



# **MAGS ENERGY SOLUTIONS PVT LTD**

**Engineering Excellence in the Field of Energy, Power and Process**

## **INTRODUCTION:**

We take this privilege to introduce ourselves as an Engineering Consulting firm providing end to end Services, comprehensive Engineering and Scientific solutions for the various sectors such as Energy, Power, Petrochemical, Refineries in the areas of Operation & Maintenance, Erection, Commissioning etc.

## **ABOUT US:**

MAGS ENERGY SOLUTIONS PVT LTD is an Engineering Consulting firm established with a view to provide comprehensive Engineering and Scientific solutions for various industries and enterprises. Our strength lies in our knowledge-based analysis and simple, cost effective solutions.

Our team of engineers & technicians are highly qualified and groomed, to meet challenges in every possible environment. The business operations and project coordination activities for the project clients are handled from our Coimbatore office.

## **MAGS ENERGY In O & M**

MAGS ENERGY has established a unique place in the Thermal Power Plant market, with high quality equipment and services. The High-pressure Steam Generators designed and supplied by Our Reputed Vendor, Coal fired (AFBC, CFBC, PF), Chemical Recovery Boilers for Pulp and Paper mills, Biomass, Oil / Gas, WHRSG for GTCC and process Waste Heat Boilers, for Captive and Independent Power Plants, have been serving the customers with high efficiency and reliability.

As an OEM and EPC provider of Thermal Power Plants, the Group has been offering the services from Concept to Commissioning. Through MAGS ENERGY Solutions Pvt Ltd., the group's spectrum of services extends to the entire Life Cycle of the plant.

As more and more IPPs & CPPs are being promoted, a professionally managed O&M support is the need of the day. Mags Energy offers integrated O&M services including Chemical cleaning of boilers /condensers & Spares management, taking full responsibility of the total Power Island, and enable the customer to focus on core business alone.

Having accumulated O&M experience on total plant capacity of 1 000 MW, in the last ten years, and technical work force, Specialized Experts in field of Energy, Power Plants, across India & Abroad, Mags Energy has established a strong brand for dependable long-term Operator providing integrated O&M services of highest Standards with Quality and Safety.

## **The key specialties O&M**

- Backed by technically and financially sound group in Energy field, having experience of more than 35 years, in thermal Power Plant.
- Collaboration with VGPE & PAT Groups for Power plant O&M and Asset Management Services.
- 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 systems.
- Access to the state-of-the-art technologies from group's collaboration with leading global organizations.
- Experience in the plant betterment, Remnant Life Assessment (RLA) studies, performance monitoring and testing.
- Advantage of Group companies being OEMs for steam generators and auxiliary plants- Provide Spares Management
- services- preparation of drawings, improvements, manufacture and supply besides planning and inventory control.
- Complete Mechanical, Electrical & Instrumentation (E&I) services, Manufacturing of Panel & Transformer from the group company.
- Group's experience in power plant consultancy. Large pool of dedicated, and Knowledgeable manpower within the group.

- Well-equipped O&M Training institute for induction training and as well for advanced training within the group.

### Main Objectives of Mags Energy O & M

- Ensure high plant availability with well-defined Maintenance policy, schedules and spares management.
- Achieving the target PLF with proper fuel management, capacity utilization and establish appropriate Standard Operating Procedures (SOP).
- Keep up the designed plant efficiency and Heat Rate.
- Accident free plant operation and with awareness of environmental impact, by defined SHE policy.
- Implementation of communication and recording of work place Hazards, injuries, near miss incidents.
- Zero level of harm to people and environment involved in our operations.
- Provide customer assistance in taking appropriate asset management policy and claims, meeting statutory compliances.



### OUR STRENGTH

With our collective experience and expertise, we can provide comprehensive solutions covering following areas of importance to any industrial enterprise.

## **O & M Training and Development**

- To meet the demand of power plant engineers, MAGS ENERGY O&M in association within group Institute, Chennai, Tamilnadu provide training on power plant Operation and Maintenance and then induct them into the organization.
- Besides usual methods of training through class room lectures, case studies / Group discussions, training by Simulator and practical training at a Power station is provided.
- Advanced training for the persons already in the job is provided by Simulator in-plant training and at OEM works.
- An indoor Simulator with high quality software is installed at the institute.

## **Overseas Operations**

MAGS ENERGY is capable of providing a strong overseas support for Total Asset Management Services which includes Operation & Maintenance Services, Technical Consultancy Services, Facility Management Services, Project specific services, Training etc. for Power, Oil & Gas, Petro Chemical, Steel and Cement Industries.

## **Capabilities**

- Strong Technical skills to carry out Erection, Commissioning (RFS), Inspection, Planning, Operation & Maintenance and Project based activities.
- Total Maintenance Planning Activities-Retrieving the activities from CMMS, Reviewing, Planning, scheduling, execution and close out in SAP and meeting the Key Performance Indicators.
- Technical Consultancy support services for RCM, CMMS, Equipment Strategy implementation, stores verification, Materials coding & cataloging.
- Technical Training for Engineers and Technicians.
- Skilled Manpower support -O&M and Consultancy services

With our dedicated and experienced Manpower strength we are capable of offering various Supports which includes

## **O & M Services**

- Project Management Services
- Refurbishment, Relocation, Erection & Commissioning Services
- Operation & Maintenance
- Shut down /short term assignment with a Team of Engineers & Technicians

## **Plant Optimization & Consultancy Services**

- Equipment Strategy Implementation
- CMMS Implementation
- RCM support
- Stores verification, Materials coding & cataloging
- In-house Condition monitoring implementation

## **Facility Management Services**

- Hard Services (M/E/P)
- Soft Services
- Housekeeping
- Security
- Land scrapping



## Commissioning Support

- Review and comment on Operation & Maintenance Manuals provided by OEMS.
- Development, fine-tuning and implementation of Computerized Operation & Maintenance Management systems.
- Review of documents such as plant systems description, spare parts list & recommendations for maintenance practices etc. as provided by 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.

## Post Commissioning

- Man the Power station on 24 hours' basis considering safety aspect.
- Manage all Operations & Maintenance in compliance with the applicable laws, regulations, O&M manuals, Client's requirements

## OUR SERVICES IN DETAILS:

Our services are customizable according to our client's needs, and are aimed at solving most of their technical and project management related issues. The following are our few services includes.

- ❖ Operation & Maintenance
- ❖ Design & Detailed Engineering Services
- ❖ Designing Project Reports
- ❖ Project Management
- ❖ Construction Management
- ❖ Inspection
- ❖ Energy Management Systems
- ❖ Power System Analysis
- ❖ Marketing Survey
- ❖ Renovation & Modernization
- ❖ Consultancy Services
- ❖ Civil Engineering
- ❖ Pollution Control Systems
- ❖ Piping
- ❖ Electrical & Instrumentation Systems.



## POWER GENERATING PLANTS

- Fossil fuel
- Biomass (all types of agro wastages)
- Blast furnace gas
- Diesel generator
- Bio Gas
- Waste to Energy
- Solar Farm & Roof top Solar Plant
- Hydro & Wind Energy

## **ENGINEERING SERVICES**

- Design and detailed engineering services, Industrial boilers
- Waste heat recovery boiler
- Piping (power & process)
- Pressure vessels and heat exchangers
- Storage tanks
- Combustion systems
- Instrumentation systems (including PLC and DCS)
- Electrical systems (EHT, HT, and LT)

## **BASIC AND FRONT-END ENGINEERING**

- Site selection
- Feasibility studies
- Optimization studies
- Study of waste heat recovery systems
- Conceptual studies
- Statutory clearance
- Preparation of O&M manual
- Training
- Energy auditing and management

## **DETAILED PROJECT REPORTS**

- Review of feasibility reports
- Finalization of thermal cycle parameters
- Preparation of heat and mass balance power balancing diagrams
- Preparation of detailed specification of major plant and equipment
- Getting budgetary offers for the main plant and balance of plant equipment.
- Preparation of estimate and bill of materials for civil works and foundation
- Preparation of single line diagram power evacuation scheme
- Cost estimate
- Financial analysis
- Sensitivity analysis
- SWOT analysis
- Preparation of drawings and documents

## **DESIGN AND ENGINEERING**

- Design of boilers and pressure-vessels
- Waste heat recovery systems
- Solid fuel handling systems
- Liquid fuel handling systems
- Design of structure
- Design of supports
- Design of instrumentation systems
- Design of electrical systems including switchyard and power evacuation
- Preparation of arrangement drawings
- Preparation of fabrication drawings
- Preparation of quality of plans preparation

## **DETAILED ENGINEERING**

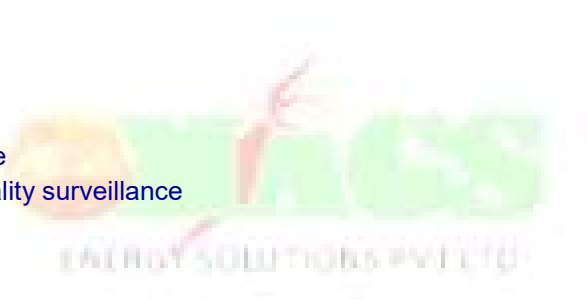
- Structural design
- Preparation of manufacturing drawings
- Preparation of general arrangements drawings
- Preparation of bills of materials
- Preparation of P&I diagram for various systems
- Preparation of foundation loading calculations
- Preparation of engineering requests (ER)
- Preparation of DU units (despicable units)
- Procurement engineering

## **PROJECT MANAGEMENT**

- Project planning
- Activity scheduling
- Resource mobilization
- Engineering coordination
- Project review
- Cost controlling
- Safety training

## **CONSTRUCTION MANAGEMENT**

- Review engineering
- Inspection at construction site
- Review quality plans and quality surveillance
- Procurement assistance
- Construction supervision
- Performance testing



## **INSPECTION**

- Review of manufacturing of quality plans
- Review of test procedure
- Review of the results and suggesting rectifications
- Witness of routine tests, Witness of performance tests
- Witness of statutory tests

## **ENERGY MANAGEMENT SYSTEMS**

- Energy conservation studies
- Furnace studies, Energy conservation in steam and power systems
- Waste heat recovery systems
- Burner management & combustion system improvements
- Automation of optimum plant efficiency

## **POWER SYSTEM ANALYSIS**

- Load flow analysis
- Fault analysis
- Stability analysis, Relay coordination
- Harmonic analysis and filter design
- Transient studies, Impact on grid
- Under voltage, under frequency and rate of change of frequency to determine load shedding and meeting the requirement of the critical loads

## **MARKETING SURVEY**

- Marketing survey
- Preparation of survey
- Recommendation

## **RENOVATION AND MODERNIZATION**

- Revamping and retrofitting of power plant and auxiliaries
- Life extension studies and residual life analysis
- Up gradation of electrical / instrumentation system
- Modernization of firing systems
- Performance testing of plant before and after modernization

## **CONSULTANCY SERVICES OFFERED FOR POWER PLANT**

Feasibility study, detailed project report, financial analysis sensitivity analysis, pre-bid engineering, preparation of documents for submission to government agencies for preliminary approvals

### **Design and engineering services**

Basic and detailed engineering of industrial boilers, waste heat recovery boilers, and utility boilers

#### **Combustion system.**

Fuel firing system, modifications, introduction of auxiliary / supplementary fuels in existing boilers

#### **Pollution control equipments.**

Mechanical dust collectors, ESPs, Bag filters, etc

Design of pressure vessels. Heat exchangers and storage tanks

#### **Civil engineering.**

Load data and structural design

#### **Piping.**

Layout preparation isometrics, stress analysis, support engineering, valve scheduling control valve selection, orifice selection



## Electrical systems.

EHT, HT, and LT system selection, cable scheduling, relay coordination, relay testing, cable routing, and inspection services

## Instrumentation systems.

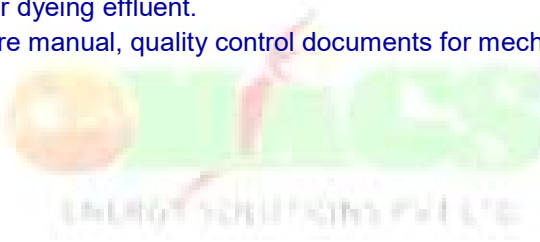
Specification of PLCC/DCS system engineering, control room instruments, logic and interlock systems, TG controls, generator logics, instrumentation for balance of plant equipment

## SERVICES

Study of performance of existing plants, suggestion for improvements and implementation capacity, up gradation of steam generations, etc

## Life extension studies:

- ❖ Power plant system improvement viz pressure parts, fuel firing systems, electrical, instrumentation, rotating machinery, pollution, control systems, etc
- ❖ Project engineering services like preparation of bid documents, bid evaluation, procurement assistance, inspection, expediting, etc.
- ❖ Project management services like deputation of technical experts for trouble shooting, supervision of erection and commissioning, O&M assistance, etc.
- ❖ O&M manual preparation, training for employees and O&M staff.
- ❖ Consulting, erection for water treatment and effluent treatment systems.
- ❖ Nano technology treatment for dyeing effluent.
- ❖ Relocation of project procedure manual, quality control documents for mechanical, electrical, and instrumentation.



## CONTACT US:



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