



We are the

**SOLUTION**

We are **TOYO** Engineering



**TOYO**  
ENGINEERING

Toyo Engineering India Pvt. Ltd.

The world continues to gallop towards perfection at an extraordinary pace. Every new project is larger in scale and complexity than its predecessor, thereby posing greater challenges.

Surmounting these challenges needs reliable solutions and that is exactly what WE, at Toyo Engineering do. We deliver SOLUTIONS.

Our capabilities reach beyond the ordinary and we deliver what most would call 'impossible'... hitherto neither imagined nor achieved.

Welcome to the world of Toyo Engineering - India. Experience our strengths and commitment to overcome challenges. Partner us in your endeavours and benefit from SOLUTIONS that we bring to you.



# TOYO's MVV

## Group Mission

Engineering for Sustainable  
Growth of the Global Community

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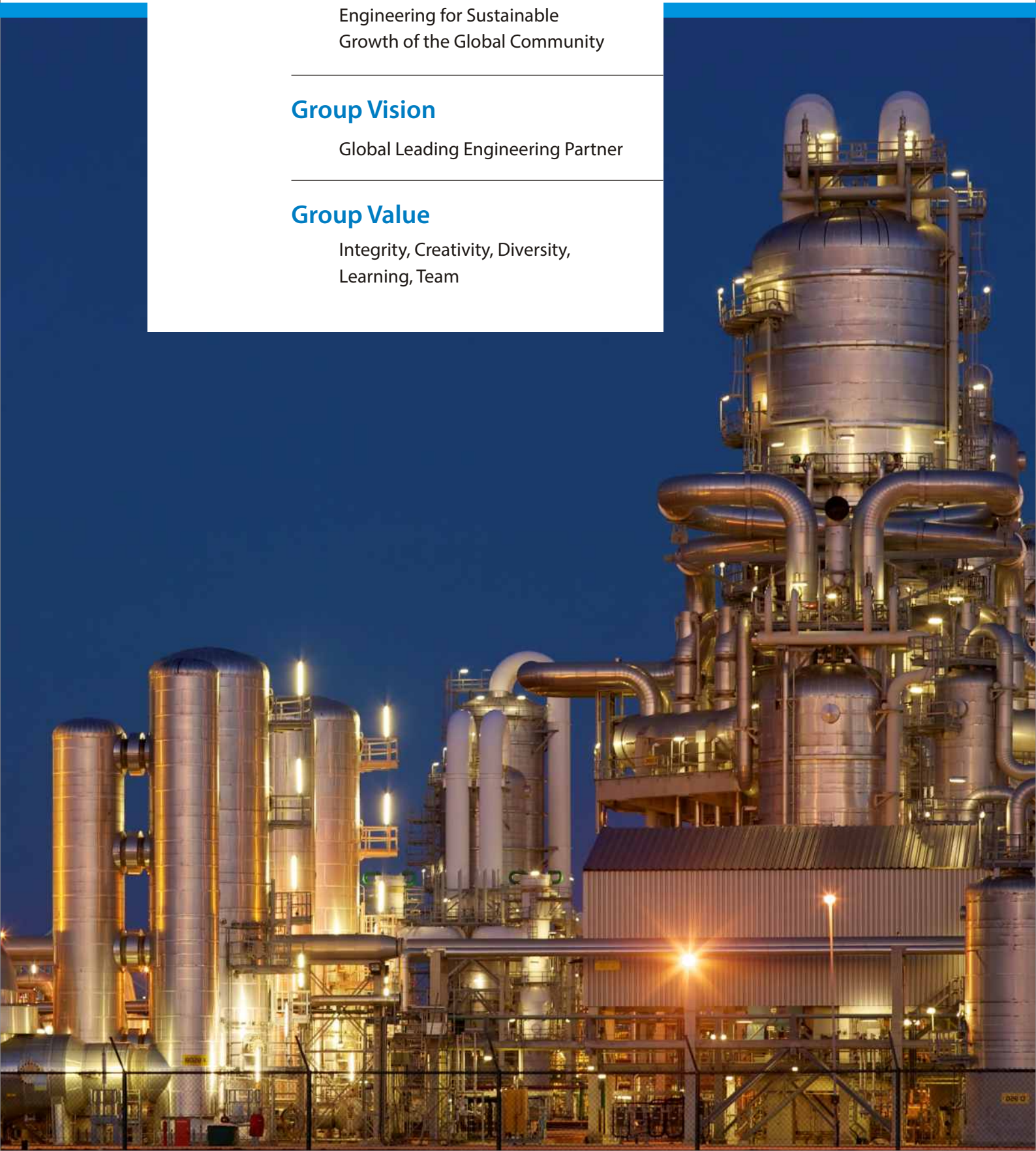
## Group Vision

Global Leading Engineering Partner

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## Group Value

Integrity, Creativity, Diversity,  
Learning, Team



# TOYO ENGINEERING CORPORATION, JAPAN

Our parent company, Toyo Engineering Corporation, Japan (Toyo Japan) is the flagship company of Toyo Engineering Group (TOYO). It began its operations in 1961 and ever since it has been achieving newer heights in worldwide projects.

Toyo Japan offers comprehensive solutions for executing projects and supports client for the entire life cycle of the project by undertaking assignments for pre-project activities, activities during project implementation and also post-commissioning of project. These activities include feasibility study, providing own technologies, basic design, engineering, procurement, project management, construction, commissioning and debottlenecking study. This ensures smoother and simple project execution under single contractual responsibility.

Toyo Japan specializes in Hydrocarbon Sector such as Energy, Oil Refining, Petrochemicals, Fertiliser as well as non-hydrocarbon fields such as Industrial plants and Infrastructure.

**50** years of experience

**10,000** plus team members

**17** Country offices worldwide

**1 Goal** - to become the  
'Global Leading Engineering  
Partner'.



Toyo Japan has developed proprietary technologies such as the ACES21® for Urea manufacturing process, CoreFlux (Cold Reflux technology) for C2/C3/C4 Recovery, Methanol Synthesis and Di-Methyl Ether (DME) technology. Through joint research, contracted studies and its R&D Engineering; Toyo Japan continually seeks to develop technologies for the future.

Toyo Japan provides total value to worldwide clients for their projects by leveraging in-house expertise complemented with support from its strong global network of subsidiary companies and offices.

The world around TOYO continues to get smaller as it spreads its wings across the seas, sharing its expertise, knowledge and technology that Japan is known for.



# TOYO ENGINEERING INDIA PVT. LTD.

In its 3 decade long journey Toyo Engineering India Pvt. Ltd. has brought to life prestigious projects. It was the year 1963 when Toyo Japan initiated activity in India in the fertiliser sector. Encouraged by the growth potential in India, Toyo Japan launched its Indian office in 1976 and Engineering Centre in 1979.

Toyo India today is a professionally managed corporate entity undertaking Engineering, Procurement and Construction (EPC) contracts on lump-sum turnkey basis. Our 'Customer First' approach coupled with the flexible strategy has helped us to align ourselves to meet the true requirement of our clients while executing Project Management Consultancy (PMC) or Engineering, Procurement and Construction Management (EPCM) assignments.

Toyo India is known for delivering comprehensive solutions that are practical and sustainable – a legacy; we inherited from Toyo Japan.

Following the tradition set by the parent company, Toyo India has scripted various success stories in the challenging Indian business environment, with operations spread across sectors such as Oil & Gas Processing, Refineries, Petrochemicals, Fertilizers, Cryogenics, Infrastructure and Industrial solutions.

With its 2000+ dedicated Professionals from various fields, Toyo India enjoys a coveted position amongst its peers. This has also led to the growing stature of Toyo-India under the Toyo Engineering group, extending engineering services to TOYO Group Companies worldwide.

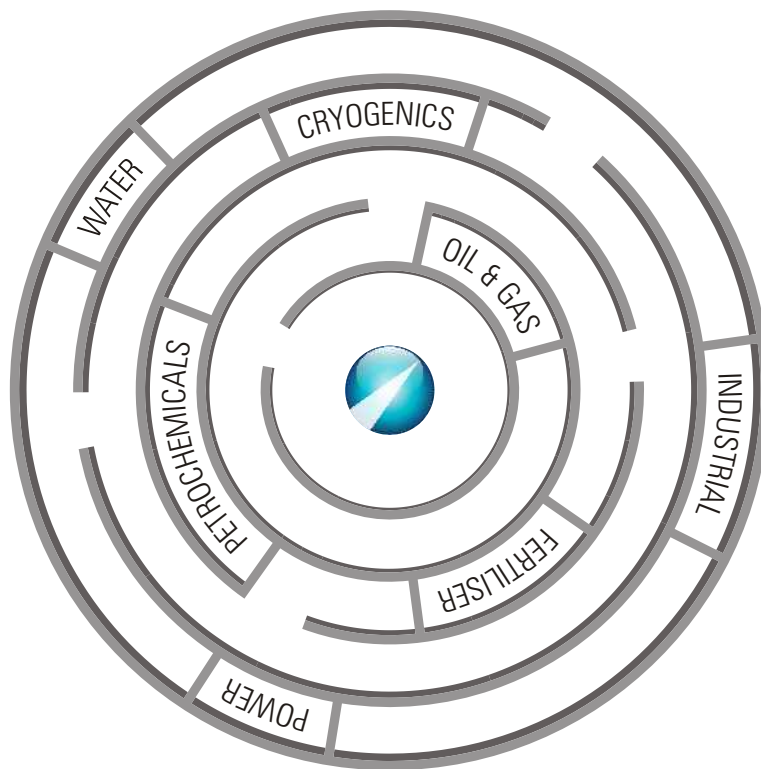
We work towards "Engineering for Sustainable Growth of the Global Community" and commit ourselves towards contributing positively to the society at large.



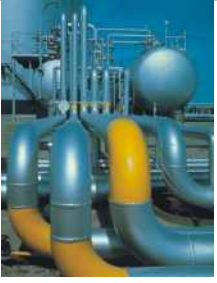
# SPECIALISATIONS

Toyo India, a specialist in the Process Industry sector, is also consolidating its position in fast emerging Infrastructure segment. These sectors reflect the growth of a country's economy and a lot is at stake when it comes to building these National Assets. We are proud to have built some of the finest amongst them in India and abroad.

With our expertise and support from Toyo Japan, we have proven our mettle in project execution and management capabilities across the globe. We are able to deliver results by leveraging our engineering strengths and our ability to become one with our client.



**With over 30 years of experience in project implementation in India and 20+ countries, success has become a way of life at Toyo India. We have tackled hurdles that many have considered impossible to overcome.**







27

**Major Units / Facilities:**  
LNG Regassification terminal,  
Ammonia storage tanks,  
LPG storage facilities,  
C2/C3 Recovery

92

**Major Units / Facilities:**  
CDU / VDU, Delayed  
Coker Unit, Fluidized  
Catalytic Cracking,  
Hydrocracker Unit, Diesel  
HydroTreater etc.

18

**Major Units / Facilities:**  
Raw / Waste Water  
Treatment,  
Effluent Treatment Plants,  
CPUs, DM Water  
Plants etc.

CRYOGENICS

OIL & GAS

24

**Major Units / Facilities:**  
Tyre manufacturing,  
Float Glass, Automobile,  
Chemicals,  
Pharmaceuticals etc.

INDUSTRIAL

71

**Major Units / Facilities:**  
Naphtha/Gas Cracker,  
PBR, SBR,  
Aromatics,  
PTA, MEG,  
Methanol etc.

PETROCHEMICALS

FERTILISER

29

**Major Units / Facilities:**  
Ammonia, Urea,  
Di-ammonium Phosphate,  
Ammonium Sulphates  
etc.

POWER

21

**Major Units / Facilities:**  
Gas Based Power Plant,  
Diesel Power Plants,  
Coal Based Plants,  
Substations etc.



## OIL & GAS PROCESSING, REFINERIES

### *Unearthing Treasures of Nature*

Oil & Gas Processing, Refineries is one of Toyo India's strongest fortes. Our portfolio developed over the years showcases prestigious works in this sector for Prominent Fortune 500 companies and various renowned corporate houses worldwide. Our clientele includes Indian Oil, ONGC, Hindustan Petroleum, Bharat Petroleum, Shell, Reliance Industries, KNPC, MRPL and many more.

Our exposure to world class technologies and experience of working with major multinational process licensors like Lummus, UOP, Axens, KTI, ExxonMobil, FW, SD, Chevron and many more; give us the edge while working as ideal solution

*Gujarat Refinery, Baroda  
Client : IOCL*



provider for complex Refinery Units including expansions and revamping.

We assist our clients to evaluate and select most suitable technologies, as PMC Consultant and help in taking their planned projects forward.

Our Engineering Expertise is proven in all refining processes and technologies, including:

- Licensed Process Units
- Open Art Design Units
- All Offsite and Utility Systems

Major Refinery Units handled :

- CDU / VDU
- Delayed Coker Unit
- Fluidized Catalytic Cracking (FCC)
- Hydrocracker Unit
- Diesel HydroTreater
- Sulphur Recovery Unit
- Catalytic Dewaxing Unit
- Catalytic Reforming Unit
- Isomerisation Unit
- Hydrogen Generation Unit
- LPG Merox Treating Unit
- ATK Merox Unit
- Propylene Recovery Unit
- Amine Treatment Unit
- Flare Gas Recovery Project
- Naphtha Splitter Unit
- Vis-breaking Unit
- Lube Oil Blending Unit

*Numaligarh Refinery, Assam - Client : NRL*



*Manglore Refinery & Petrochemicals, Karnataka - Client : MRPL*

*C2, C3, C4 Extraction Plant, Dahej - Client : ONGC*







# PETROCHEMICALS

## *Building the Chemistry*

Petrochemicals provide the foundation for manufacturing industries and more significantly form a major part of our daily lives. Indian Petrochemical Sector has come a long way with global sized plants not only meeting local demands but also exporting to global markets.

For over 30 years, Toyo India is playing an important role in enhancing the growth engine of India's economy by serving the entire value chain of hydrocarbons right from Naphtha cracker to midstream and downstream petrochemical products. We have proven our proficiency in various olefins as well as aromatic complexes.

Naphtha or Gas Cracker is the building block of petrochemicals. Toyo India has varied experience in Engineering, PMC and EPC contracts for large capacity Cracker projects, based on world's renowned licensors as well as for associated downstream units in India and abroad.

*Naphtha Cracker Unit, Panipat  
Client : IOCL*



Our expertise also covers petrochemical intermediaries' projects such as EO/EG, Iso-propyl Alcohol, Caprolactam and PTA.

Toyo India's exposure with major technology licensors helps our clients to add real value in selecting the right configuration and processes.

*MEG Plant, Kashipur - Client : India Glycols Ltd.*



*Butadiene Extraction Plant, Hazira - Client : RIL*



*Naphtha Cracker Unit, Haldia - Client : HPL*



Some of our major projects:

- Naphtha/Gas Cracker
- Aromatic Complex
- Styrene Butadiene Rubber
- Purified Terephthalic Acid
- Ethylene Oxide/Ethylene Glycol
- Polybutadiene Rubber
- Polypropylene
- High Impact Polystyrene/General Purpose Polystyrene
- Caprolactam
- Butene-1
- Isopropyl Alcohol





## FERTILISER

### *Serving the Agriculture*

Toyo Engineering began its journey in the Indian subcontinent with its fertilizer initiative. During the golden era of the Indian fertilizer industry, Toyo Japan played a pioneering role by providing its reliable technology and engineering services.

While Toyo India continued its relationship with all major Fertiliser companies by carrying out expansions, revamps and offered various technical services like de-bottlenecking, energy optimisation etc.

Today, as the Indian agro sector experiences a new era of growth, Toyo India, in association with Toyo Japan, are well poised to offer comprehensive solutions with state of the art technology and decades of implementation experience.

Our strength is to provide the cost & energy efficient UREA technology ACES21® of Toyo Japan, along with EPC capability of Toyo India, ensuring seamless project execution under single point responsibility.

*Ammonia - Urea Plant,  
Gadepan  
Client: CFCL*



With over 100 plants spread across the globe, Toyo Japan is a leader in urea process development and plant engineering.

Toyo Japan has established the ACES21<sup>®</sup>, which achieves energy saving and plant cost reduction maintaining high performance and efficiency.

*Ammonia- Urea Plant, Gadepan, - Client : CFCL*



*Offsites & Utilities for Ammonia - Urea Plant, Gadepan - Client : CFCL*



## CRYOGENICS

### *Maintaining the Right Temperatures*

Since the past three decades Toyo India has been setting up facilities for storage and dispatch of liquefied gases through cryogenic solution.

Starting with Ammonia (-33°C), Liquefied Petroleum Gas (-45°C) to Liquefied Natural Gas (-161°C); we have handled them all.

Toyo India as part of a Global Consortium implemented India's first commercially operating LNG import terminal at Dahej.

We are preferred as a one stop solution provider for cryogenic storage systems with 'Design to Construct' competency for turnkey solutions.

*Ammonia Storage  
Facility, Paradip  
Client : IFFCO*





*Jetty top piping at LNG Terminal, Dahej  
Client : Petronet LNG Ltd.*



*Regassification Facility at LNG Terminal, Dahej  
Client : Petronet LNG Ltd.*



Toyo India's Extreme Cryogenics :

- Toyo India has implemented over 16 projects in Ammonia storage with total capacity of 145,000 MT
- First LNG regasification operating facility in India built in two phases (5 MMTPA each)
- First indigenous, automated, simultaneous loading and unloading of multiple rail wagons (32 t) for liquid Ammonia in India
- India's first wireless communication system between jetty and shore terminal by 'line of sight' microwave telemetry



*Unloading arms at LNG Terminal, Dahej  
Client : Petronet LNG Ltd.*



## POWER

### *Energising the Energy Sector*

Indian Power Sector is one of the largest in the world and most important sector in India as it fulfils the energy requirements of various other industries. Reliable Power is one of the most vital segments of infrastructure that sustains economic growth and is the backbone of prospering and vibrant nation.

*Gas based combined  
cycle power plant,  
Ramanathapuram  
Client : Sai Regency  
Power Corp. Ltd.*

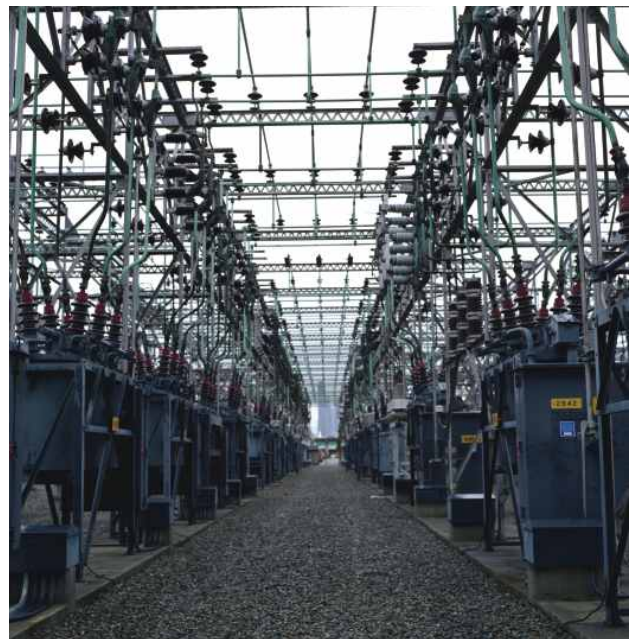




Toyo India has executed multiple captive power plants for prestigious customers in sectors like Oil & Gas, Petrochemicals as well as Independent Power Producers. Toyo India's proven engineering & project implementation skills coupled with the rich experience of Toyo Japan in large scale thermal power plants worldwide; gives us the impetus to excel in the power sector.

Our unique experience in offering concept to commissioning services provides the flexibility in executing fossil fuel plants such as Coal and Gas based plants as well as renewable power plants.

*Electrical Substation*



*Switchyard*



# WATER

## *Every Drop Counts*

Water as a resource is rapidly depleting worldwide. This depletion will have far reaching effects on Agriculture, Industries, Households, Flora & Fauna. Various initiatives are being taken worldwide to conserve and reuse this precious resource.

Toyo India, with its affiliates, has focused its strengths on providing sustainable solutions to these projects.

Our spectrum is substantially wide as we are working on raw/waste water treatment, recovery & recycle plants, zero liquid discharge systems for complex industrial requirements as well as domestic use.

Toyo India with its affiliates & associates execute projects on EPC, DBO, DBFO, BOO, BOOT model in water sector.

*Raw Water Treatment Plant, Vizag  
Client: Toyotsu Rare  
Earths India Pvt. Ltd.*







# INDUSTRIAL

## *Manufacturing the Future*

India has become one of the fastest growing economies in the world over the last two decades. With changing global realities India is set to become manufacturing hub for various industries.

We at Toyo India have vast experience in executing such Industrial projects. Our experience extends to variety of projects covering Tyre Manufacturing, Float glass, Automobile, Specialty Chemicals, Paints, Bulk Drugs, Pharmaceuticals etc.

Thus, our flexible approach and ability to implement wide range of projects, make us the preferred partner for Industrial plants.



# KEY DIFFERENTIATORS

Toyo India has not just surpassed its competition. It has created a niche by setting unparalleled standards in various sectors. The key factors that give us the thrust to excel, include:

## Our Flexible Approach

The lifecycle of a project covers all stages from feasibility study for investment through project planning, design, execution, commissioning and revamping or debottlenecking after completion. Toyo India serves its customers in flexible manner under a variety of contract schemes for each project phase.

We have proven our mettle in executing EPC-LSTK, EPCM as well as PMC contracts. This is outcome of our ability to align ourselves with the needs of specific contract and adapt different project management practices for FEED, Engineering or Cost reimbursement contracts to conventional PMC or EPC contracts.

### PRE PROJECT STAGE

- // Feasibility Study, Plant Cost Estimation
- // Detailed Project Report
- // Technology Selection, Arrangement
- // Assistance In Statutory Approvals

### PROJECT IMPLEMENTATION STAGE

- // Basic Design Engineering
- // Front End Engineering Design (FEED)
- // Detailed Engineering
- // Project Management
- // Procurement or Procurement Services
- // Construction or Construction Management
- // Commissioning or Commissioning Assistance

### POST-PROJECT STAGE

- // De-bottlenecking
- // Optimization

## Human Resource

Toyo India's large pool of qualified and experienced manpower covering all major disciplines is an asset that makes us stand apart from our peers. Today, our workforce is of about 2300 dedicated employees inclusive of 1500+ experienced engineers and talented designers from all requisite disciplines.

Our human resource is our most valuable asset. We earnestly strive to improve their engineering skills through in-house and customized training programmes.

We assign our engineers and designers to various overseas locations of our group affiliates in both design offices and at plant sites. Dedicated co-working on third country projects enables our engineers to get first-hand exposure to demanding international environments and a distinct work culture.



## Engineering Tools

Toyo India has its Engineering Centre and Project offices at Mumbai. All our engineering and project execution support departments; equipped with the latest engineering tools are always prepared to take on the challenges of mega-sized projects. Three Dimensional walkthroughs of Complex process plants enables construction groups to identify critical aspects of the projects and helps in achieving fast track completion.

## Procurement

Our procurement network proves our superior supply chain management and our capability to source almost anything from anywhere across the globe. This is possible with TOYO's presence across the globe and immaculate co-ordination amongst all the subsidiaries.

We ensure that the procurement ranks high in quality and value for money. Our risk minimization methods are fairly effective in ensuring that the projects do not get delayed due to lack of resources.







## Construction

Toyo India converts designs into realities through high quality construction and fast track project execution. We have highly skilled and quality conscious construction sub-contractors. Our dedicated construction management team maintains a vigilant eye on the daily progress which establishes our strong control over quality and safety.

## A Robust Project Management Team

With growing scale of engineering projects worldwide along with increasing alliances with clients, business partners and group companies; it is vital that Toyo India practices project management of extreme precision. Our project management gives emphasis on information sharing; transparency and accountability; periodic monitoring; risk identification-analysis-mitigation and integration of advanced IT tools. These project management techniques are honed to ensure completion of project satisfying expected purpose and targets in terms of quality, HSSE, schedule and cost.

## Local Expertise, Global Knowledge

Toyo India has been functional in India since 1976. It has developed a comprehensive understanding of this nation where diversity is a way of life. To augment our skills, this understanding is reinforced with the knowledge, TOYO gains through its global presence. The combination thus ensures that we are abreast with global standards and are also capable of customising them to suit Indian environment.

## System & Infrastructure

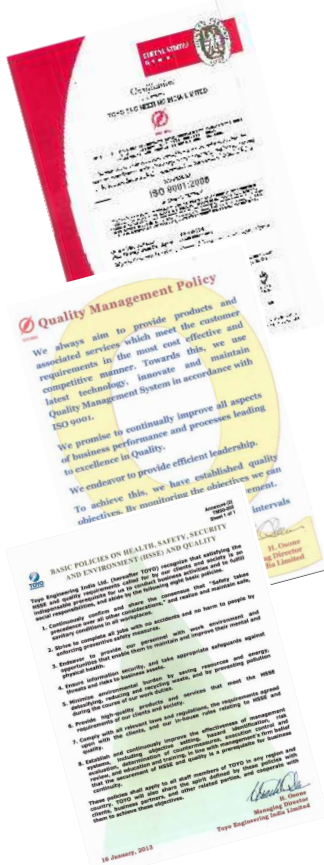
Our state-of-the-art designed offices with requisite infrastructure and facilities, laid out to suit centralized engineering, enable us to execute the projects within the schedules, maintaining international quality standards. Round the clock in-house video conferencing facility enables cost and time effective communications with clients and associates.

## Dynamic Work Culture

We ensure that our team is reinforced with the vigour, vibrancy and innovativeness of the new generation team players. We foster our youth wing to develop and introduce latest working methodologies and tech-trends in the organisation. Fresh engineers are given the opportunity to showcase their talents through challenging tasks and assignments.



# QUALITY, SAFETY, HEALTH, ENVIRONMENT AND INFORMATION SECURITY



Toyo India was amongst the first Indian engineering organizations to be certified for ISO Quality Management Standards in 1998 for all our business activities and locations.

The Occupational Health & Safety (OHS) and Environmental Protection is given utmost priority in all our activities, services & products. We ensure that OHS & Environmental standards are implemented and maintained throughout the organization and at our project sites. Our Occupational Health & Safety Management System is designed as per OHSAS 18001:2007 standard and Environmental management System is designed as per ISO 14001:2004 standard.

TOYO emphasizes on proactive work culture amongst our employees, subcontractors & other stake holders towards safety of plant, personnel & environmental protection.

We also ensure that all our vendors and contractors adhere to our safety and environmental standards. All our efforts have resulted in various safety awards and accolades.

We value the sensitivity and secrecy of information shared with us by Clients, licensors and other associates for every project.

We have implemented stringent ISMS 27001:2005 procedures to regulate the flow of this information through secured channels.


Certificates from National Safety Council of India for:

- Naphtha Cracker Project of Indian Oil Corporation Ltd. (IOCL), Panipat in year 2009 & 2008
- Petronet LNG Expansion Project of Petronet LNG Ltd, Dahej in year 2009 & 2008
- ONGC Gas Recovery Project of Oil and Natural Gas Corporation Ltd. Dahej in year 2008
- Naphtha Splitter Unit project of Indian Oil Corporation Ltd (IOCL-Mathura Refinery) in 2004-05

Appreciation Certificates from :

- Indian Oil Corporation Ltd. (IOCL), Gujarat refinery – for achieving 67 million man-hours without lost time accident as on Jan 31, 2011 at IOCL.
- Haldia Petrochemical Ltd., Haldia - for completing the reconstruction of Heater (2F-207) project with 827,460 safe man-hours without lost Time Incidence (LTI) in year 2011.
- Certificate for HSE from Margham Dubai Establishment (MDE) - for safe and successful completion of the Gas Import & Storage Project execution in 2006-07.
- Kuwait National Petroleum Company (KNPC, Kuwait) - for ATK MEROX project execution during year 2005-06.

We at Toyo India find our inspiration in the words of the Father of Our Nation - Mahatma Gandhi



*“A customer is the most important visitor on our premises. He is not dependent on us. We are dependent on him. He is not an interruption in our work. He is the purpose of it. He is not an outsider in our business. He is part of it. We are not doing him a favour by serving him. He is doing us a favour by giving us an opportunity to do so. ”*





*Toyo House*



*Toyo Technology Centre*





## Toyo Engineering India Pvt. Ltd.

### Registered Office & H. O.

Toyo House, Lal Bahadur Shastri Marg,  
Kanjurmarg (W), Mumbai 400 078. India.

Tel: +91 22 2573 7000  
Fax: +91 22 2573 7520/21  
Email: [in.sales@toyo-eng.com](mailto:in.sales@toyo-eng.com)

### Engineering Office

Toyo Technology Centre, 71, Kanjur Village Road,  
Kanjurmarg (E), Mumbai 400 042.

Tel: +91 22 2573 5000  
Fax: +91 22 2573 5842

### Branch Office

214, Splendor Forum, Jasola District Centre,  
Near Apollo Hospital, New Delhi 110 044.

Tel: +91 11 4059 1240  
Fax: +91 11 4059 1246  
Email: [in.delhi@toyo-eng.com](mailto:in.delhi@toyo-eng.com)

[www.toyo-eng.com/in](http://www.toyo-eng.com/in)