

## Combined Cycle Power Plants



Engineering  
a better tomorrow



**TCE Consulting Engineers Limited**

## Combined Cycle Power Plants - Concept thru' Commissioning

TCE has rich experience in the engineering of gas turbine based power plants of capacities ranging from 3 MW to 655 MW, with multi-fuel options like gas, naphtha, light diesel oil and high speed diesel. More recently with gas turbine based projects being implemented on an EPC basis, TCE has assisted several independent power producers by providing Owner's Engineer services. TCE has gained considerable knowledge and experience in working with gas turbines of different sizes and makes such as General Electric, Siemens, and ABB.

TCE has also prepared feasibility and detailed project reports for combined cycle power projects for several clients. These reports involve selection of most optimum technology for power generation, site selection study, identification and selection of various plant, equipment and systems for the power plant, optimisation of number of equipment, preparation of detailed cost estimates, evaluation of generation cost and detailed financial analysis.

TCE's experience in executing Combined Cycle Power Plants encompasses multi-facet functions at different stages of projects, which include :

### ■ Project Development Phase

- Site selection study
- Techno-economic feasibility studies
- Financial analysis
- Power system studies
- Site surveys
- Site specific studies
- Environmental impact assessment



Client : Kondapalli Power Corporation Limited

Capacity : 355 MW

Year of commissioning : 2000

TCE's scope : Lender's Engineer services

Turbine : GE frame 9E gas turbine - 2 nos.

Fuel : Naphtha



Client : Tanir Bavi Power Company Private Limited,  
Mangalore

Capacity : 220 MW

Year of commissioning : 2001

TCE's scope : Project Management services ( part )

Turbine : Barge mounted GE LM 6000 turbine - 4 nos.

Fuel : Natural gas / Naphtha

Client : GVK Industries Limited, Jegurupadu

Capacity : 235 MW

Year of commissioning : 1997

TCE's scope : Owner's Engineer services

Turbine : ABB GT 8C turbine - 3 nos.

Fuel : Natural gas / Naphtha



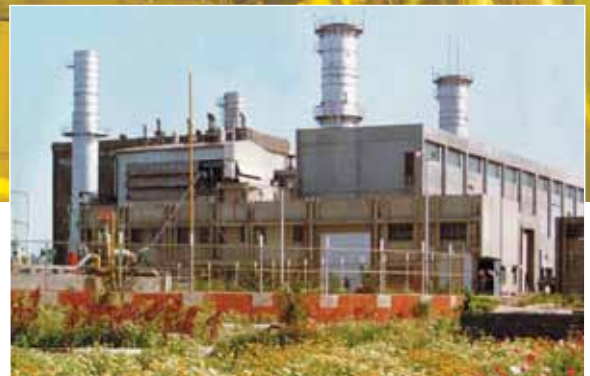


▲ Siemens V94 gas turbine 205 MW CCPP, Trombay

## ■ As Owner's Engineer

- for projects implemented on EPC basis

- Preparation of bid specifications, bid review and analysis and purchase recommendation leading to selection of the EPC Contractor.
- Project management services on behalf of Owner including contract management, quality assurance, inspection, expediting and site supervision.
- Assistance to Owner in the engineering of facilities/works not covered in the EPC package such as raw water supply package, fuel supply system up to power plant battery limits, site improvement works, etc.
- Review of the designs/drawings prepared and submitted by the EPC Contractor for various civil, mechanical, electrical and control & instrumentation works.



Client : The Ahmedabad Electricity Company Limited, Vatwa

Capacity : 116 MW

Year of commissioning : 1991

TCE's scope : Architect - Engineer services

Turbine : GE frame 6 gas turbine - 2 nos.

Fuel : Naptha / Natural gas



Client : Gujarat Powergen Energy Corporation Limited, Gandhar

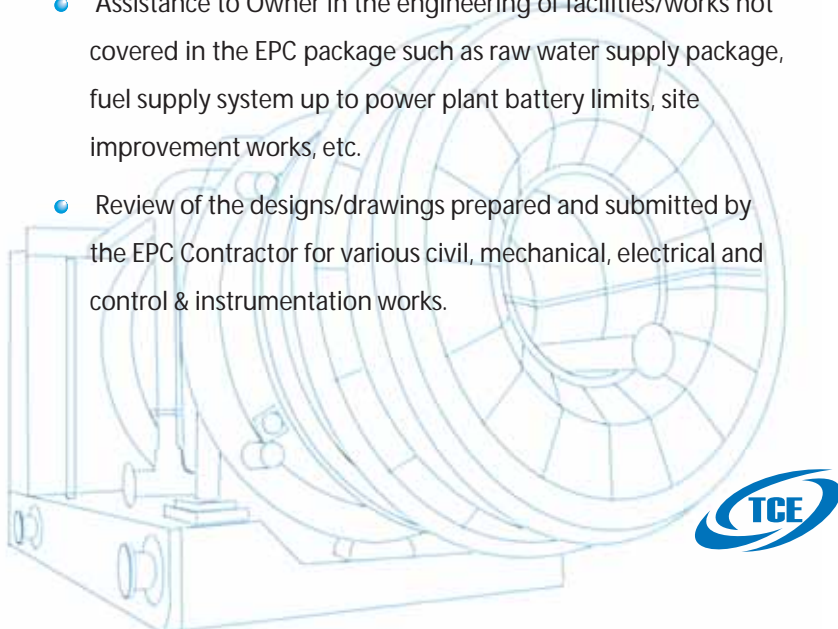
Capacity : 655 MW

Year of commissioning : 1998

TCE's scope : Architect - Engineer services

Turbine : Siemens V 94-2 gas turbine - 3 nos.

Fuel : Naptha / Natural gas





Client : Essar Power Limited, Hazira

Capacity : 515 MW

Year of commissioning : 1997

TCE's scope : Architect - Engineer services

Turbine : GE frame 9E gas turbine - 3 nos.

Fuel : Naphtha / Natural gas and High speed diesel

## ■ As Architect - Engineer

- for projects implemented on non-EPC basis

- Concepts and basic engineering
- Procurement assistance covering preparation of tender specifications with bid purpose drawings, review and analysis of bids, participation in bid clarification / bid adjudication meetings and purchase recommendations for the selection of vendor(s)/contractor(s)
- Detailed design and engineering
- Review and approval of drawings and documents submitted by the vendor/contractor
- Inspection/expediting services
- Site services covering supervision of construction, erection, start-up and commissioning
- Project management services

## Other Services

- Lender's Independent Engineer
- Technical due diligence studies
- Pre-bid engineering services for EPC Contractors
- Detailed engineering services for EPC Contractors
- Development of standard reference plant documents for power plants

Client : Tata Power Company Limited, Mumbai

Capacity : 205 MW

Year of commissioning : 1994

TCE's scope : Architect - Engineer services

Salient features : • Blackstart capability • Axial condenser • Sea water for condenser cooling

Turbine : Siemens V94 gas turbine

Fuel : Naphtha, NGL and HSD



## Engineering a better tomorrow

TCE Consulting Engineers Limited (TCE), a wholly owned subsidiary of Tata Sons Limited, is a leading engineering consultant with over 3000 prestigious projects to its credit covering diverse realms of industry. With four decades of rich experience, TCE provides competent and comprehensive engineering consultancy solutions with global perspective. TCE's **ISO 9001** certified multi-disciplinary services have earned enormous goodwill from clients in India and overseas.

## Accumulated Experience - Added Advantage

TCE's vast experience in engineering power projects is well reflected in its association with over 30,000 MW of generating capacity in India and abroad. This embraces all the conventional modes of power generation including coal and oil fired thermal plants, gas turbine based open and combined cycle plants, co-generation facilities, diesel generator plants, hydel stations and nuclear power plants. Decades of experience in the design and development of power plants has enabled TCE to pioneer many features and to improve efficiency, availability and reliability of units.



**Client** : Gujarat Industries Power Company Limited, Vadodara

**Capacity** : 135 MW

**Year of commissioning** : 1992

**TCE's scope** : Architect - Engineer services

**Turbine** : GE frame 6 gas turbine - 3 nos.

**Fuel** : Natural gas

**Client** : Andhra Pradesh Gas Power Corporation Limited, Vijjeswaram

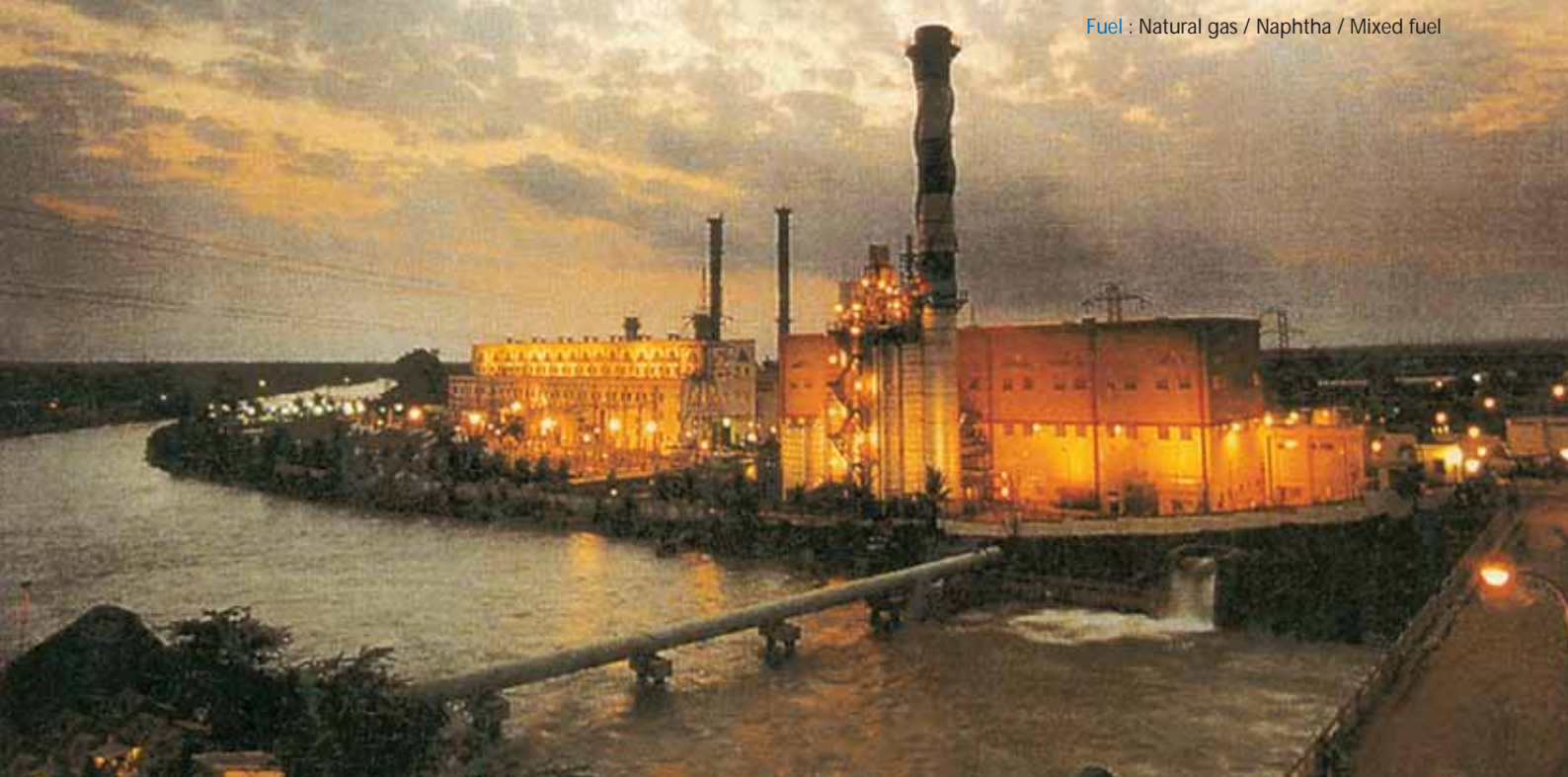
**Capacity** : 172 MW

**Year of commissioning** : 1997

**TCE's scope** : Owner's Engineer services

**Turbine** : GE Frame 9E PG9171E turbine - 2 nos.

**Fuel** : Natural gas / Naphtha / Mixed fuel





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