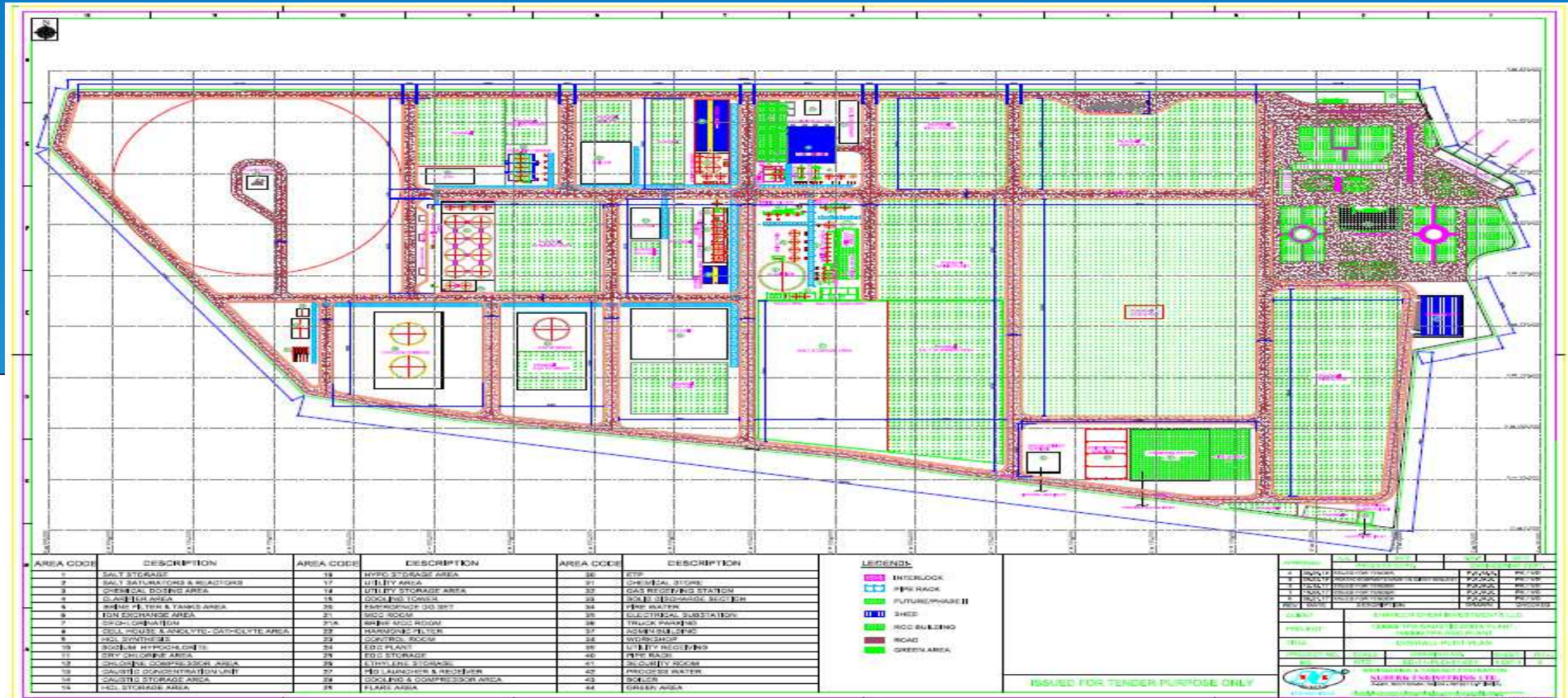
Project Scope Matrix

S. No.	Description	Performed by	Remarks
1	Project Management Project Review & Steering Committee Project Execution Team		
2	Project Management Consultant (PMC)		
3	Process & Technology Know-how		
4	Adaptation of Basic Engineering Package		
5	Detail Engineering Package		
6	Procurement & Logistics		
7	QA & QC		
8	HSE		
9	Civil Construction		
10	Mechanical Construction		
11	Electrical Construction		
12	Control & Instrumentation Construction		
13	Fire Fighting & Gas Detection Construction		
14	HVAC Construction		
15	Commissioning		
16	Training & Handover		

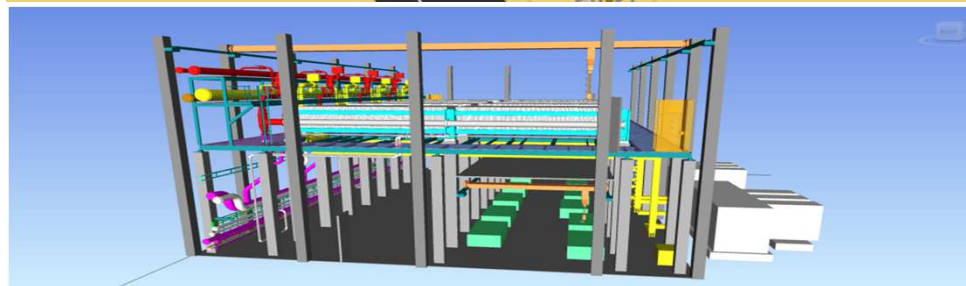
Project Schedule & Monitoring



Sample Layout – Caustic & EDC Complex

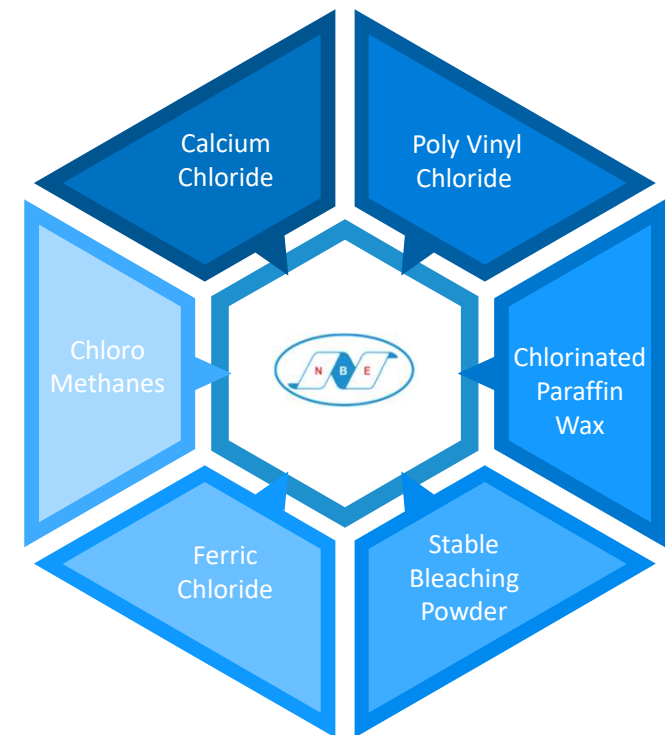


Sample 3D Modeling

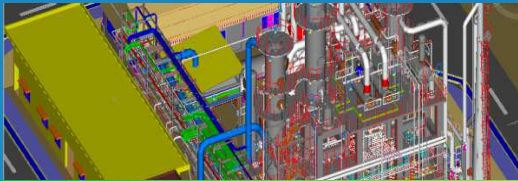


Nuberg EPC's Vision Today & Tomorrow

- Nuberg has strongly established its leadership in Caustic Chlorine industry.
- Nuberg has plans to expand its portfolio to provide the solutions of the downstream integration of the Caustic Chlorine process.
- Caustic soda has provided most of the return on the investment in the last several decades but chlorine has been making only modest contributions.
- The usual by product of Chlor Alkali process is Hydrochloric Acid which has storage & export limitations. Moreover, the value addition down the chain is not much for Hydrochloric Acid.
- Few of the products which offer much higher realization in the value chain and so at our immediate attention are:
 - Calcium Chloride
 - Stable Bleaching Powder
 - EDC to PVC
 - Ferric Chloride
 - Chlorinated Paraffin Wax
 - Chloro Methanes



Calcium Chloride Worldwide EPC & LSTK Plants



Al Ghaith Industries Abu Dhabi

- **Client:** Al Ghaith Industries
- **Location:** ICAD, Mussafah, Abu Dhabi
- **Commission:** 2017
- **PRODUCT MIX:**
 - Calcium Chloride
 - CO₂



Chimcomplex Romania

- **Client:** Chimcomplex
- **Location:** Onesti, Romania
- **Commission:** Under Execution
- **PRODUCT MIX:**
 - Calcium Chloride
 - CO₂



TCI Sanmar Chemicals Egypt

- **Client:** TCI Sanmar Chemicals
- **Location:** Port Said, Egypt
- **Commission:** Under Execution
- **PRODUCT MIX:**
 - Calcium Chloride
 - CO₂



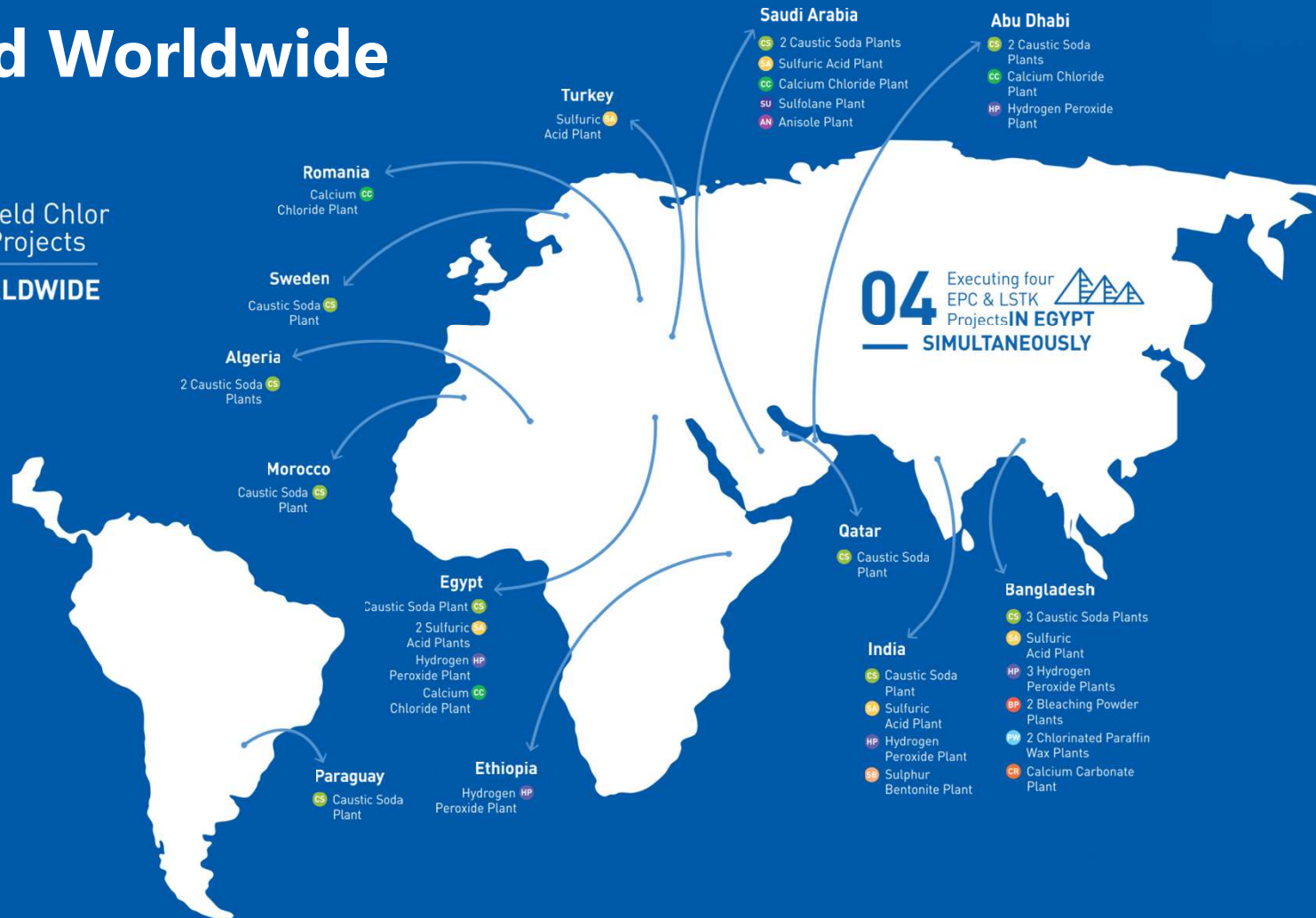
SACHLO Saudi Arabia

- **Client:** SACHLO
- **Location:** Riyadh, Saudi Arabia
- **Commission:** Under Execution
- **PRODUCT MIX:**
 - Calcium Chloride
 - CO₂

In addition, Nuberg EPC has executed many turnkey projects for Stable Bleaching Powder (SBP), Chlorinated Paraffin Wax (CPW) and Ferric Chloride across the world.

Turnkey Projects Delivered Worldwide

 **15** Greenfield Chlor Alkali Projects
EXECUTED WORLDWIDE



Thank You !!

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