



# ENMAS

An ISO 9001 : 2015 & 45001 : 2018 Certified Company



**TRAINING  
AND  
DEVELOPMENT**



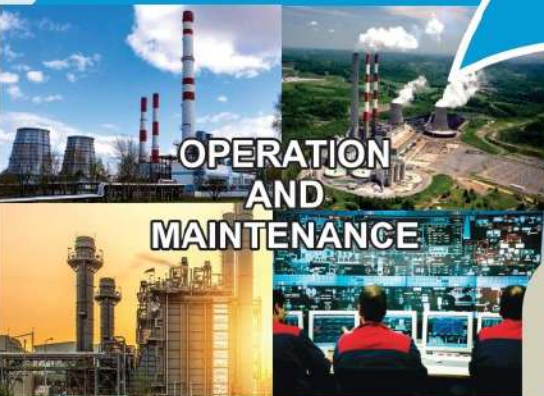
**INTEGRITY MANAGEMENT  
AND  
CONSULTANCY**



**EPC / PROJECTS**



**AIR COOLED  
CONDENSER**



**OPERATION  
AND  
MAINTENANCE**



**FACILITY  
MANAGEMENT**



**WATER TREATMENT  
PLANT**



✱ Power ✱ Oil & Gas ✱ Petrochemical ✱ Fertilizer ✱ Chemical

✱ Cement ✱ Steel ✱ Process Industries ✱ T&D Division ✱ Water Treatment







## ENMAS INDIA GROUP

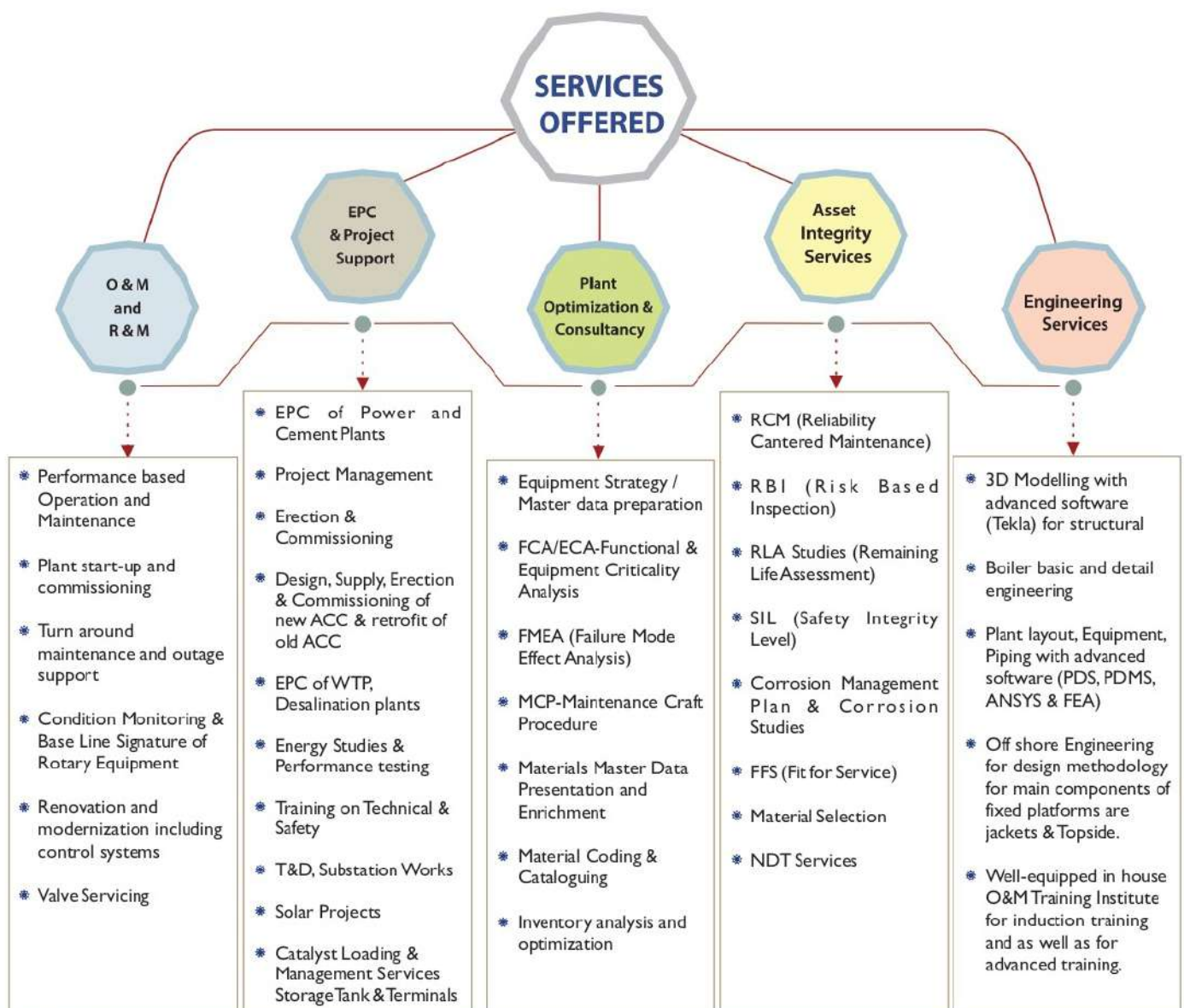
ENMAS is a unique brand name in Indian Power Industry, been in the market for well over 4 decades catering to the complete needs of Power industries. ENMAS has proven credential in power segment on its own and in collaboration with global associates.

Over the past two decades, ENMAS has grown into a complete Asset Management Service Provider in India. Currently we have around 2000 personnel on rolls, becoming one of the fastest growing Asset Management Service providers. We have forayed in to providing Asset Management services to various industry segments, continuously expanding our geographical presence and domain expertise.

ENMAS has established itself as a specialist in Industrial Asset Management encompassing O&M, Asset Integrity, EPC, Facility Management and Training Services

With proven Maintenance credentials to our credit, we have also established strong technical partnerships with leading national and international brands.

ENMAS is well placed to provide a complete range of Asset Management initiatives to a host of industrial segments with an emphasis on its clients achieving high quality 360 degree Asset Management benefits.



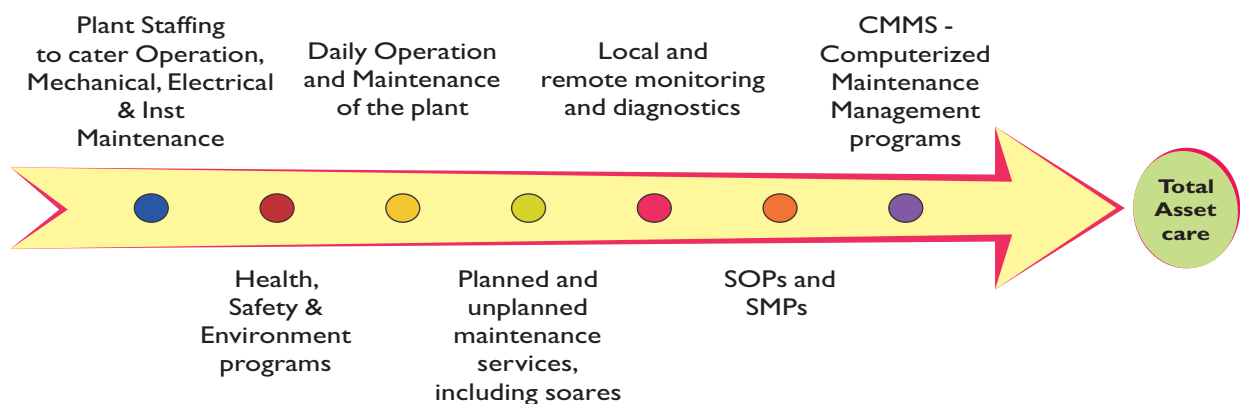
# OPERATION AND MAINTENANCE SERVICES

**ENMAS** Being “Integrated Asset Management Service Provider” in India and global market forayed into Providing O&M (Operation & Maintenance) and R&M (Renovation & Modernization) Services to various Industry segments like Oil & Gas, Petro Chemicals, Power, Steel & Cement Industries.

## KEY SPECIALITIES

- \* Backed by technically and financially sound group in energy field, having experience of more than 25 years
- \* Over 2000 Trained Personnel On Board On Permanent Basis Providing Asset Management Service with emphasis on HSE
- \* Provide interface services during final stage of Erection, Start up and commissioning
- \* A well experienced group of specialist staff will be placed in Mechanical / Electrical / Instrumentation / CFB / AFBC Commissioning, Water Treatment and Material Handling System
- \* Complete Mechanical, Electrical & Instrumentation Services from the group company
- \* Process and Procedure driven execution methodologies

## O&M FUNCTIONS



## BUSINESS MODEL

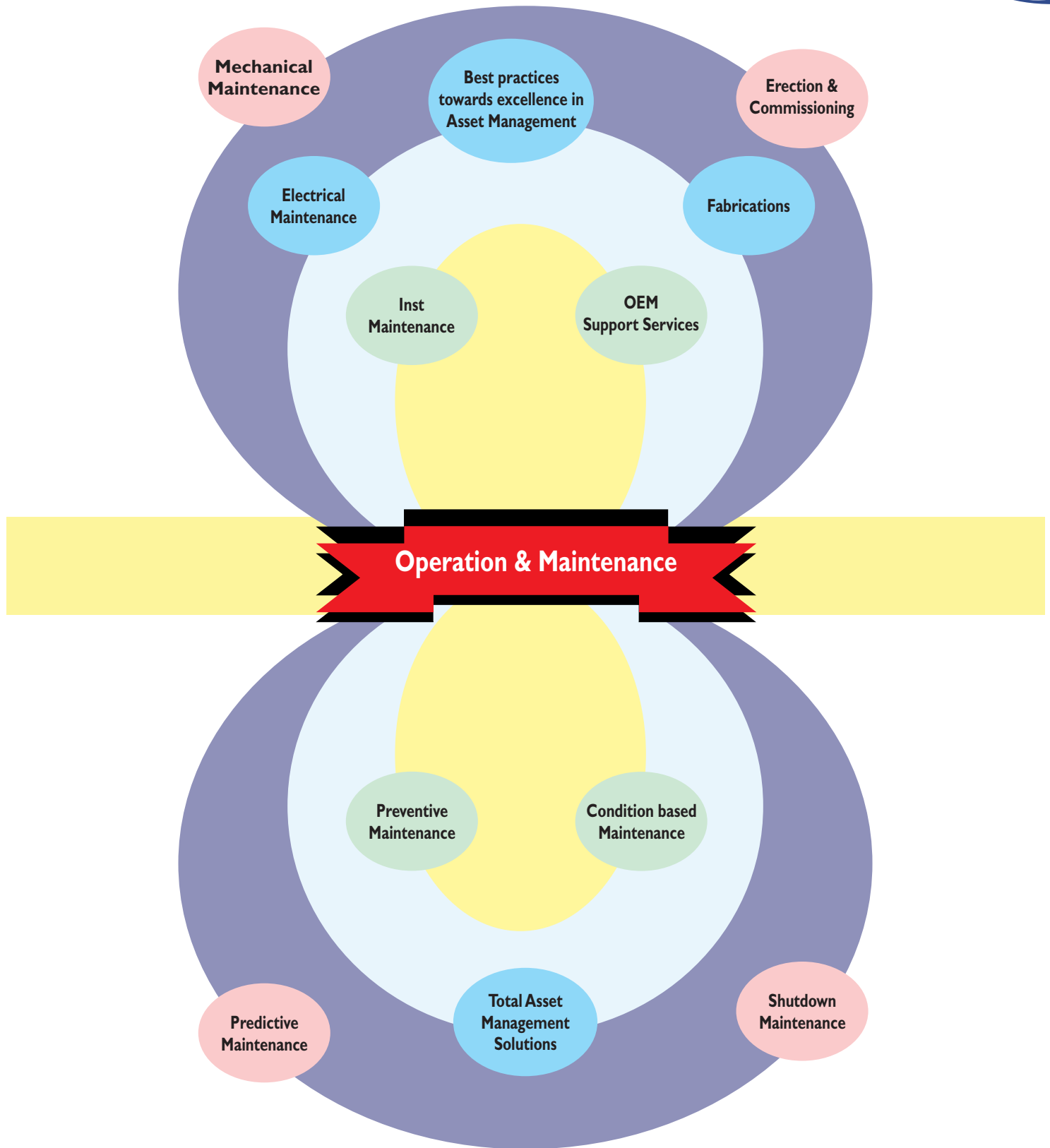
### Performance Based (KPI Driven)

- \* Health, Safety & Environment Programs
- \* Responsibilities With Commitment - Production, Plant & Equipment Availability
- \* Maintenance Services Including Spares
- \* Development & Implementation Of Maintenance Strategy For Optimized Plant Operation
- \* Stores & Inventory Control - Providing Tangible Cost Benefits To Client
- \* CMMS Based Performance Reporting & Equipment Health Assessment
- \* Technical Support And Skill Development
- \* Staffing To Cater Operation, Mechanical, Electrical & Inst Maintenance
- \* Assist OEMs During Shut Down And Re-commissioning Of Plant / Equipment
- \* Condition Monitoring & Base Line Signature Of Rotary Equipment
- \* Standard Operating & Maintenance Procedures (SOP / SMP) Documents

## SERVICE OFFERINGS



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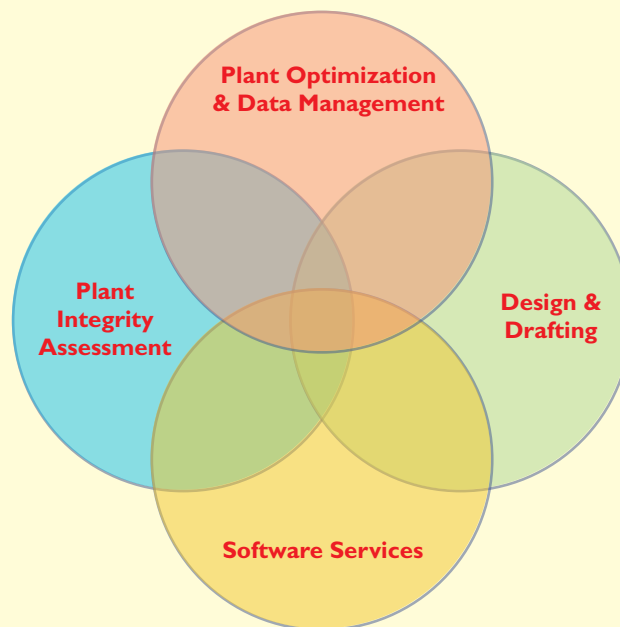


# INTEGRITY MANAGEMENT AND CONSULTANCY SERVICES (IMACS)

ENMAS Integrity Management and Consultancy Services (**IMACS**), focusing on offering advanced Maintenance & Materials optimization services.

The company services a host of industrial segments with an emphasis on its clients achieving high quality 360 Degree Asset Management benefits.

ENMAS is in position to provide excellent services by pooling their cross functional expertise available within the group and associates to support all the facets of the Asset management process.



## A. Integrity Management and Consultancy Services Offerings

- Maintenance & Materials Master Data
- Maintenance & Materials Optimization
- Maintenance Procedures

### a) Maintenance & Materials Master data and Optimization

#### Data Generation

- MTBF & MTTR based on actual plant data and standard sources
- Maintenance Methods and practices
- Current Maintenance procedures and methodologies
- Asset register and specifications
- Spares list, Life Cycle spare parts

### b) Optimization Studies

#### Reliability Centred Maintenance (RCM), Classical & back fit

- Failure Mode and Effect Analysis (FMEA), FMECA
- Functional & Equipment Criticality Analysis (FCA & ECA)
- Maintenance Procedures and optimal maintenance intervals
- Safety Critical Elements

#### Risk Based Inspection (RBI) - Limited scope

- Historical data capture
- Population of measurement points & corrosion data
- Generation Corrosion loops
- Risk assessment using Risk Matrix

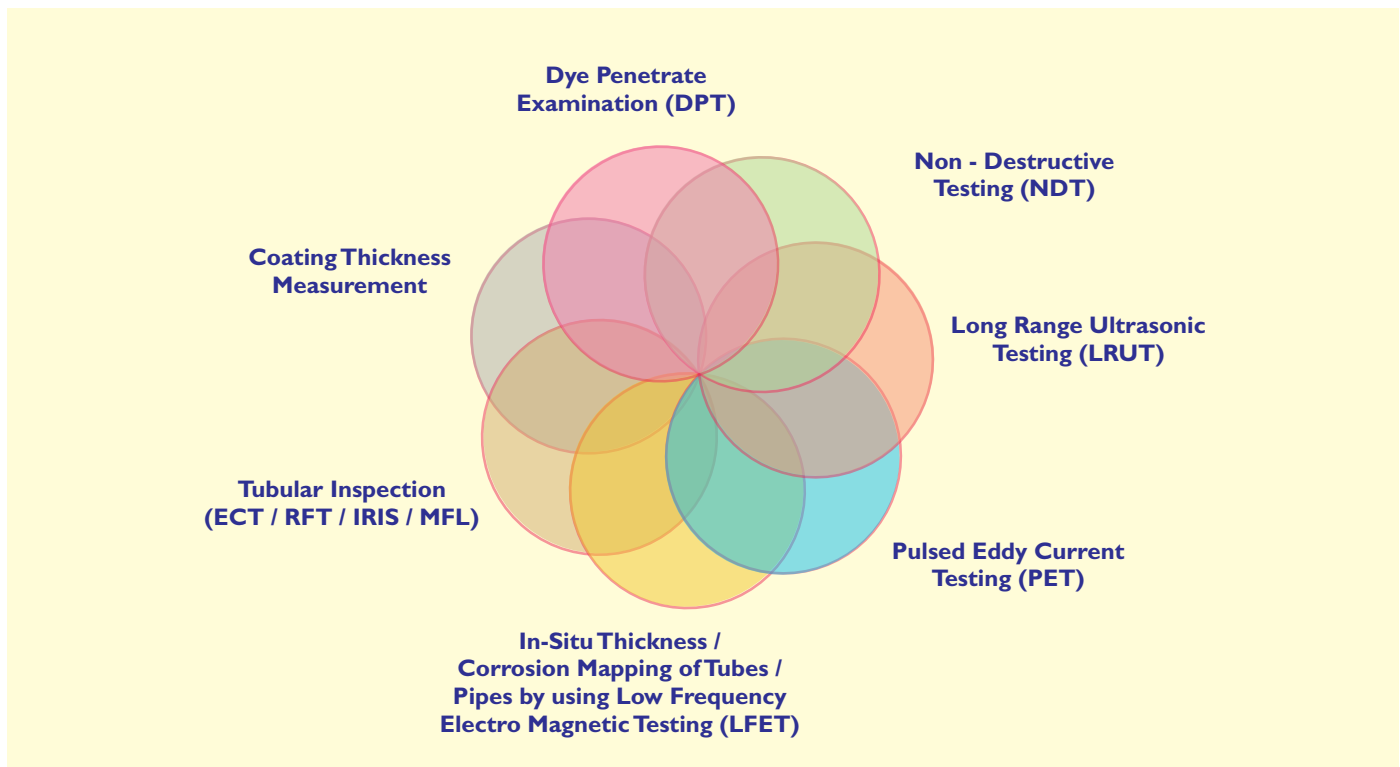
#### Risk Spare Analysis (RSA)

- Identification of special tools requirements
- Preventive and predictive maintenance schedule development

### c) Software Exposure

- RCM Turbo
- RCM + +
- PP SIMTECH (RBI)
- Strategic Corporation (SOS) for RSA
- Shell Proprietary Software

## B. Integrity Service







- Cutting Plans & BOQs
- Marking, Punching, Welding and cutting
- Welding compliance to ASME - 3G, 6G, and structural welding
- Certified Personnel
- Turning / Boring / Milling / Shaping

#### Benifits of Enmas:

- Approved QAP / ITP to be documented
- Project schedule will be documented
- Production schedule will be documented
- WPS, WPQ, PQR will be documented
- Approved Welder List will be documented
- Safety Precaution will be displayed

- NDT ASNT level II- Radiography, UT, MPT, DPT
- Vessel Inspection and report generation
- Quality checks and clearance
- Condition Monitoring and Inspection Services

#### Benifits of Enmas:

- Inspection Test Plan (ITP) / Quality Assurance Plan (QAP) - Preparation NDT Testing (RT, UT, MPT, DPT Etc.,) as per ASME Sec V
- Stage wise Inspection reports for Product
- Conditional Monitoring & Inspection services
- Inspection for all Structural, Pressure vessels, Non-Pressure Vessels API 650 Vessels etc.,
- Preparing Manufacturing Data Book (MDB) for Product

- PPEs
- PTW
- Hole watch
- Compliance to Work Permits and JSAs
- Hazard identification and safe work practices

## C. Credentials

- RCM Study - Report and Analysis of BARKA 1,2,3 & SALALAH GAS SUPPLY STATION of Oman Gas Company Sultanate of Oman
- MARMUL / FAHUD / SAIH RAWL - RCM & ECA for Booster Gas Compressor with Gas Turbine as Prime Mover 2 running and one stand by for PDO Oman
- SALALAH GAS SUPPLY STATION (GSS) - RCM & ECA for gas supply station - Oman
- Engineering Procurement & Construction (EPC) Successfully Completed for Steam Tracing Tubes At Urea Pipe Line At IBB - Sabic Work At Saudi.
- Epc Work For Horizontal Boiler Successfully Completed For Addar Chemical At Saudi

### Data Management for QSTec Polysilicon Plant - Qatar

- Equipment technical data Preparation in Predefined SAP template
- Development of Equipment Master (Equipment functional location, hierarchy & technical objects)
- Creation of functional location hierarchy
- Bill of materials preparation
- Spare part data preparation for any ERP / CMMS
- Maintenance Data Preparation

### **Maintenance Procedures and Manuals preparation for QSTec Polysilicon Plant - Qatar**

- Mechanical Maintenance Procedures - 150 Nos
- Electrical Maintenance Procedures - 110 Nos
- Instrument Maintenance Procedures - 90 Nos

### **Dietsmann Technologies S.A**

- Asset Integrity Services - Creating Hierarchy Breakdown
- Inspection Engineering - (MEI)
- Maintenance Engineering - Maintenance Strategy And Planning Based On RBI Methodology

### **D. GROUP Associates**

#### **GLOBAL ASSOCIATES**

- Hofincons & Co LLC. Muscat, Oman  
Asset Management Services provider in Oman And Saudi Arabia
- Construction Development Company, Doha, Qatar  
Asset Management Services provider in Qatar
- Dietsmann Technologies S.A.France

#### **DOMESTIC ASSOCIATES**

- BETZ (AWS, ASNT Partners), Chennai  
BETZ Engineering and Technology is a pioneer in Testing, Inspection and Certification (TIC)  
delivery high quality services to help client meet the the growing challenges of quality and safety.



# CATALYST HANDLING

**ENMAS** plans to execute Catalyst change out Projects for a number of clients in the Middle East and far East along with their partner EMDAD based at UAE. EMDAD has successfully executed many projects for Oil & Gas and Petro Chemical clients in UAE

## Some of the major work cover

- Catalyst & Molecular sieve replacement
- Catalyst skimming
- Catalyst and ceramic ball loading
- Deputation of skilled man power on request to client sites
- Provision of specialized equipment for catalyst unloading and loading



## Resources

ENMAS and their associate possess necessary tools and special equipment to execute the catalyst change over jobs. The company is capable of executing jobs simultaneously in 3 different locations. Tools and special equipment at our Disposal

1. Life support Panels
2. Fitted out containers
3. Vacuum units - Diesel driven
4. Filtration units
5. N<sub>2</sub> coolers, silencers & cyclones
6. N<sub>2</sub> Recycling System
7. Dust collection system
8. Constant discharge valves and control systems
9. Air movers
10. Screening machines
11. HP Lines with manifolds

## Catalyst Handling

- Loading and unloading of catalytic reactors
- Reactor - specific services such as (soft) vacuum unloading, wet unloading, sock loading, dense loading (Desiccant®, Unidinese®)
- Inspection in Nitrogen atmosphere & Handling of catalyst in Nitrogen atmosphere.



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## Areas Of Expertise

- Ammonia synthesis converters
- Continuous catalytic reformers
- Hydrocrackers
- Tubular reactors
- Reformers
- Conventional multi bed reactors



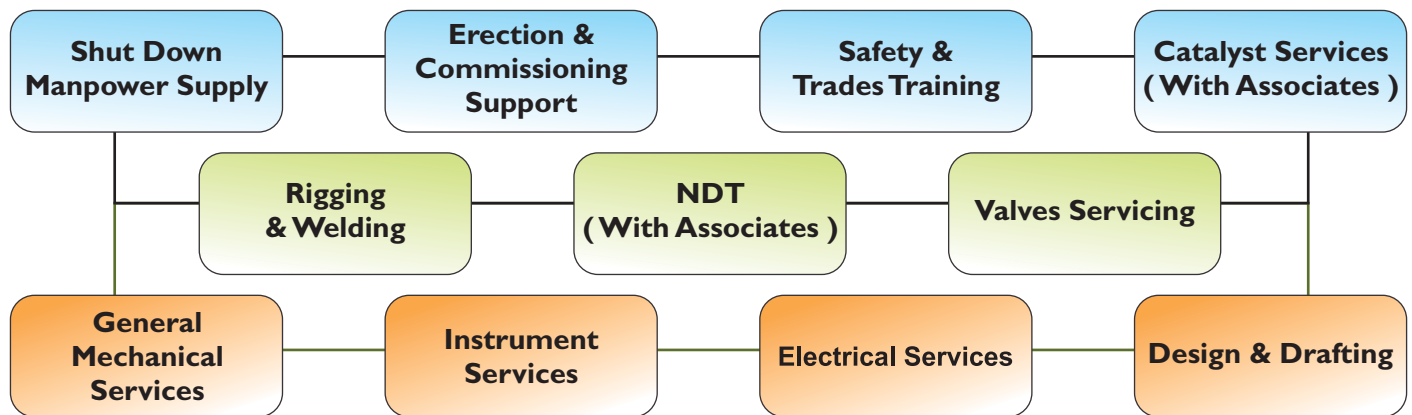
## Credentials for last 4 Years of Catalyst Loading and Replacement

S.No	Client Name	Project Descriptions	Work Site	Month / Year
1	Abu Dhabi Gas Industries Ltd. (GASCO)	Catalyst and Molecular Sieves Replacement	All GASCO Sites	Dec 2017
2	Abu Dhabi Oil Refining Company (TAKREER)	Catalyst Replacement Jobs for Vessels & Reactors	Um Al Nar	Mar 2017
3	Emirates Steel Industries (ESI)	Skimming of HDS Catalyst	Mussafah	May 2016
4	Emirates Steel Industries (ESI)	Activated Carbon Replacement	Mussafah	May 2016
5	DOOSAN BABCOCK	Catalyst Handling on call Out Basis	Habshan	Dec 2017
6	Abu Dhabi Oil Refining Company (TAKREER)	Catalyst Handling job for D4 in Mild Hydrocraking (MHC) Unit 803	Ruwais	Mar 2016
7	Abu Dhabi Oil Refining Company (TAKREER)	Catalyst Replacement Jobs in Unit 15	Ruwais	Sep 2014
8	Abu Dhabi Polymers Company Limited (BOROUGE)	Replacement of Molsieve in the Cracked Dryers	Ruwais	Oct 2013
9	ISCCO/Abu Dhabi Gas Industries Ltd. (GASCO)	Molecular Sieve Replacement Works GASCO Ruwais Shutdown of Train 2 for Periodic Inspection and Maintenance	Ruwais	Jan 2013

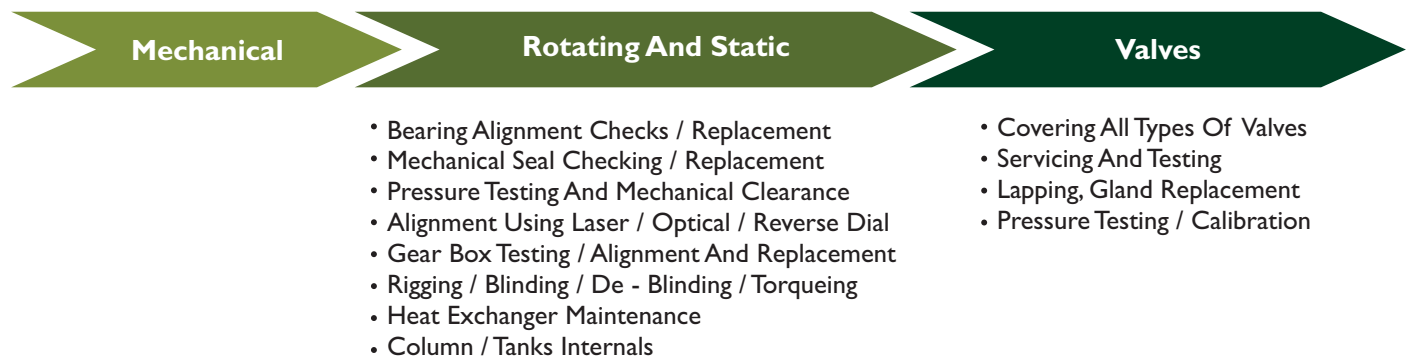


# SHUTDOWN AND SUPPORT SERVICES

## Inhouse Capabilities



ENMAS Offers the following Shut Down Services to Client on a regular basis



## Regular and shut down maintenance of all types of rotating equipment

- Regular Maintenance, Overhaul
- Rotor Balancing
- Bearing Inspection, Replacement
- Skid Equipment Overhaul , Repair And Restoration
- Gear Box Repair And Overhaul
- Alignment
- Fans & Blowers
- Pumps - Centrifugal, Reciprocating, Screw Type
  - Regular Maintenance, Overhaul
  - Impeller Repairs
  - Shaft Repair
  - Seals, Bearing Changing
  - Alignment - Laser And Manual

## Gas Turbine Inspection, Regular Maintenance & Overhaul Stem Turbine - Regular Maintenance and Overhaul

- Full Inspection Services (Visual, Dimensional, NDT )
- Rotor Disassembly & Re Assembly
- Rotor & Stator Re-blading
- Rotor Balancing ( Low Speed Dynamic )
- Seal Repair & Replacement
- Dimensional Restoration Journals & Steel Areas
- HVOF & Cold Coatings ( Corrosion Protection & Anti Fouling )
- Overhauling of Rotor & Casing



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#### Electrical

- **HV / LV Switch Board & Bus Section - Testing / Megger / Inspection**
- **SF6 & Vacuum Circuit Breaker - Testing / Inspection Of Auxiliaries / Replacement**
- **Transformers - Inspection And Testing**
- **LV / HV Motors - Winding Checks / Overhaul**
- **Resistance Measurements**
- **Cable Laying, Terminations, Isolation And De-isolation**

#### Instrumentation

- **Transmitters - Calibration / Replacement and Repair**
- **Control Valves - Testing / Repair / Calibration**
- **Field Instrumentation - Calibration, Removal & Replacement**
- **Instrument Cable Laying, Terminations, Loop Checking And Ferruling**

### Commissioning Support

- Review and comment on Operation & Maintenance Manuals provided by OEMs.
- Development, Fine - Tuning and Implementation of Computerized Operation & Maintenance Management System.
- Review of documents such as plant systems description, spare parts list & recommendations for maintenance practices etc. as provided by the OEMs / Consultants.
- Prepare and finalize Standing Instructions & Procedures as necessary for day to day management of the plant .
- Review Operating Procedures.
- Associate with the EPC / Plant Suppliers during Pre-Commissioning, Commissioning, Start - up & Testing of the plant.

### Enmas India Recruiting Agency (RA) Division

Enmas India Group is having Recruiting Agency Division for Staffing Solutions and obtained License (License No. Chennai/Company/555331/2020) from Ministry of External Affairs, Government of India and become staffing solution provider to meet hiring needs of organizations worldwide in a professional way to empower the Global Human Resource needs. Enmas India Recruiting Agency is assuring the business value to meet Individual hire needs in terms of Ethical, Reliable, Cost, Time and Satisfaction by recruiting the Right Qualified source to fit wide role and functions.

### GROUP ASSOCIATES

#### Global Associates

##### **EMDAD SERVICES LLC, Abu Dhabi, UAE**

Shut Down services and short term services for Oil & Gas and Petrochemical Industries

##### **Construction Development Company, Doha, Qatar**

Shut Down services provider in Qatar

#### Domestic Associates

##### **Turbo Engineering Services, Hyderabad**

Specializes in Turbine and Rotary Equipment's overhauling, Repair & Reconditioning, Spares Manufacturing, Condition Monitoring, Trouble Shooting, Erection & Commissioning, AMC, Installation, Service R&M and Re-engineering



# TRAINING & DEVELOPMENT

## Training Objective

- To promote the best practices in Maintenance and spread awareness on Advanced Maintenance Techniques
- Provide competency-based training to fresh diploma / graduate engineers to meet and exceed the skill requirements
- Industry and asset Specific Competency Based Training - Built on theoretical knowledge through structured class room training and practical hands on training
- Provide on-site training where possible
- Promote maintenance awareness through conferences and symposium

**ENMAS** is specialized delivering a wide range of training courses on-site in response to requests received from training organizations, authorities or companies to provide external (on-site) training in power plants, Chemical, Petrochemical, Fertilizer plants etc.

**ENMAS** have a tie-up and Associate with Sathyabama University and committed to offer training courses to their student coming out from 3rd year and final year courses.



**MOU signed with Sathyabama university, Chennai for Institutional Training and development**



**Technical Training for Site team**

**ENMAS** have a network of fully qualified and vast experienced, knowledgeable faculties who can travel anywhere in the world.

- We can arrange to suit company training needs and committed to maintaining all training courses to the highest quality.
- The topics covered but not limited to plant Operator, Industrial Maintenance, Integrity, RCM/TPM, FMEA Trainings ETC., for Operators, Engineers and Technicians.
- Reliability, Availability and Maintainability (RAM) Analysis Training
- Equipment Critical Analysis (ECA) Training
- Safety Training to Engineers, Supervisors, Technicians for Permit to Work (PTW), Zero Accident, Confined Space Entry, Hole Watcher, Fire Watcher & Lifting Supervision
- Conducted Seminar on RCM at Sathyabama University. Around 100 Final year students participated
- RCM Basic Induction Training for HO and Site Team Engineers
- We have MOU with P.A.C. Ramasamy Raja Polytechnic College. Rajapalayam to Establish Industry - Institute collaborated for offering the course for Industry based Elective of Operation & Maintenance of Thermal Power Plant from 2019.

## PIC ONLINE TRAINING

**ENMAS** represents PIC - Online Training Business

**ODESIE** - PIC's online dynamic enterprise solutions for industry excellence (Odesie) and E-learning solution that produces a training program designed to provide offerings and records management for personnel operating the facility in the territory on india and neighbouring countries

### Proposed Training Activities

#### Class room and practical training

- Safety Mechanical, Electrical and Instrumentation maintenance skills training
- Operation Training - Power, Petro chemical and Oil & Gas Industries
- Onsite training on specific client needs
- Integrated safe operating procedure and job inductions

#### Conceptual training

- Reliability Centred Maintenance techniques
- Root Cause Failure Analysis
- Material engineering
- Planning & Scheduling
- Tailor made programs with a professionally designed coursework based on : Training needs analysis and training plan
- Annual maintenance seminars for India / Overseas

### Training Faculties / Resources

• Safety	2
• Operation	3
• Mechanical	5
• Electrical	4
• Instruments	3
• Inspection / RCM/RBI	10

# GROUP AND ASSOCIATES

## DOMESTIC

S.no	Name of the company	Expertise	Website
1	<b>ENMAS Minerals Private Limited, Chennai</b>	EPC of Cement Plants and Spares Management	<a href="http://www.enmasindia.com">www.enmasindia.com</a>
2	<b>ENMAS Enviro projects Private Limited, Chennai</b>	EPC for Power sector and R&M	<a href="http://www.eepc.in">www.eepc.in</a>
3	<b>Gradient Enmas Water Solutions Private Limited, Chennai</b>	EPC for Desalination, Water & Waste Water (STP & ETP) treatment, ZLD projects	<a href="http://www.enmasindia.com">www.enmasindia.com</a>
4	<b>Enmas Water Solutions Private Limited</b>	Water Division	<a href="http://www.enmasindia.com">www.enmasindia.com</a>
5	<b>Dehu Engineering (India) Private Limited, Pune.</b>	Manufacture of Boilers and its auxiliaries	<a href="http://www.dehu.in">www.dehu.in</a>
6	<b>Turbo Engineering Services, Hyderabad</b>	Turbine and rotary equipment installation, service R&M and Re-Engineering	<a href="http://www.turboengineeringservices.com">www.turboengineeringservices.com</a>
7	<b>Ram E&amp; I Systems Pvt Ltd, Chennai</b>	EPC & Commissioning services for Electrical and C & I systems	<a href="http://www.eandi.biz">www.eandi.biz</a>
8	<b>BETZ (AWS, ASNT Partners)</b>	Quality Inspection, NDT & RLA Services	<a href="http://www.welding-certification.com">www.welding-certification.com</a>
9	<b>ACE Enmas Renewables Private Limited</b>	Solar Energy	<a href="http://www.enmasindia.com">www.enmasindia.com</a>
10	<b>Srinivas Waste Management Services (P) Ltd</b>	Waste Management Division	<a href="http://www.swms.in">www.swms.in</a>

# GROUP AND ASSOCIATES

## GLOBAL



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S.no	Name of the company	Expertise	Website
1	Enmas Technical Services WLL, Qatar	Integrity Management and Consultancy Services	<a href="http://www.enmasindia.com">www.enmasindia.com</a>
2	Enmas Power Technical Services L.L.C, UAE	Operation and Maintenance, EPC & Asset Management	<a href="http://www.enmasindia.com">www.enmasindia.com</a>
3	Enmas Power Technical Services Kenya Limited	EPC & Asset Management Services	<a href="http://www.enmasindia.com">www.enmasindia.com</a>
4	Enmas Ltd (UK)	Integrity Management & Consultancy Services	<a href="http://www.enmasindia.com">www.enmasindia.com</a>
5	Enmas Arabia Contracting Company	T & D and substation	<a href="http://www.enmasarabia.com">www.enmasarabia.com</a>
6	Enmas Watts (EWL), London, UK	Renewable Energy Projects and Energy Efficiency Projects	<a href="http://www.easywatts.co.uk">www.easywatts.co.uk</a>
7	CPS (Creative Power Solutions), USA / Abu Dhabi	Renovation and modernization	<a href="http://www.cpsag.ch">www.cpsag.ch</a>
8	AE ENGINEERS (S) PTE LTD, Singapore	Material handling	<a href="http://www.aeengineer.net">www.aeengineer.net</a>
9	Hofincons & Co LLC, Oman	Asset Management	<a href="http://www.hofincons.com.sa">www.hofincons.com.sa</a>
10	Construction Development Company, Qatar	Asset Management	<a href="http://www.cdc-qatar.com">www.cdc-qatar.com</a>
11	Well Energy Group Limited, Russia	Oil & gas - Upstream and Midstream	<a href="http://www.wellenergy.ru">www.wellenergy.ru</a>
12	Emdad LLC, UAE	Catalyst Loading Management / EPC / Shutdown	<a href="http://www.emdad.ae">www.emdad.ae</a>
13	Nano PV Solar INC., USA	Solar Division	<a href="http://www.nano-pv.com">www.nano-pv.com</a>
14	Science Tech Solutions SDS BHD, Malaysia	Catalyst Management Services and Commissioning Support Services	<a href="http://www.stscompanies.com">www.stscompanies.com</a>
15	NDT international, UAE / Iraq	NDT Services	<a href="http://www.ndtintl.com">www.ndtintl.com</a>
16	Abunab Group, Yeman	T & D and Substation	<a href="http://www.abunabgroup.com">www.abunabgroup.com</a>
17	Skillicorn Technologies (UK) Ltd	Urban Water Solution	<a href="http://www.skillicorntechnologies.com">www.skillicorntechnologies.com</a>
18	Vortex Petroleum, UAE	Asset Integrity / Reliability Management	<a href="http://www.vortexpetroleum.com">www.vortexpetroleum.com</a>
19	Dietsmann, France	Asset Integrity Services	<a href="http://www.dietsmann.com">www.dietsmann.com</a>



# REFERENCE LIST

## O & M



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SL. NO.	NAME OF CUSTOMER / CLIENT	LOCATION / STATE	CAPACITY OF POWER PLANT	SCOPE OF SERVICES	DURATION
<b>DOMESTIC - PROJECT LIST</b>					<b>No of Years</b>
1	BHADRESHWAR VIDYUT PVT. LTD	Kutch District, Gujarat	300MW	Operation & Maintenance Services of total power plants	Since Jan' 2020 onwards 5 yrs
2	VEDANTA LIMITED	JHARSUGUDA , ODISHA	4 X 600MW	Operation & Maintenance Support Services for power plant	1 Years from Feb 2017
3	NATIONAL CONTRACTING CO LTD	ALKHOBAR, SAUDI ARABIA	1140MW	Commissioning & Operation Services for 3X380 MW Combine cycle power plant (Qassim Plant)	Since Dec'2016 onwards - 2Yrs
4	KAKATIYA THERMAL POWER PROJECT	Ghanapur, Telangana	600MW	Commissioning support of C&I	1 Year from April 2015
5	OPG LIMITED	Athipur, Gujarat	300MW	Commissioning, Field Operation Services	2 Years from November 2014
6	SRAVANTHI INFRATECH PRIVATE LIMITED	Uttarkhand	225MW	Conducting Alkali Boil out of 2 Nos HRSB Boiler & its accessories of GBCCP-1	1 months from August 2016
7	REZAYAT COMPANY LTD	ALKHOBAR, SAUDI ARABIA	240MW	E & I cable termination work for power plant	6 Months from Feb 2017
8	RANHILL	Malaysia	190MW	Commissioning & Operation Services of power plant	1 Year from April 2007
9	ELECTROSTEEL STEELS LIMITED	Bokaro, Jharkhand	120MW	Commissioning, Operation & Maintenance Services of total power plants	2 Years from October 2012
10	OPG POWER GENERATION (P) LIMITED	Gummidipoondi, Tamil Nadu	80MW	Commissioning, Operation & Maintenance Services of total power plants	3 Years from July 2009
11	FITCHNER CONSULTING ENGINEERS (I) PVT LTD	Gujarat	72 MW	Commissioning support services for Mechanical & Electrical	1 Year from November 2013
12	FINOLEX INDUSTRIES LIMITED	Rathnagiri , Maharashtra	43MW	Pre-Commissioning, Commissioning support services, Operation & Maintenance Services of total power plant	Since Nov'2009 onwards - 10Yrs
13	MATRIX FERTILIZERS AND CHEMICALS LTD	Durgapur, West Bengal	54 MW	Pre-Commissioning and Commissioning support services of E&I ( Gas based power plant)	3 Years from August 2015
14	TULSYAN NEC STEEL PLANT	Gummidipondi, Tamil Nadu	70MW	Pre-Commissioning and Commissioning support services, Operation & Maintenance Services of total power plant	Since Mar'2013 onwards - 10 Yrs
15	UTTAM GALVA STEELS LIMITED	Raigad, Maharashtra	60MW	Commissioning, Operation & Maintenance Services of total power plants	Since Jan'2010 onwards - 13 Yrs
16	SITAPURAM POWER LIMITED - KSK GROUP	Vijayawada , Telangana	43MW	Operation & Maintenance and Supply of Consumables & Spares	Since Feb'2007 onwards - 16Yrs
17	ISMT LTD	Chandrapur, Maharashtra	40MW	Operation & Maintenance and Supply of Consumables & Spares	Since Apr'2011 onwards - 12Yrs
18	GRACE INDUSTRIES LIMITED	Chandrapur, Maharashtra	33MW	Commissioning, Operation & Maintenance Services of total power plants	Since Oct'2012 onwards - 10 Yrs
19	STAR METALLIC LIMITED	Hospet, Karnataka	32MW	Commissioning, Operation & Maintenance Services of total power plants	Since Jan'2010 onwards - 13 Yrs
20	ANKIT METALS	Durgapur, West Bengal	20MW	Commissioning, Operation & Maintenance Services of total power plants	Since Oct'2016 onwards - 6Yrs
21	DECCAN CEMENTS LIMITED	Bhavanipuram, Telangana	18MW	Commissioning, Operation & Maintenance Services of total power plants	Since Jan'2009 onwards - 14 Yrs
22	DECCAN CEMENTS LIMITED	Bhavanipuram, Telangana	6.3MW	Operation & Maintenance Services of total power plants	Since Jan'2020 onwards - 3 Yrs
23	SMC POWER GENERATION LIMITED	Jharsuguda, Odhisha	30MW & 40MW	Commissioning, Operation & Maintenance Services of total power plants	Since Jan'2021 onwards - 3 Yrs
24	CAUVERY IRON & STEEL (INDIA) LTD	Medak, Telangana	15MW	Commissioning, Operation & Maintenance Services of total power plants	Since Dec'2011 onwards - 11Yrs
25	SURENDRA MINING INDUSTRIES (P) LTD.	Sundargarh, Odissa	12MW	Commissioning, Operation & Maintenance Services of total power plants	Since Feb'2013 onwards - 10 Yrs
26	GOLDSTONE CEMENTS LTD	Jaintia Hills, Meghalaya	10 MW	Pre-Commissioning, Commissioning and start-up services assistance of 10 MW power plant	Since Jun'2016 onwards - 7 Yrs
27	Zuari Cement (Heidelberg Cement Group)	Yerraguntla, KadapaDist, Andhra Pradesh	21MW	Commissioning, Operation & Maintenance Services of total power plants	Since June '2022 onwards - 3Yrs
28	MSP METALLICS LTD	Jharsuguda, Odhisha	25MW	Operation & Maintenance Services of total power plants	Since Sept.2022 onwards - 1 Year
29	STAR CEMENT MEGHALAYA LIMITED	Lumshnong, Meghalaya	12.3 MW	Commissioning, Operation & Maintenance Services of power plants	Since Dec 2022 onwards - 3 Years
30	JINDAL SAW LTD	Haresamudram, Andhra Pradesh	30 MW	Operation & Maintenance Services of total power plants	Since Sept. 2022 onwards - 3 Years
31	TRIMULA INDUSTRIES LTD	SINGRAULI,MP	26.5MW	Operation & Maintenance Services of total	Since Aug'2023 onwards - 2 years
32	SURANA INDUSTRIES LIMITED	Raichur, Karnataka	35MW	Commissioning, Operation & Maintenance Services of total power plants	5 Years from June 2009
33	ADHUNIK METALIKS (UNIT I & II)	Rourkela, Odhisha	34MW	Commissioning, Operation & Maintenance Services of total power plants	5 Years from May 2007
34	SATVANA ISPAT LTD	Bellary, Karnataka	30MW	Commissioning Services	1 Year from July 2011
35	DALMIA CEMENT (BHARAT) LTD	Dalmiapuram, Tamil Nadu	27MW	Commissioning, Operation & Maintenance Services of total power plants	3 Years from December 2009
36	GALLANTT-METAL LIMITED	Bhachav, Gujarat	25MW	Commissioning, Operation & Maintenance Services of total power plants	3 Years from November 2006
37	SREE SIDHBALI ISPAT LIMITED	Chandrapur, Maharashtra	20MW	Commissioning, Operation & Maintenance Services of total power plants	5 Years from August 2009

# REFERENCE LIST

## O & M



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SL. NO.	NAME OF CUSTOMER / CLIENT	LOCATION / STATE	CAPACITY OF POWER PLANT	SCOPE OF SERVICES		DURATION
38	BASAI STEELS & POWER (P) LTD	Bellary, Karnataka	20MW	Commissioning, Operation & Maintenance Services of total power plants		3 Years from February 2011
39	THE KCP LIMITED	Muktyala, Andhra Pradesh	18MW	Commissioning, Operation & Maintenance Services of total power plants		Since Mar'2016 onwards - 5Yrs
40	KOHINOOR STEEL & POWER LTD	Jamshedpur, Jharkhand	17.5MW	Operation & Maintenance Services of total power plants		Since Aug '2018 onwards - 2Yrs
41	JINDAL STAINLESS	Jajpur, Odhisha	13MW	Operation Services		1Year from January 2007
42	SARADHAMBIKA POWER PROJECTS LIMITED	Chandrapur, Maharashtra	10MW	Commissioning, Operation & Maintenance Services of total power plants		3 Years from January 2015
43	ANKIT METAL	Durgapur, West Bengal	12MW	Commissioning, Operation & Maintenance Services of total power plants		2 Years from July 2007
44	RAICHUR BIO ENERGY PVT LIMITED	Raichur, Karnataka	9MW	Commissioning, Operation & Maintenance Services of total power plants		Since Aug'2016 onwards - 3Yrs
45	SVS POWER LIMITED	Nellore , Andhra Pradesh	7.5MW	Commissioning, Operation & Maintenance Services of total power plants		Since Oct'2015 onwards - 5 Yrs
46	VELLORE CO -OPERATIVE SUGAR MILLS LTD	VELLORE , TAMIL NADU	15MW	Commissioning, Operation & Maintenance Services of total power plants		Since Dec'2016 onwards - 2Yrs
47	BHABHA ATOMIC RESEARCH CENTER FACILITIES	Kalpakkam, Tamil Nadu	Annual operation and maintenance of multi-stage flash (MSF) sea water desalination plant (2011-12) at NDDP,Kalpakkam,Tamilnadu (TWO PART TENDER)			1 Year from December 2011-O & M
48	SHREE DURGA SYNTEX PRIVATE LIMITED	Surat , Gujarat	15MW	Operation & Maintenance Services of total power plant		Since May'2021 onwards - 5 Yrs
49	DEEPAK FERTILIZERS AND PETROCHEMICALS CORPORATION LIM ITED	Taloja, Maharashtra	10MW	Commissioning, Operation & Maintenance Services of total power plants		Since Mar '2018 onwards - 3Yrs
OVERSEAS - PROJECT LIST						
	INDORAMA ENERGY PTE LTD	Senegal, West Africa	20 MW	Commissioning support for 20 MW power plant		Since Apr'2016 onwards - 2Yrs
50	SMH Industrial Services Co. Ltd.	Jubail. KSA	Shutdown Support services			Dec 2018 to April 2019
51	CDRE	Sana, Yemen	132 KV TOWER ERECTION AND SUB STATION INSTALLATION			10 Months from June 2014 -Erection Supervision
52	CONSTRUCTION DEVELOPMENT COMPANY LLC	Doha, Qatar	Office Facility with Equipments& Consumables			Since Jul'2017 onwards - 6Months
53	CONSTRUCTION DEVELOPMENT COMPANY LLC	Doha, Qatar	Technical write up for Maintenance Procedure for Solar Plant			Since Nov'2017 onwards - 6Months
54	KMRI SMG	Mirigama, Sri Lanka	4MW	Operation & Maintenance Services of total power plants		Since Nov'2017 onwards - 3Yrs
55	MATERIALS MAINTENANCE MANAGEMENT LLC	Al Azaiba, Oman	Integrity Asset Management with Risk base Inspection for ORPIC Project		Oct 2019 - Dec 2019	
56	FICHTNER CONSULTING ENGINEERS (I) PVT. LTD.,	Port Said, Egypt	Testing and Commissioning of Switch			Since Jun'2018 onwards - 6 Months
57	DEXTERITY INDUSTRIAL SERVICES LLC	AL Jubail, Saudi Arabia	Design of Steam tracing line			(SAFCO)
PROCESS AND OTHER INDUSTRIES - EXPREINECE LIST						
58	KUDANKULAM NUCLEAR POWER PROJECT	Tirunelveli, Tamil Nadu	Operation of Demineralising Plant, Unit#I& Common Liquid Radioactive waste systems, Water treatment systems in operating island for a period of two years			2 years from OCT 2019
59	KUDANKULAM NUCLEAR POWER PROJECT	Tirunelveli, Tamil Nadu	Support services of 1&2 Chemistry Control Laboratories, Technical Unit and TLD laboratory			2 years from JUN 2021
60	KUDANKULAM NUCLEAR POWER PROJECT	Tirunelveli, Tamil Nadu	OperSupp for Solid Radioactive WMS, Dom Water Supply sys & Fuel handling Sys for 1 yr			2 years from AUG 2021
61	KUDANKULAM NUCLEAR POWER PROJECT	Tirunelveli, Tamil Nadu	Operation of Auxiliary Boiler Liquid Nitrogen Plant and Maintenance support of Auxiliary plants for a period of two years			Since Sep'2020 onwards - 2Yrs
62	KUDANKULAM NUCLEAR POWER PROJECT	Tirunelveli, Tamil Nadu	Operation Support For Solid Radioactive Waste Management Systems, Domestic Water Supply Systems And Fuel Handling Systems For One Year			Since OCT'2022 onwards - 2Yrs
63	KUDANKULAM NUCLEAR POWER PROJECT	Tirunelveli, Tamil Nadu	ESL Work Support Services for Two years			Since DEC'2021 onwards - 2Yrs
64	KUDANKULAM NUCLEAR POWER PROJECT	Tirunelveli, Tamil Nadu	Operation of Liquid Radioactive waste systems and Operation & Maintenance support ofDM Plant, Water treatment systems for a period of two years			Since DEC'2021 onwards - 2Yrs
65	MRF LIMITED	Arakkonam, Tamil Nadu	30 TPH	Commissioning, Operation & Maintenance Services of total power plants		Since Jan'2009 onwards - 12 Yrs
66	MRF LIMITED	Medak, Telangana	70 TPH	Commissioning, Operation & Maintenance Services of total power plants		Since Apr'2012 onwards - 11 Yrs
PROJECTS AND ENGINEERING - EXPREINECE LIST						
67	ABU NAB GROUP COMMERCIAL	Marib, Yemen	Design, Engineering, Manufacturing, Supply, Erection, Testing and commissioning of 2 x 63 MVA, 132 kV/33 kV Substation Expansion Project and 2 Nos. of 2 x 25 MVA, 33 kV/11kV Substation			Sep 2019 onwards - year
68	ABU NAB GROUP COMMERCIAL	Marib, Yemen	132 Kv/33Kv T&D	Design, Engineering ,Erection, Testing and commissioning of 132 KV Double circuit Transmission line & 132 kv/33 kv Sub-station		Since Oct'2017 onwards - 2Yrs
69	AI-MSK Company for Oil service LTD	West Qurna	132 Kv OHL	Design, Manufacture and supply of 132 KV OHTL Materials		Oct'2018 onwards - Mar'2019

# REFERENCE LIST



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INDIA**



## ELECTRICAL & INSTRUMENTATION



S.NO.	CLIENT	LOCATION	INDUSTRY	PROJECT DESCRIPTION
1	Experts E&I	FUJAIRA, UAE	Oil & Gas	Engineering and Supply of PLC Panel
2	Yokgawa Service Saudi Arabia	SAUDI	Refinery	Erection, Testing and Commissioning of Electrical and Instrumentation system, Detailed Engineering of Electrical and Instrumentation system
3	NeilanInternation	SUDAN	Power Plant	Design, Detailed Engineering, Supply, Erection, Testing and Commissioning of total plant which includes Civil, Electrical, Instrumentation and Mechanical.
4	Aljaber Energy Services	ABUDHABI	Water Treatment	Shop drawing preparation, Erection, Testing and Commissioning assistance of Electrical and Instrumentation system
5	Almoyad Electrical & Instrumention Services	BAHRAIN	Steel Plant	Erection, Testing and Commissioning of Electrical and Instrumentation system
6	Gulf Oil Gas Company	ABUDHABI	Off - Shore Oil & Gas	Detailed Engineering, Supply, Modification, Erection, Testing and Commissioning of Electrical, Instrumentation system
7	Ranhill Powertron	MALAYSIA	Power Plant	Detailed Engineering, Erection Supervision and Testing and Commissioning
8	Ranhill Petroneeds	SUDAN	On - Shore Oil & Gas	Shop drawing Preparation, Procurement Assistance, Erection, Testing and Commissioning assistance of Electrical and Instrumentation system
9	Aljaber Energy Services	ABUDHABI	Sulphar Plant	Shop drawing Preparation, Procurement Assistance, Erection, Testing and Commissioning assistance of Electrical and Instrumentation system

# REFERENCE LIST



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## ROTATING EQUIPMENTS



S.NO.	CLIENT	LOCATION	INDUSTRY	PROJECT DESCRIPTION
1	<b>M/s. Notore Chemicals Ltd.,</b>	Onne, Nigeria	Chemical	Rotating equipment at Ammonia, Urea and Utility Plants
2	<b>M/s. Brahmaputra Valley Fertilizers Co - Operative Ltd</b>	Namrup, Assam	Fertilizer	a). Natural Gas Booster Compressor & its Drive Turbine of BHEL Make. b). Synthesis Gas Compressor & its Drive Turbine of BHEL Make.
3	<b>M/s. I.F.F.CO</b>	Aonla, U.P.	Fertilizer	a). Syn gas drive turbine of MHI Make b). PAC Drive turbine of Fuji Make c). Co2 Drive turbine of BHEL Make
4	<b>M/s. Nagarjuna Fertilizers &amp; Chemicals Ltd</b>	Kakinada, Andra Pradesh	Fertilizer	a). Co2 Drive Turbine (E.DSTK - 101) for Plant - II b). Scrapping and assembly of Co2 Drive Turbine (E.DSTK - 101) For Plant - 2
5	<b>M/s. Gujarat Narmada Valley Fertilizers Co.Ltd.,</b>	Baruch Dish. Gujarat	Fertilizer	a). Nitrogen Compressors 2 MCL 525, BCL 406 of BHEL Make b). Syn gas Compressors BCL 407 - a, BCL 406 - b of BHEL Make
6	<b>M/s.Vikram Ispat, Alibag</b>	Raigad, Maharashtra	Steel	Recycle Gas Compressor and its Drive Turbine of Dresser Roots Make
7	<b>M/s. Reliance Petrochemicals Ltd.,</b>	Jamnagar Gujarat State	Refinery	Hydrogen Compressor and its Gear Box of GHH Borsig Make
8	<b>M/s.Tata Chemicals Ltd.,</b>	Babrula, U.P.	Chemical	a).Air Compressor Drive Turbine of BHEL make B). HP Air Compressor 2MCL 456 of BHEL Make
9	<b>M/s.Welspun Maxsteel Ltd.,</b>	Revdanda Maharashtra	Steel	RGC Compressor Drive Turbine its Compressor of Dress Roots Make
10	<b>M/s. Damodar Vally Corporation</b>	Chandrapur, Jharkhand	Power	Annual Service for Preventive, Running & Breakdown Maintenance of Turbine Associated Equipments





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11	<b>M/s. Indbarath Thermal Power Ltd.,</b>	Thoothukkudi, Tamil nadu	Power	Dismantling, Inspection & Re assembly of LP Turbine of Unit 2
12	<b>M/s. Wardha Power Ltd.,</b>	Warora, Chandrapur, Maharashtra	Power	HIP Turbine 135 MW Danfang China Make TG Set
13	<b>M/s. AES - Kellantissa Combines Cycle Power Plant</b>	Srilanka	Power	NDT service on 67.5 MW BHEL Make TG Set
14	<b>M/s. DCM Shriram Fertilizers &amp; Chemicals Ltd.,</b>	Kota, Rajasthan	Fertilizer	Revamping of 35 MW Mitsubishi Make TG Set
15	<b>M/s. Bhushan Steel &amp; Strips Ltd.,</b>	Angul, Odisha	Steel	Erection of 33 MW BHEL Make TG Set
16	<b>M/s. ISGEC Heavy Engineering Ltd.,</b>	Yamuna nagar, Haryana	Manufacturing	Erection of 30 MW BHEL Make TG Set
17	<b>M/s. OCL India Ltd.,</b>	Rajgangpur, Odisha	Cement	Overhauling of 27 MW Siemens Make TG Set
18	<b>M/s. Jindal Steel &amp; Power Ltd.,</b>	Raigarh, Chattisgarh	Steel	Dismantling of 2 x 21 MW BHEL Make TG Set Including its auxiliaries, Piping, Electrical & Instrumentation
19	<b>M/s. Chennai Petroleom Corpn Ltd.,</b>	Manali, Chennai, Tamilnadu	Refinery	Thrust Bearing Pads for the Turbine of 21 TGA
20	<b>M/s. Indogulf Fertilizers &amp; Chemicals Ltd.,</b>	Jagdishpur, U.P.	Fertilizer	Air Compressor drive turbine of BHEL Make



AKI Technology

## CEMENT DIVISION



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S.No	CLIENT	LOCATION	INDUSTRY	PROJECT DESCRIPTION
1	<b>National Cement Company Ltd.,</b>	Uganda	Cement	Design, Engineering, Supply of Static & Dynamic Separator for Cement Mill Circuit
2	<b>Cladius Peters India Pvt Ltd.,</b>	Jhagadia	Cement	Design, Engineering, Manufacturing & Supply of Dynamic Separator for Gypsum Grinding Bowl Mill - East Lake
3	<b>Saboo Engineering Pvt Ltd.,</b>	Jodhapur	Cement	Design, Engineering, Manufacturing & Supply of Dynamic Separator Excluding Drive (Geared Motor & VVFD) for 8 TPH Coal Mill Circuit
4	<b>Takraf India Pvt Ltd.,</b>	Chennai	Mining	Manufacturing and Supply of Special Structural for Stacker / Reclaimer
5	<b>National Cement Company Ltd.,</b>	Kenya	Cement	Design, Engineering Supply of Static & Dynamic Separator for Cement Mill Circuit

# REFERENCE LIST

6	<b>Asian Cement Ltd.,</b>	Punjab	Cement	Design, Engineering, Supply of Dynamic Separator for cement mill circuit
7	<b>Ratna Cement Ltd.,</b>	Karnataka	Cement	Design, Engineering, Supply of Dynamic Separator for cement, Raw & Coal mill circuits
8	<b>Zuari Cement Ltd., - SGU</b>	Kadapa	Cement	Operation & Maintenance for Cement Grinding Unit
9	<b>Rashmi Cement Ltd.,</b>	Kolkata	Cement	Design, Manufacturing & Supply of VRM Parts for Slag Grinding circuit
10	<b>Claudius Peters (India) Pvt. Ltd., (Project - Tuban Holcim)</b>	Jhagadia	Cement	Manufacturing & Supply of structural steel and pipes for ship loader building
11	<b>Emriates Cement India Pvt. Ltd.,</b>	UAE	Cement	Design, Engineering, Supply & Services of Dynamic Separator for White Cement Mill circuits
12	<b>AMCL Machinery Limited, (Project - JK Lakshmi Cement )</b>	Mumbai	Cement	Design, Engineering, Supply & Services of Static & Dynamic Separator for VRPM Cement Mill circuits
13	<b>FLSmith Private Limited. (Project - Zuari Cement Ltd)</b>	Cochin	Cement	Engineering & Supply of Structural Steels & erection of Mechanical Equipments for Cochin port Cement bagging facility
14	<b>PT Indocement Tungal Prakarsa Tbk</b>	Indonesia	Cement	Design, Engineering, Supply, Dismantling, Erection & Commissioning of P4b - Cement mill circuit up gradation on turnkey basis
15	<b>Myanmar Economic Corporation</b>	Myanmar	Cement	Pyro Process Calcliner Modification System for 900 TPD Cement Plant, HPA-AN
16	<b>Lafarge India Pvt Ltd., Arsameta Plant</b>	UAE	Cement	Design, Engineering, Supply, Dismantling, Erection & Commissioning of Coal Mill Separator, Bagfilter & Fan on turnkey basis
17	<b>Trimex Sands Pvt Ltd.,</b>	Chennai	Cement	Design, Engineering & Supply of Dynamic Separator, Bag filter with fans for Silimanite Grinding
18	<b>Benue Cement Company PLC,</b>	Nigeria	Cement	Design and Engineering, Manufacturing and Supply of High efficiency separator parts and auxiliaries & Electrical and Instrumentation for Cement Mills No. 1 & 2
19	<b>Deccan Chromates Ltd,</b>	Hyderabad	Chemical	Design and Engineering for Coal mill Grinding circuit for Chromate plant

# DESIGN & ENGINEERING PROFILE

## AN OVERVIEW

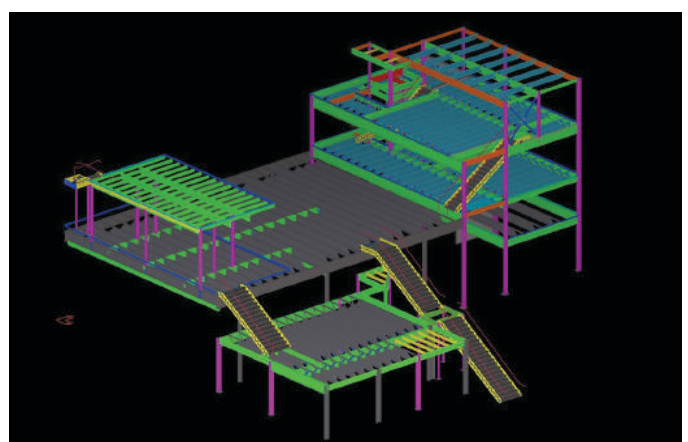
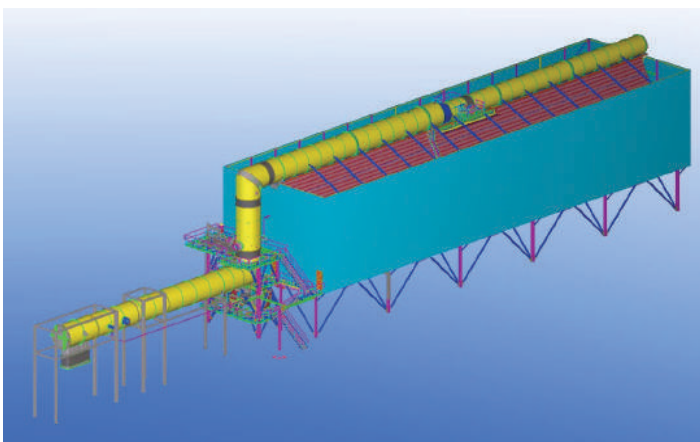
**ENMAS** is providing engineering service since 2015. ENMAS is a leading engineering and steel detailing company with offices in chennai, Tamilnadu India. Our team of dedicated Project Manager, Engineer & Detailers have vast experience in the field of detailing & engineering.

**ENMAS** have detailed engineering services facilities by using **Tekla & Autocad**. We deliver precise steel detailing drawings. We take time to comprehend the client's obligation and provide work rendering to client's needs.

### Steel Detailing Expertise :

We are specialized in producing detailed structural steel fabrication shop and erection drawing that follow clients' customized standards while maintaining the guidelines set by AISC, NISD and OSHA.

- ◆ Consistent communication with an experienced staff to produce on-time, on-budget results.
- ◆ 3D Modelling using Tekla Structures.
- ◆ Fabrication Drawing, Erection Drawing & Part Drawings.
- ◆ Ability to supply Production Tracking Report : ABM's, Shop Bolt Lists, Field Bolt Lists, Material Summary, and Gather Sheets for convenience in the fabrication and erection process.
- ◆ Capability to provide CNC, KISS, DXF, CIS2, and IFC files for Material Management software systems, shop production line equipment or merging our model with the final construction model for clash detection.
- ◆ Drawing produced in Imperial or Metric measurement formats.



## BENEFITS OF OUTSOURCING DETAILING

**HIGH CLIENT COMMITMENT :** We maintain few client but work very closely with these clients, continuously providing them superior service that they depend upon

**HIGH ACCURACY :** All projects are executed through our ISO 9001 certified quality processes. Enmas personnel have been trained in USA and on the AISC/NISD approved training program. Our in-house structural engineering capability allows us to comprehensively understand and Execute projects.

**GUARANTEED SCHEDULE :** Enmas has a unique web - based project and resource management system, which allows online control of projects and personnel working on projects. Our large staff size allows flexible deployment of personnel on projects as needed to meet tight client schedules

**COST REDUCTION :** Detailing is done from our engineering center in india, which allows us to offer substantial cost-reduction over US rates

## OFFSHORE ENGINEERING

### DESIGN METHODOLOGY OF OFFSHORE JACKETS

The principle behind the fixed platform design is to minimize the natural period of the structure below 4 seconds. In order to avoid resonant behaviour with waves ( periods mostly in the order of 4 to 25 seconds in the sea state). The structural and foundation configuration shall be selected to achieve this concept. Offshore platforms shall be fixed to the seabed by means of piles driven through the main legs or with the combinations of both main and skirt piles.

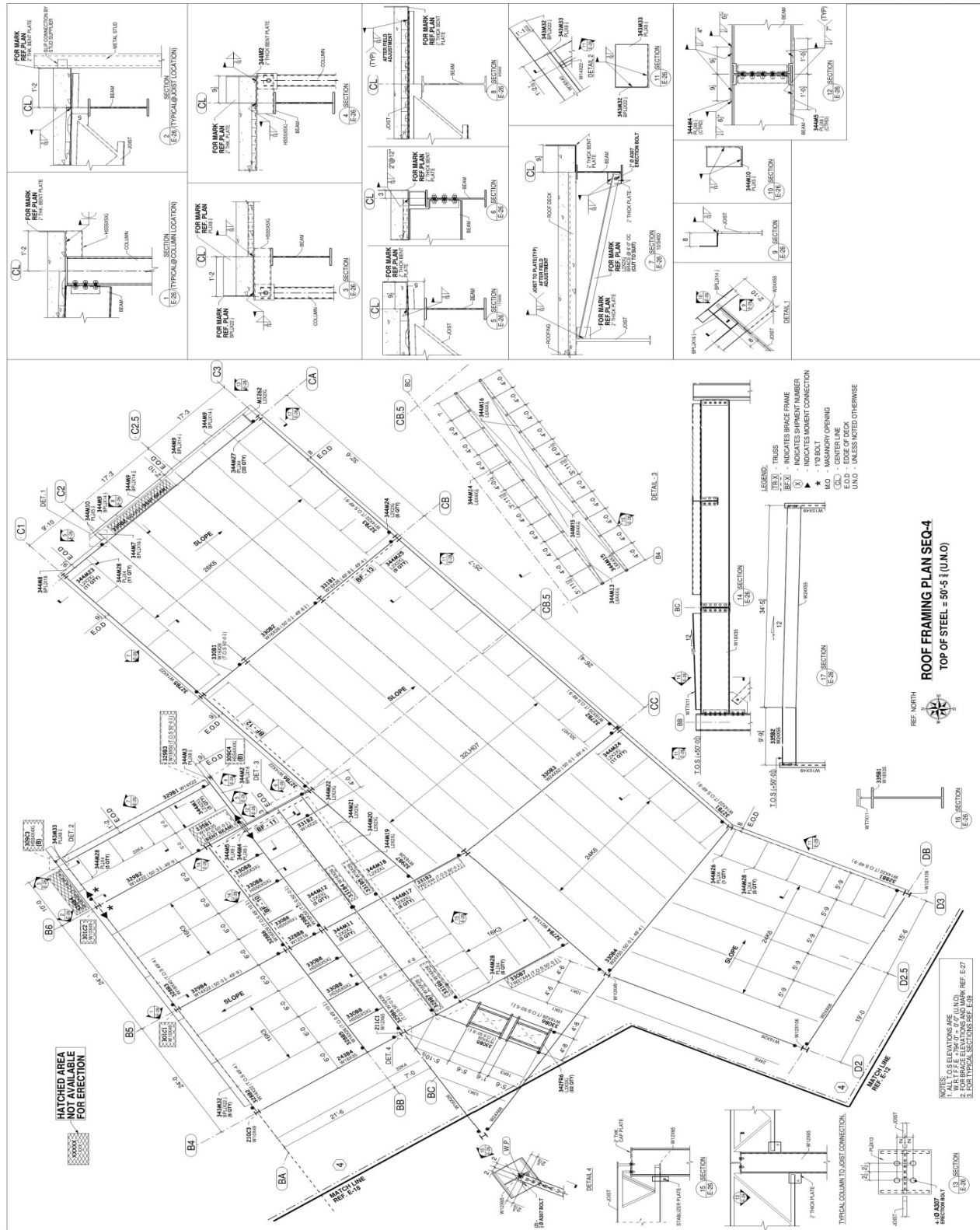
- Design Parameters
- Analyses & Design
- Pre-service Analyses
- Loadout Analyses
- Trailer Loadout
- Transportation with sea fasteners
- Lifting Analysis API lift
- SKEW Lift
- OBS - on bottom stability
- Push Over Analysis
- Organogram for Offshore Engineering



# DESIGN & ENGINEERING PROFILE



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# DESIGN & ENGINEERING PROFILE



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## OUR REFERENCE

Detailed Engineering services



SINGAPORE.

Man Power Deputation of Detailed Engineering service for CFBC 7 AFBC boilers at Noida



NOIDA - 201 301 UTTAR PRADESH, INDIA.

Detailed Engineering services



At CHENNAI

Detailed Engineering services. At CHENNAI - 600 058

ESSKAY DESIGN AND STRUCTURES



Detailed Engineering Services  
(TEXAS - UNITED STATES)



Detailed Engineering Services  
(CHENNAI-INDIA)



Detailed Engineering Services  
(ALBERTA - CANADA)



Detailed Engineering Services  
(SAMRONG, THAILAND)



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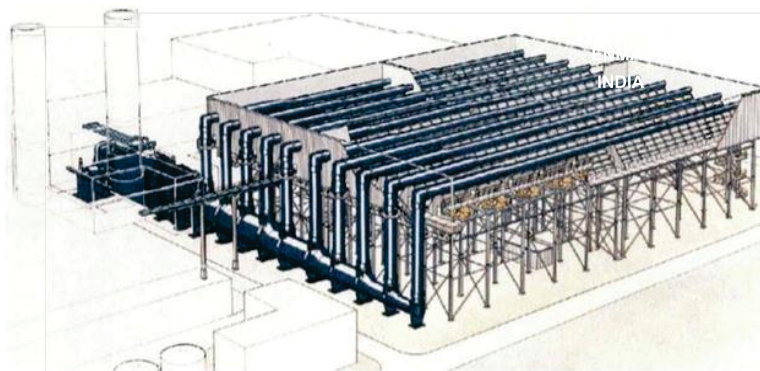
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INDIA**

## ENMAS AIR COOLED CONDENSER

**ENMAS INDIA ACC DIVISION** is an experienced ACC engineering and supply firm located in Chennai, India. The Founders and the Engineers have a combined experience of more than 25 years with various multi - national companies in the design and engineering of single and multi row Air Cooled Condenser.



## DRY COOLING - THE PERFECT SOLUTION



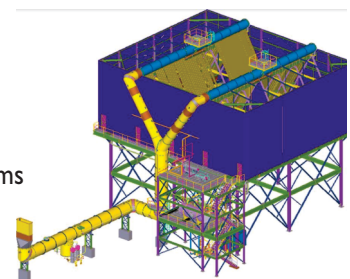
### ADVANTAGES OF DRY COOLING

#### ENVIRONMENTAL

- No Plume
- No Drift Emissions
- No Blow Down
- No Water Treatment Chemicals
- No Leaching of Wood Preservatives

#### OPERATIONAL AND MAINTENANCE

- Lower Annual Maintenance Costs than wet Cooling Systems
- No Circulating Water Pump Costs
- No Water Pretreatment Costs
- No Water Chemical Costs
- No Outages Required for Maintenance
- Longer life span than wet Cooling Systems







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## ACC PROCESS DESCRIPTION

Steam from the turbine flows under vacuum to the primary fin tube bundles

Some Steam Condenses in the ducting before reaching the primary fin tube bundles, flows into the drain pot and then to the condensate tank by gravity or by pump

90-95% of the steam condense in the primary bundles and flows by gravity to the condensate tank

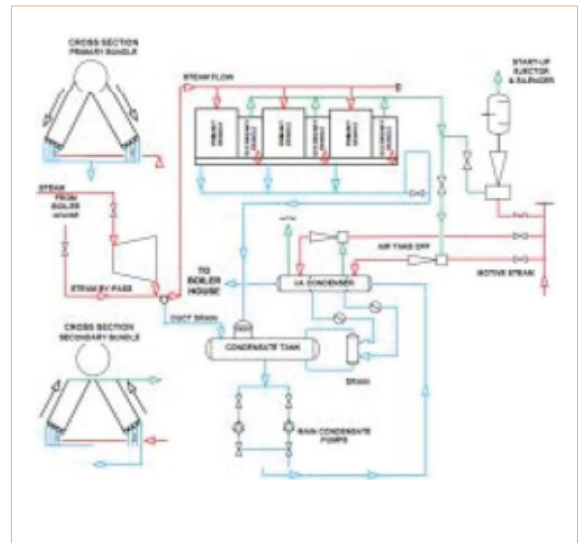
The remaining 5-10% of steam is pulled upward through the secondary tube bundles, condenses and flows by gravity down to the condensate tank

Non-condensable are extracted from the top of the secondary fin tube bundles by pressure drop created by steam ejectors

Non-condensable and residual steam are then processed by the inter and after condenser and condensate flow by gravity to condensate tank, non-condensable are ejected to atm

Main condensate pumps circulate condensate from condensate tank back to the boiler

### TYPICAL SIMPLIFIED PROCESS DIAGRAM



## ENMAS OFFERS THE FOLLOWING SERVICES TO THEIR CLIENT

### EQUIPMENT DESIGN

- ACC Data Sheet.
- Condensate Receiver tank.
- Steam Jet Air Ejector Data Sheet.
- Pump Data Sheet.
- Line List, Load list, Valve & Instrumentation List

### MECHANIAL DESIGN

- Mechanical Including Pump, Ducting And Structural Steel Drawings, Wind Wall Arrangement.
- Piping, Isometrics, Pipe Spool Drawing.
- Mechanical Strength Calculations.
- Equipment Requisition Packages.

### PROJECT MANAGEMENT & PROCUREMENT SERVICES

- Full Control of the Execution and Delivery of the Product.
- Work With the Single Sourced vendors to Ensure Quality and on time Delivery.

### ERECTION AND COMMISSIONING SERVICES

- Complete control of the Erection for on time Completion and Commissioning of ACC





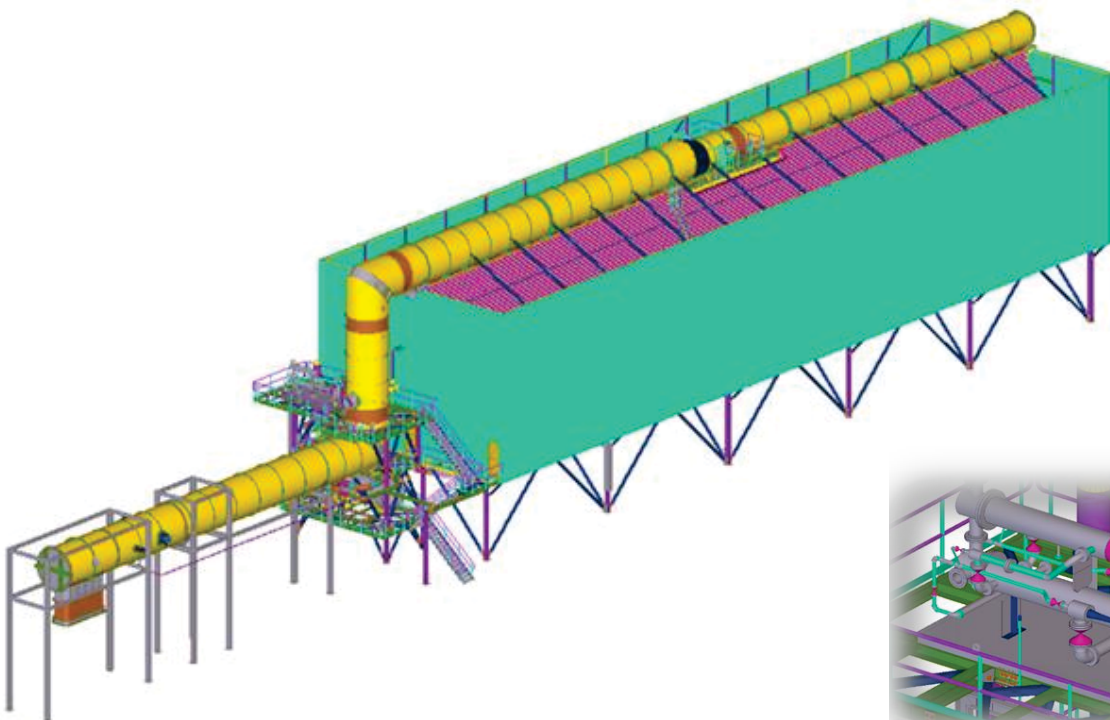
**ENMAS  
INDIA**

## ON TIME DELIVERY

- ENMAS is determined to become its customers most reliable partner. We understand that on - time delivery of the engineering is imperative to the project schedule. we are dedicated to meeting all customer schedule requirements whilst maintaining the highest levels of quality in order to eliminate the need to perform on - site rework.

Specific measures undertaken include :

- Error free shop detailing by combining the engineering and shop detailing.
- Allowing for transportation limitations during the design and engineering stage.
- Considering construction requirements during the design and engineering stage.
- Properly checking all engineering drawings prior to shop engineering to Eliminate unnecessary design amendments.
- Preparing 3D models to ensure fit and interface requirements are met, using state - of - the - art software, compatible with fabrication machinery.
- Performing interface checks at all scope limit points





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INDIA**

## REFERENCE LIST

S.No.	Client	Location	Year of Commissioning	Brief parameters
1.	SKY ALLOYS & POWER PVT. LTD.	RAIGARH - CG	JULY, 2013	16MW, 62 TPH, 0.18ATA
2.	RASHMI CEMENT LIMITED UNIT-III	JARGHRAM, WB.	JUNE, 2018	20 MW, 80 TPH, 0.18ATA
3.	UNITED COOLING SYSTEMS PVT. LTD.	COIMBATORE, TN	AUG, 2020	3.6 TPH, 0.2 ATA
4.	RESURGENT POWER PROJECTS LIMITED	S. KOREA	FEB, 2022	10MW, 36TPH, 0.15 ATA
5.	PUSHPIT STEELS PRIVATE LIMITED	KALAHASTHI, AP	MARCH,2023	15 MW, 58TPH, 0.18 ATA
6.	CREST STEEL & POWER PVT. LIMITED	DURG, CHATTISGARH	UNDER PROGRESS	35MW, 125TPH, 0.2 ATA

### CORPORATE OFFICE

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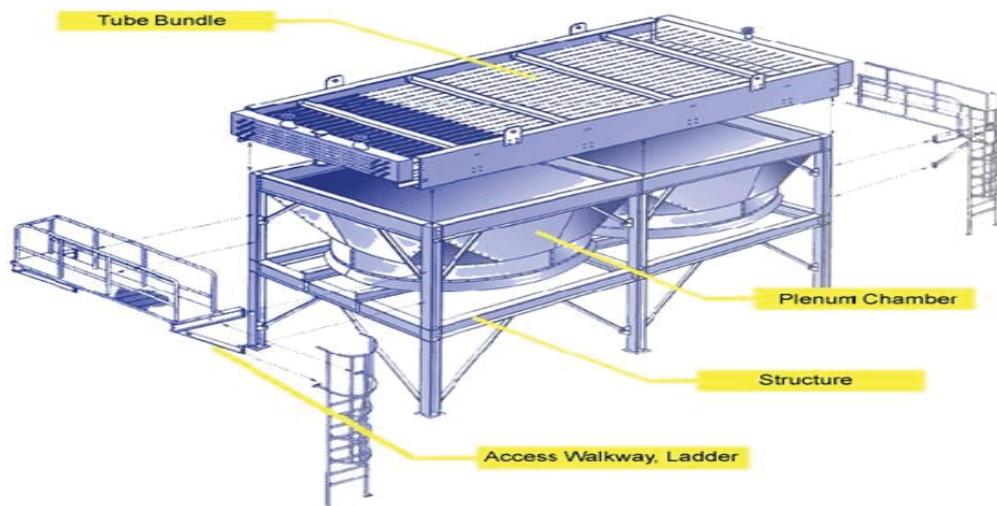
E-Mail : lve@enmasindia.com

Web : www.enmasindia.com



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INDIA

## AIR COOLED HEAT EXCHANGER



## DRY COOLING - THE PERFECT SOLUTION

## ENMAS INDIA GROUP

**ENMAS INDIA GROUP** is a leading technology group offering profitable and customized service to customer for diversity field through by EPC to operation maintenance for life cycle of equipment's on power plant, cement, steel, oil and gas, refinery, Petro chemical and Allied industries.

**ENMAS INDIA** is offering the innovative and modern air heat exchanger technology and is offering whole range of services for air cooled heat exchanger (ACHE) system for petroleum, petro chemical, power generation, chemical industries.

ENMAS Air Cooled Heat Exchanger system is designed for optimizing the energy and assuring the reliability of product through its life span.

### SERVICE OFFERING

1. Feasibility study
2. Conceptional Design and FEED
3. Sizing, Design and Detailed Engineering
4. Procurement, Installation, Erection and Commissioning
5. Process and Operation Control
6. Civil and Structural System
7. Performance Testing
8. Rehabilitation and Upgradation

### ENMAS ACHE SYSTEM

1. Meets High Pressure and Temperature options.
2. Designs to Meets the specific condition like corrosive Environment, extreme temperature zone etc...
3. Rehabilitation and Upgradation
4. Designed to optimize the energy and Reliable of product throughout the life span of the ACHE.
5. Design and construction meetings to Global standards as per applications like ASME, AP I661 Etc...

## AIR COOLED HEAT EXCHANGER

AIR COOLED HEAT EXCHANGERS are used to cool and / or condense various process fluids in refineries, gas, petrochemical, fertilizer, steel and power industries. ACHE usage in these sectors result in significant savings of cooling water costs.



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## TYPICAL AIR FIN COOLERS CONFIGURATION

PRODUCT	TYPE	RANGE
Air cooler heat exchangers (coolers / condenser)	Induced Draft Forced Draft	Tube Bundles : 15m Long, 4.9 M Width, 12 Rows, Fan-up to 9m Dia
Headers	Plug Type Cover Plate Pipe Welded / Bolted Bonnet	Carbon steel, Low Alloy Steel Stainless Steel, Incoloy, Clad Steel
Finned Tubes	“G” Embedded “KL” Knurled “L” Wrap ON Extruded Welded	Base Tube : Carbon Steel, Stainless Steel, Alloy Steel, Brass, Duplex steel, Incoloy and Titanium. Size : OD : 5/8” - 2”  FINS : Aluminum, Carbon Steel, Copper. FIN HEIGHT : 5/8”, 1/2”, 3/8” EPI : 7-11 for Aluminum 4-7 Carbon steel,

## DESIGN BASIS FOR AIR COOLED HEAT EXCHANGERS

DESCRIPTION	SOFTWARE
THERMAL RATING	HTRI  Indigenously Developed Procedure
Header Box Analysis (Mechanical Design)	Indigenously Developed
Structural Design	STTAD PRO
Drawing Preparation	Auto CAD & TEKLA





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## ON TIME DELIVERY

- \* ENMAS is determined to become its customer's most reliable partner. we understand that on time delivery of the engineering is imperative to the project schedule. we are dedicate to meeting all customer schedule requirements whilst maintaining the highest levels of quality in order to eliminate the need to perform on-site rework

Specific measures undertaken include:

- \* Error free in shop detailing by combining the engineering and shop detailing.
- \* Allowing for transportation limitations during the design and engineering stage.
- \* Properly checking all engineering drawing prior to shop engineering to eliminate unnecessary design amendments.
- \* Preparing 3D models to ensure fit and interface requirements are met, using state-of-the-art software, compatible with fabrication machinery.
- \* Performing interface checks at all scope limit points.

## MANUFACTURING, ERECTION & COMMISSIONING OF ACHE



## CORPORATE OFFICE ENMAS INDIA PRIVATE LIMITED

SP 107, AMBATTUR INDUSTRIAL ESTATE, AMBATTUR, CHENNAI - 600 058. INDIA

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Mobile : +91 - 96770 14682

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# ENMASWATER SOLUTIONS PRIVATE LIMITED

## Introduction

Water has always been an important factor on the planet. Water demand is increasing around the world for a variety of reasons. This demand is posing a challenge to all activities such as drinking, industrial process, and many other day to day utilities. This necessitates the installation of desalination systems, water and wastewater treatment plants, zero liquid discharge plants, and water recycling and reuse systems.

Water and wastewater solution providers are essential for treating water and wastewater in all industries including power, oil and gas, food and beverage, pharmaceutical, paper and textile, cement, steel, and others

## About us

We would like to introduce ourselves as ENMAS INDIA, an Energy Management Solutions company that was founded in 1983 and is full service asset management provider in India. ENMAS primarily serves the power, oil and gas, cement, water, petrochemical, and allied industrial segments, ENMAS has established itself as a leader in Industrial Asset Management, providing service such as O&M, asset integrity, EPC, facility management and training.

## Reliability

Our system ensure consistent optimal performance without disrupting production operation.

## Cost Effectiveness

We prioritize delivering exceptional value while safeguarding your facility's financial stability.

## Compliance

Enmas Water Solutions guarantees system that adhere to relevant standards, enabling responsible and compliant operations.

Enmas Water Solutions Private Limited (EWS), a division of Enmas, offers complete turnkey solutions for water and wastewater treatment projects in and around the world, as well as a solution for all other water and wastewater requirements.

Having qualified team with extensive experience in the domain of Water Treatment (STP, ETP, RO, Softener, DM Plant) & chemical engineering professionals and technology tie ups are in place with prestigious alliances / associates with some of the world's leading engineering & technical companies to access technical expertise to provide unmatched experience in various multi-disciplinary engineering projects.



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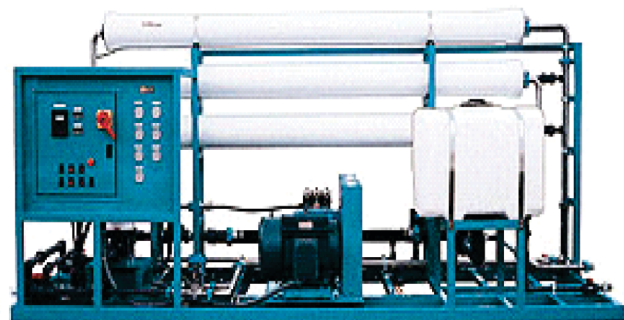
## ONTIME DELIVERY

- \* Pre-treatment System
- \* Water Treatment Plant (WTP)
- \* Boiler Feed Water
  - ( Demineralization plant (DM)
  - ➔ Clarification & Settling
  - ➔ Softener
  - ➔ Ultra - Filtration
  - ➔ Reverse Osmosis
  - ➔ Mixed Bed & Demineralizer Plant



## DESALINATION PLANT

- \* Intake System
- \* Pre - Treatment
  - ⇒ Filtration
  - ⇒ Ultrafiltration
- \* Seawater RO Plants / BWRO/ MED





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INDIA**

## **SEWAGE TREATMENT PLANT (STP)**

- \* Activated Sludge Process
- \* Fluidized Bed Bio Reactor/ Moving Bed Bio Reactor
- \* Sequence Batch Reactor
- \* Membrane Bio Reactor
- \* Anaerobic Digesters



## **EFFLUENT TREATMENT PLANT (ETP)**

- \* Clarification
  - ➔ Lamella clarifiers
  - ➔ Tube Settlers
- \* Aeration / Extended oxidation
- \* Filtration
  - ➔ Activated Carbon Filters
  - ➔ Pressure Sand Filters
  - ➔ Gravity Sand Filters
- \* Dosing



## **ZERO LIQUID DISCHARGE (ZLD)**

- \* ETP + RO + Multiple Effective Evaporation
- \* Mechanical Vapor Re-compression Evaporation





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## REFERENCE LIST

PROJECT NAME	LOCATION	CLARIFIER	UF	RO PLANT	DM PLANT
NLC tuticorin – Desallination Plant	Tamil Nadu	3000 m <sup>3</sup> /hr	700 m <sup>3</sup> /hr	8000 m <sup>3</sup> /hr	75 m <sup>3</sup> /hr
Finolex Industries Limited	Maharashtra	105.5 m <sup>3</sup> /hr	99.0 m <sup>3</sup> /hr	10 m <sup>3</sup> /hr	62.0 m <sup>3</sup> /hr
BARC Kalpakkam – MSF Sea Water Desallination Plant	Tamil Nadu				188 m <sup>3</sup> /hr
Surana Industries Limited	Karnataka		15.00 m <sup>3</sup> /hr	13.0 m <sup>3</sup> /hr	10.0 m <sup>3</sup> /hr
Gallant Metal Limited	Gujarat	40. m <sup>3</sup> /hr	33.5 m <sup>3</sup> /hr	30.0 m <sup>3</sup> /hr	25.0 m <sup>3</sup> /hr
Amrith Power Private Limited	Rajasthan	150.0 m <sup>3</sup> /hr		13.5 m <sup>3</sup> /hr	10.0 m <sup>3</sup> /hr
OPG Power Limited (10 MW)	Tamil Nadu			12.0 m <sup>3</sup> /hr	6.0 m <sup>3</sup> /hr
OPG Power Limited (80 MW)	Tamil Nadu			29.0 m <sup>3</sup> /hr	22.0 m <sup>3</sup> /hr
Sal Steels Limited	Gujarat	205.0 m <sup>3</sup> /hr		53.0 m <sup>3</sup> /hr	15.00 m <sup>3</sup> /hr
Basai Steels Limited	Karnataka	55.0 m <sup>3</sup> /hr	53.0 m <sup>3</sup> /hr	48.0 m <sup>3</sup> /hr	10.0 m <sup>3</sup> /hr
Dalmia Cements Limited	Tamil Nadu		40.0 m <sup>3</sup> /hr	35.0 m <sup>3</sup> /hr	10.0 m <sup>3</sup> /hr
Synergy Sakthi Renewable Energy Limited	Tamil Nadu		14.0 m <sup>3</sup> /hr	12.6 m <sup>3</sup> /hr	10.0 m <sup>3</sup> /hr
Vellore Co - Operative Sugar Mills Ltd	Tamil Nadu	50 m <sup>3</sup> /hr	20 m <sup>3</sup> /hr	15 m <sup>3</sup> /hr	12.5 m <sup>3</sup> /hr

## OPERATION & MAINTENANCE

SNO	NAME OF CLIENT	SCOPE OF WORK
1	Bhabha Atomic Research Centre	Annual operation and maintenance of MSF seawater desalination plant at NDDP, Kalpakkam
2	GB Saline water solutions private limited	Manpower contract at NCTPS site, NIOT, Ennore port
3	NLC Tamilnadu Power Limited	Analytical work at desalination and water treatment plant of NTPL
4	Nuclear Power Corporation of India Limited	Operation of DM plant, Liquid nitrogen plant, Water treatment systems

### CORPORATE OFFICE

#### ENMAS WATER SOLUTIONS PVT LTD

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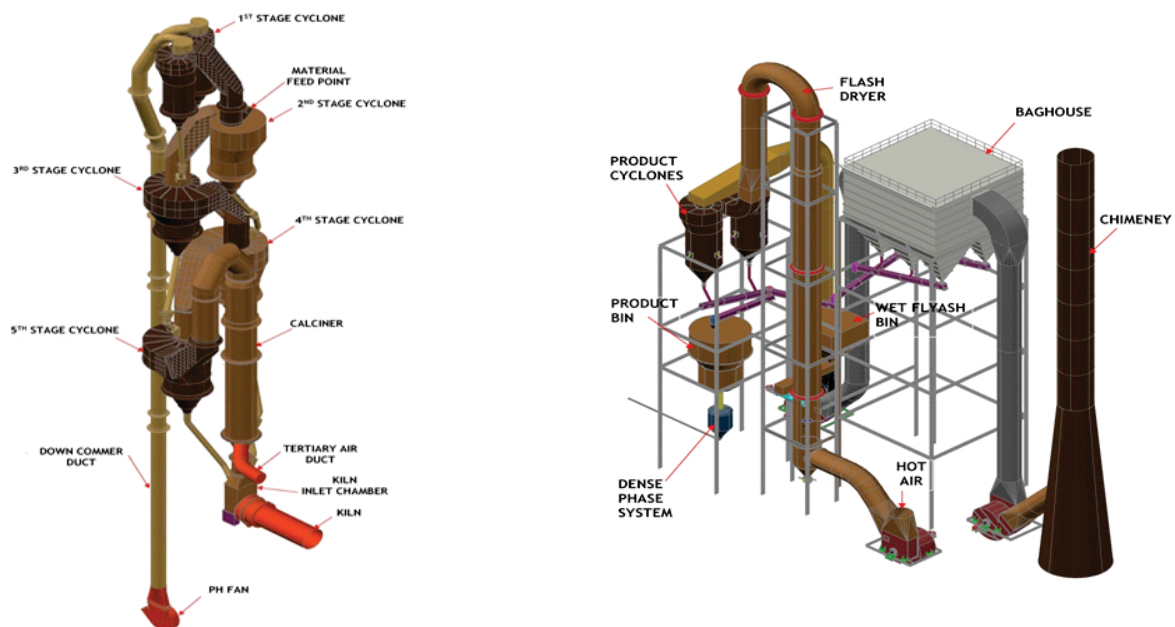




## ENMAS MINERALS PVT LTD

**ENMAS Minerals** is a Pioneer Engineering company related to Cement Plant & allied industries and Heavy Fabrication. We associate with Consultancy & Engineering, System Design, and Manufacturing & Supply of Equipments catering to Global requirements.

With our professional experiences in various discipline I.E., Process design, Cement Plant Equipment Design, Erection, commissioning etc.,



## Design, Engineering & Manufacturing of Equipment for Cement and other Allied Industries as follows

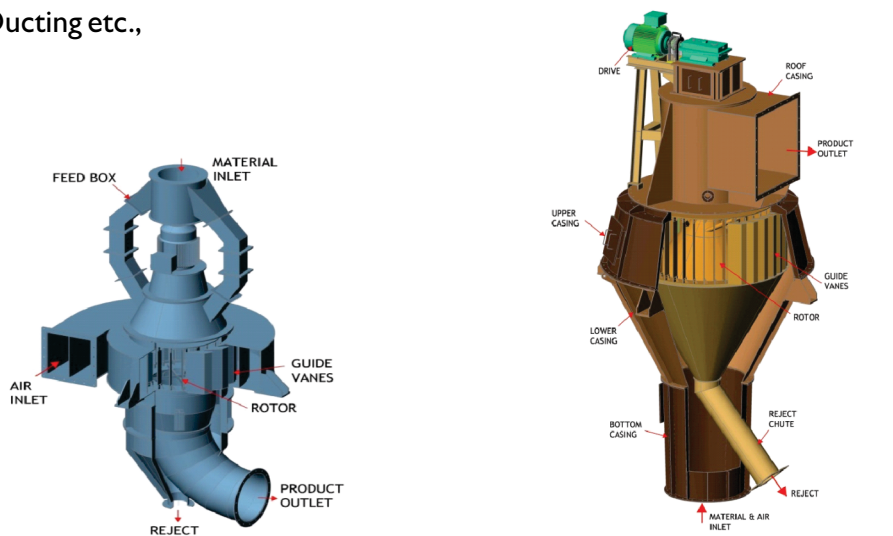
- High Efficiency Dynamic Separators (Limestone, Clinker & Coal Grinding)
- Flash Drier System
- Cyclones
- Process Fans
- Process Bag Filters
- Other Auxiliary Equipments - Air Slides / Flap valves / Gates / etc.



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INDIA**

## MANUFACTURING FACILITIES:

Our major activities includes Heavy Steel Fabrication, Machining and supplying of Equipment Parts, Critical machinery Spares like Dynamic Separators, Kiln Shell, Mill Shell, Grate cooler, PH Cyclones, Separator Cyclones, Fan casings, Stacks, Material Handling Equipment, Industrial process equipment, Ducting etc.,



## HIGH EFFICIENCY DYNAMIC SEPARATORS

CUSTOMER	LOCATION	DESCRIPTION
Metro Cement Limited	Uganda	Design, Engineering, Manufacturing and Supply of Mechanical Equipment for 70TPH Cement Grinding Circuit.
National Cement Company Ltd.	Uganda	Design, Engineering, Supply of Static & Dynamic Separator for cement mill circuit.
Cladius Peters India Pvt. Ltd.	Jhagadia	Design, Engineering, Manufacturing and Supply of Dynamic Separator for Plaster Grinding Bowl Mill
FLSmith Private Limited. (Project - Zuari Cement ITD)	Cochin	Engineering & Supply of Structural Steels & election of Mechanical Equipments for Cochin port Cement bagging facility
PT Indocement Tungal Prakarsa Tbk	Indonesia.	Design, Engineering, Supply Dismantling, Erection & Commissioning of P4b - Cement mill circuit upgradation on turnkey basis.
AMCL Machinery Limited,	Mumbai	Design, Engineering, Supply & Services of static & Dynamic Separator for VRPM Cement mill circuit.
Adhunik Cement Ltd,	Kolkata	Design, Engineering for Hot Air Duct Modification.
Volta Impex Pvt. Ltd	Togo	Manufacturing & Supply of V-Separator Drying System for Lime Stone before Raw Mill Circuit.
Dangote Cement PLC	Benue Plant	Design, Pre - Engineering, Detail Engineering, Supervision of erection & Commissioning, Manufacturing and Supply of Auxillary equipments for 335t/h Cement Grinding Project.
Heidelberg Cement India Limited	Damoh	Design & Engineering, Supply, Fabrication and Erection of Pyro Process Line #2. Calciner & other Modification for their unit at Diamond Cement - Damoh (MP).
Benue Cement Company PLC,	Nigeria	Design and Engineering, Manufacturing and supply of high efficiency separator parts and auxiliaries & Electrical and Instrumentation for Cement Mills No.1 & 2
Deccan Chromates Ltd,	Hyderabad	Design and Engineering for coal mill Grinding circuit for Chromate plant
Super Cement Manufacturing Co LLC,	Abu Dhabi	Design and Engineering for for 120TPH Granulated blast furnace Slag grinding unit
PMT Zyklontechnik Asia Sdn Bhd.,	Malaysia	Design & Engineering and supply of High Efficiency Dynamic Separator for Raw Mill.
Chettinad Cement Corporation Ltd.,	Puliyur	Design & Engineering for Hot gas facility for Coal mills from Pre-heater fan



\* Power \* Oil & Gas \* Petrochemical \* Fertilizer \* Chemical

\* Cement \* Steel \* Process Industries \* T&D Division \* Water Treatment

ENMAS  
INDIA  
GROUP

[www.enmasindia.com](http://www.enmasindia.com)



# ENMAS GEOGRAPHICAL PRESENCE



● Corporate Head Office

★ Project Locations

Map is for representation purpose only



C E R T I F I E D



Projects in India

● Corporate Head Office



ENMAS

ENMAS INDIA PRIVATE LIMITED  
ENMAS MINERALS PRIVATE LIMITED  
ENMAS ENVIRO PROJECTS PRIVATE LIMITED  
ENMAS WATER SOLUTIONS PRIVATE LIMITED  
GRADIANT ENMAS WATER SOLUTIONS PRIVATE LIMITED  
ACE ENMAS RENEWABLES PRIVATE LIMITED

ENMAS POWER TECHNICAL SERVICES LLC, UAE  
ENMAS TECHNICAL SERVICES WLL, QATAR  
ENMAS POWER TECHNICAL SERVICES KENYA LIMITED  
ENMAS ARABIA CONTRACTING COMPANY  
ENMAS LTD (UK)

## Corporate Head Office

"EOM Square"

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Tel / Fax : +91 44 3000 3888

## Regional Office

Dubai, UAE.  
Doha, Qatar.  
Nakuru, Kenya.  
Kingdom of Saudi Arabia,  
UK