



Projects and Energy Solutions



# Operations & Maintenance Services

High uptime, reliability, and enhanced equipment life!



# Trusted Partner in **Energy Transition**

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#ThermaxForEnergyTransition



# Conserving Resources, Preserving the Future.

Thermax, a frontrunner in providing sustainable energy and environment solutions and is committed to living up to its brand promise of 'Conserving Resources, Preserving the Future'. Thermax's product portfolio covers air pollution control solutions, heating, cooling, water and waste management, and specialty chemicals. The company also designs, builds, and commissions large boilers for steam and power generation, turnkey power plants, and waste-to-energy systems. Thermax remains focused on continuously strengthening its green portfolio to be a clean air, clean energy, and clean water company.

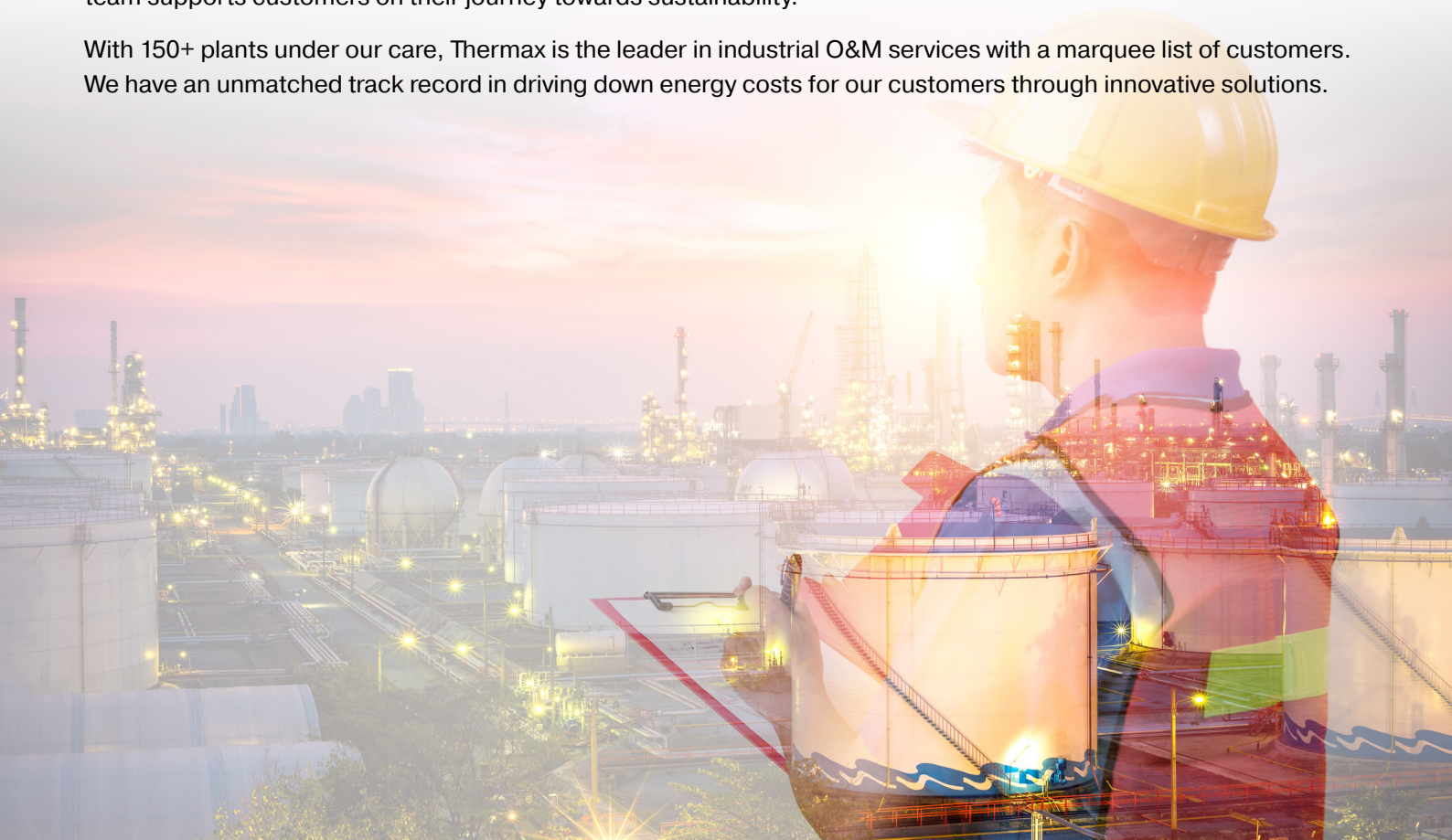
## Operations & Maintenance Services

Thermax offers one-stop solution for the operation and maintenance of utility equipment and plants for various industries. Our expert team ensures utilities like power, steam, compressed air, water, etc. are available 24x7 as per the plant's requirement.

We keep our customer's investments productive by continuously optimising operations with an aim to reduce energy consumption and enhance availability and efficiency of plants while driving down the lifecycle costs through continuous innovation.

Our expertise stems from demonstrated and successful operations and maintenance of plants and equipment across different sizes, configurations, technologies and industries. Our experienced and trained team, ensures efficient and reliable operations even at variable load conditions. With the deployment of proprietary O&M processes and optimisation of plant energy consumption, our expert team supports customers on their journey towards sustainability.

With 150+ plants under our care, Thermax is the leader in industrial O&M services with a marquee list of customers. We have an unmatched track record in driving down energy costs for our customers through innovative solutions.



# O&M OFFERINGS

## Cogeneration and Captive Power Plants

Our expertise stems from a successful operation & maintenance of a wide range of power plants across different sizes and configurations.

- **Comprehensive O&M**
- **O&M Management**
- **Plant Commissioning Services**
- **Smart Maintenance Solutions**
- **Spares**



### Credentials

O&M experience of cumulative 1200+ MW

1500+ O&M professionals

Services to all types of power plants - including PF, TG, AFBC and CFBC

ISO 45001: 2018 certified O&M sites

Efficiently running plants at part load

Expertise in O&M for all equipment makes

# O&M OFFERINGS

## Utility Equipment

Thermax provides O&M services for utilities and process equipment including boilers, heaters, WTP, ETP, compressors, electrical systems and others.

- **Comprehensive Multi-Utility O&M**
- **Unit Delivery Services**
- **Audit Services**



### Credentials

Serving 100+ customers across industries

BEE Certified utility experts to help customers reduce utility costs

24x7 operation of utilities with high performance

Committed to ensuring availability, efficiency, and safety compliance

Serving customers for more than 15 years

Maximum repeat orders

# O&M OFFERINGS



## Maintenance services

We provide a comprehensive range of maintenance services for all power plant equipment ensuring enhanced life and superior performance.

- **Regular & shutdown maintenance**
- **Turn around maintenance**
- **Turbine, boiler & ESP overhaul (All makes)**
- **Coal & ash handling plant**
- **Electricals, control & instrumentation maintenance**



### Credentials

Strong engineering and OEM background

Extensive experience of all makes

In-house subject matter expertise

Deployment of latest tools

100% safety compliance

# O&M OFFERINGS

## Value Added Services

Customised solutions to improve productivity and reliability of existing plants leading to a guaranteed savings.

- **Automation & Instrumentation**
- **Electrical Services**
- **Fuel Flexibility Advisory**
- **Off Design Usage of Plant**
- **Retrofit And Restoration**



### Credentials

- Heat Rate improvement of 3%-5%
- Plant availability >99.8%
- CO<sub>2</sub> reduction 2,000 - 10,000 tCO<sub>2</sub>e/Year
- Manpower Optimisation upto 10%

# Digital Solutions

Thermax EDGE™ Live, a unique digital service, integrates industrial assets across multiple locations and performs real-time data analytics at the click of a button. Powered by Artificial Intelligence (AI), Machine Learning (ML) and With Thermax-engineered algorithms, we boost plant performance, enhance uptime, and provide forward-looking indicators for predicting plant performance.

Our Expertise:

- **Predictive & Deviation analytics**
- **Real-time Dashboards**
- **Fault Diagnostics**
- **Advanced Pattern Recognition**
- **Incident Module**

## O&M OFFERINGS



## Credentials

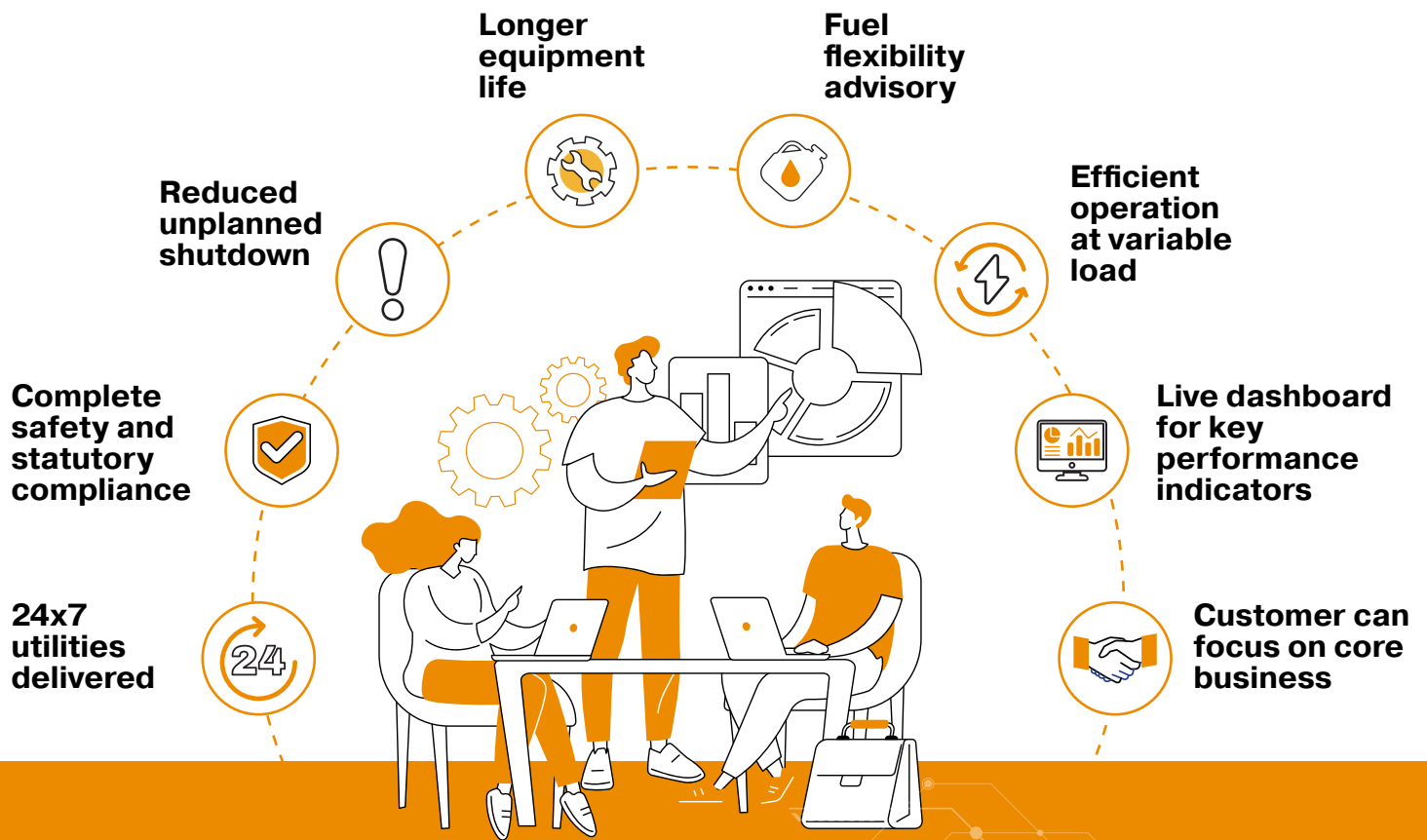
Root cause detection from a diagnostic library with 1,500+ failure modes

50+ digital twins for assets like compressors, pump, etc.

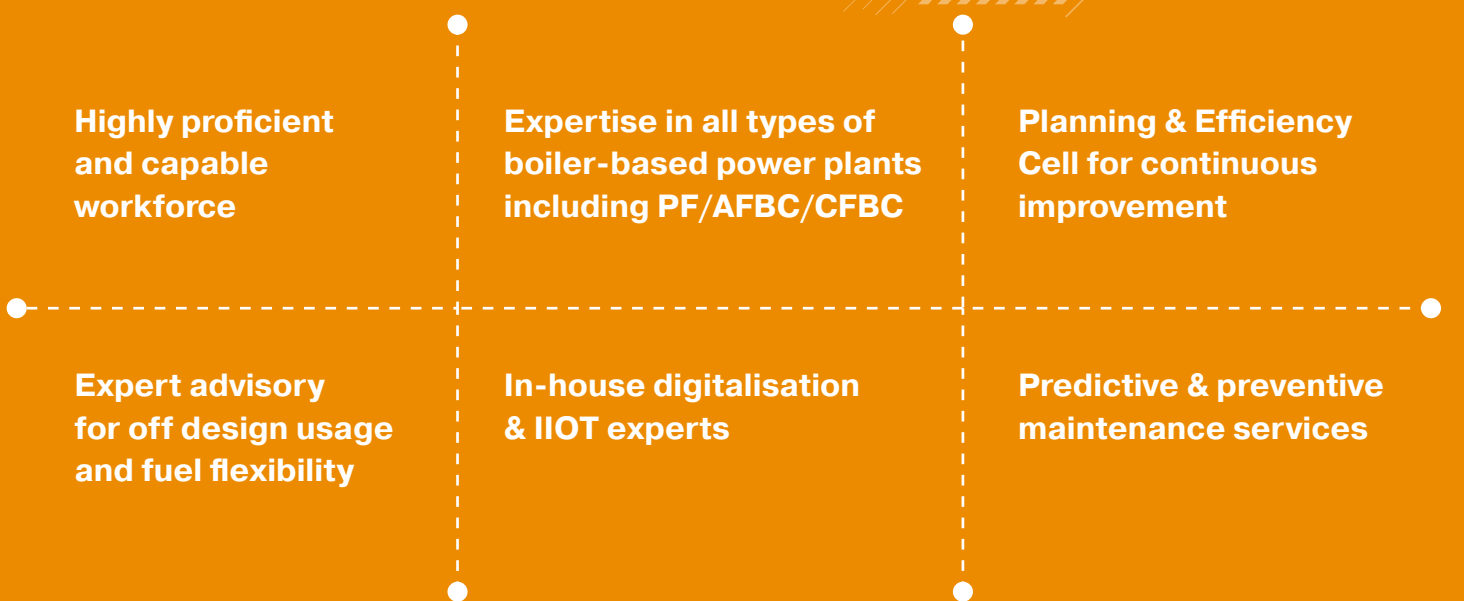
Strong understanding of value drivers

Integrated solutions

# Benefits



# Skills and Capabilities



# Thermax Advantage

## EPCOM Services

- O&M company with an EPC background
- OEM experience of 50+ years
- In-house expertise in boiler, chiller, WTP, chemical and emission control

## Skilled Manpower

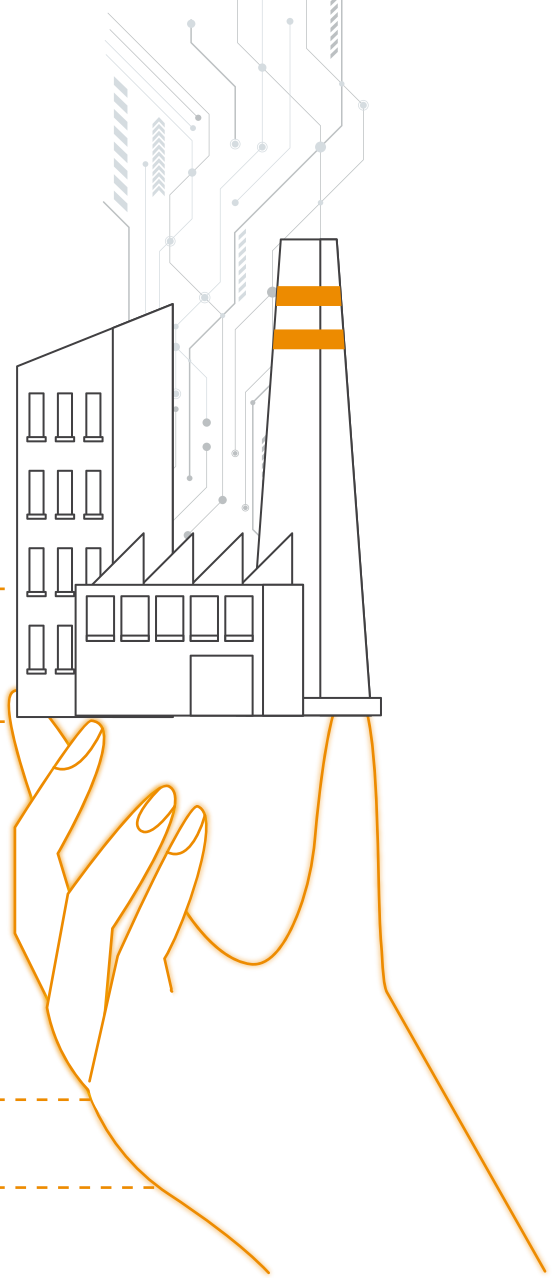
- 3000+ trained professionals

## Diverse Expertise

- Variety of fuels like coal, biomass, gas, waste heat, solar etc.
- Managing plants with equipment of various makes
- Managing varied boiler technologies ( AFBC, CFBC, WHR, PF, TG etc.)

## Remote Performance Monitoring System

**Safety - ISO 45001:2018 certified sites**



# Sector Served

Cement 	Food 	Pharma 	Oil and Gas/ Petrochemicals 	Metal 	Sugar 
Chemicals 	IPP 	Solar 	Breweries & Distilleries 	Paper 	Textile 

and many more ...

# Key Projects

## Cogeneration and Captive Power Plants

### Welspun India

Capacity - 135 MW

Plant Type - CPP

Location - Anjar,  
Gujarat

### Utkal Alumina International Limited

Capacity - 90 MW

Plant Type - Cogen

Location - Rayagada,  
Odisha

### Cairn Energy

Capacity - 60 MW

Plant Type - CPP

Location - Barmer,  
Rajasthan

### JK Lakshmi Cements

Capacity - 54 MW +  
15 MW

Plant Type - CPP +  
WHR

Location - Sirohi,  
Rajasthan

### Dr. Reddy's Laboratories

Capacity - 7.7 MW

Plant Type - Cogen

Location - Srikakulam,  
Andhra Pradesh

### Sesa Goa

Capacity - 30 MW

Plant Type - CPP

Location - Bicholim,  
Goa

### Ankur Biochem Pvt. Ltd.

Capacity - 9.8 MW

Plant Type - Cogen

Location - Dhanbad,  
Jharkhand

### Sudarshan Chemical

Capacity - 8.2 MW

Plant Type - Cogen

Location - Roha,  
Maharashtra



# Key Projects

## Utility Equipment

### Tata Chemicals

Scope - Multi-Utility

Location - Mambattu,  
Andhra Pradesh

### Cipla Pharmaceuticals

Scope - Unit Delivery

Location - Goa

### Kenya Breweries Limited

Scope - Multi-Utility

Location - Kisumu,  
Kenya

### Vipingo Industries Limited

Scope - Multi-Utility

Location - Mombasa,  
Kenya

### ITC Limited

Scope - Multi-Utility

Location - Solan,  
Himachal Pradesh

### Suzuki Motor

Scope - Multi-Utility

Location - Hansalpur,  
Gujarat

### Tata Chemicals Limited

Scope - Multi-Utility

Location - Nellore,  
Andhra Pradesh

### Aether Breweries LLP

Scope - Multi-Utility

Location - Namsai,  
Arunachal Pradesh



# Key Projects

## Maintenance Services

### Hindalco Industries

Asset - CFBC Boilers  
Capacity -  
155 TPH x 13 (435 MW)  
Scope of work -  
Boiler/ESP/ASP OH

### Aditya Alumina Ltd.

Asset - PF Fired Boiler  
Capacity - 600 TPH  
(6 x 150 MW)  
Scope of work -  
Boiler/ESP/AHP OH

### Torrent Power Ltd.

Asset - PF Fired Boiler  
Capacity - 410 TPH  
(3 x 120 MW)  
Scope of work -  
Gates & Damper  
Replacements

### Dangote Cements

Asset -  
Turbine Make -  
Siemens  
Capacity - 30 MW  
Scope of work -  
OH of Turbine  
Generator

### Ramco Cements Ltd.

Asset -  
Turbine Make -  
Siemens  
Capacity - 30 MW  
Scope of work -  
Turbine/Generator/  
Gear box OH

### Sesa Goa

Asset -  
Boiler Make -  
Thermax  
Capacity - 90 TPH  
Scope of work -  
Supply & Erection  
of Eco Coils

### Dr. Reddy's Laboratories Ltd.

Asset - Turbine Make -  
Triveni  
Capacity - 8 MW  
Scope of work -  
Major OH of Turbine  
Generator

### Utkal Alumina Ltd., Odisha

Asset - PF Fired  
Boiler  
Capacity - 110 TPH  
Scope of work -  
Complete O&M



# Case Studies

## Value Added Services

### Utility & APC Optimisation

#### 1x21 MW CPP + 1x13 MW WHR

- Auxiliary power consumption reduced by 1% for CPP and 2.2% for WHR unit
- Cumulative reduction in emission ~ 2,500 tCO<sub>2</sub>/year

### Plant Heat Rate Improvement

#### 2x18MW+6 MW Captive Power Plant

- Station heat rate improve by 56kCal/kwh
- Annual coal saving - 3445MT ~ INR 1.5 Crores
- Reduction in emission ~ 6,888 tCO<sub>2</sub>/year

### Expert Electrical Solutions Power System

#### Study for 30 MW CPP

- Reliability improvement
- Reduction of nuisance tripping
- Equipment safety

### Automation

#### 1x40MW + 20MW + 6 MW CPP

- Integrated master control
- Steam loss saving 300TPM
- Plant availability improved
- Annual cost saving -INR 0.9 Crore

### Retrofit & Upgradation

#### 2x18 MW Captive Power Plant

- Boiler capacity enhanced by 25%
- Improved operational flexibility & efficiency

## Thermax Edge™ Live

### 6.4 MW CPP for Chemical Plant

**Edge Live Solution:** Real time analysis of 500+ tags for boiler and steam turbine through DCS

**Intervention:** Early prediction of turbine thrust bearing temperature increase using advanced pattern recognition model

**Customer Benefit:** Prevention of turbine tripping and further mechanical damage by early detection, saving Rs 20 Lakh / tripping

### 3x18 MW CPP for Cement Plant

**Edge Live Solution:** Real time analysis of 800+ tags for boiler and steam turbine through DCS

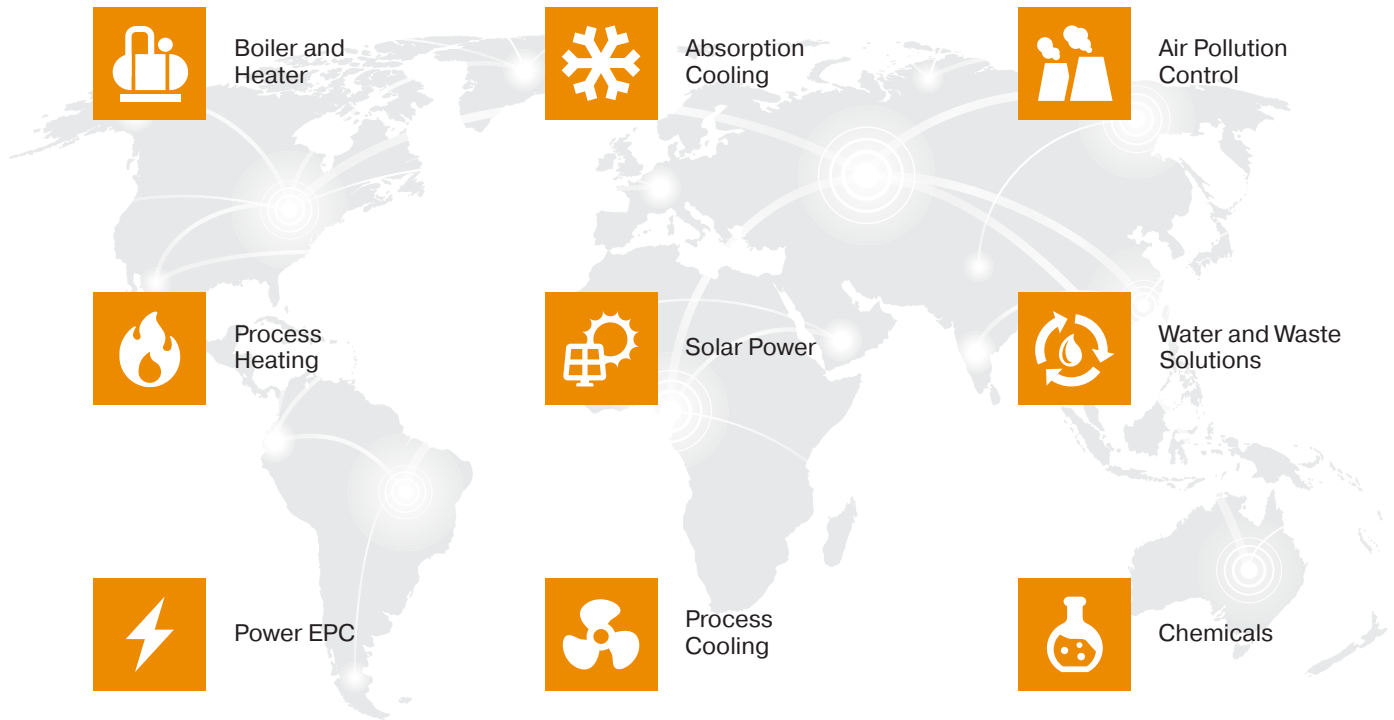
**Intervention:** Observed lower DCA and  $\Delta T$  at HP heater Indicating higher heater level due to closing of drip valve to deaerator.

**Customer Benefit:** Optimisation of heater performance and reduced heat rate, saving 60 tonnes of CO<sub>2</sub>/annum



**Clean Air | Clean Energy | Clean Water**

Conserving Resources,  
Preserving the Future.



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