TURBINE INLET AIR COOLING (TIAC)

Incremental Power Generation

> for Simple Cycle Gas turbines

Or

> for Combined Cycle Power plants

Executive Summary

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- **At peak Demand in summer, combustion turbine output is reduced by up to 25%, removing vital capacity when it is most needed**

- **We Propose to construct and manage a Turbine Inlet Cooling Project (TIAC) for Power plant. The chillers would utilise waste exhaust gas/a steam from the turbines to cool the inlet air and so enable the turbines to operate at ISO capacity even during hot summer days and nights, 24/7.**

Benefits of the Project:

- **Substantial Combined Cycle Output Increase up to 23% at 46^{o}C**
- **Turbine Life Extension through low inlet air temperature**
- **Lower O&M and less spare parts.**
- **Power Plant Capacity Enhancement and Base Load Improvement.**
- **CAPEX Savings up to 67%, O&M Savings up to 86% versus the purchase of a new Turbine.**

Proposal

QUEST Deliverables:

- TIAC System Equipment Provision.
- Installation & Commissioning.
- Operation & Maintenance of the TIAC System.
- Performance Guarantee.
- Provision of Incremental power (up to 25%)

End User (Power Plant Facility Owner)Deliverables:

- EPC Contract
- Space required for the TIAC System.
- Branch steam / or NG and condenser water lines connections for the TIAC System.

Indicative Deal Terms to End User

- EPC Contract
- Provision of Inlet Air Temperature at 15°C .
- O & M managed QUEST
- Incremental power Generation (ISO Output) delivered 24 hours /day, year round operation

Projects Pictures

Gas Turbine Capacity Enhancement through TIAC

Turbine capacity Enhancement up to 25%

Gas Turbine

Cooling

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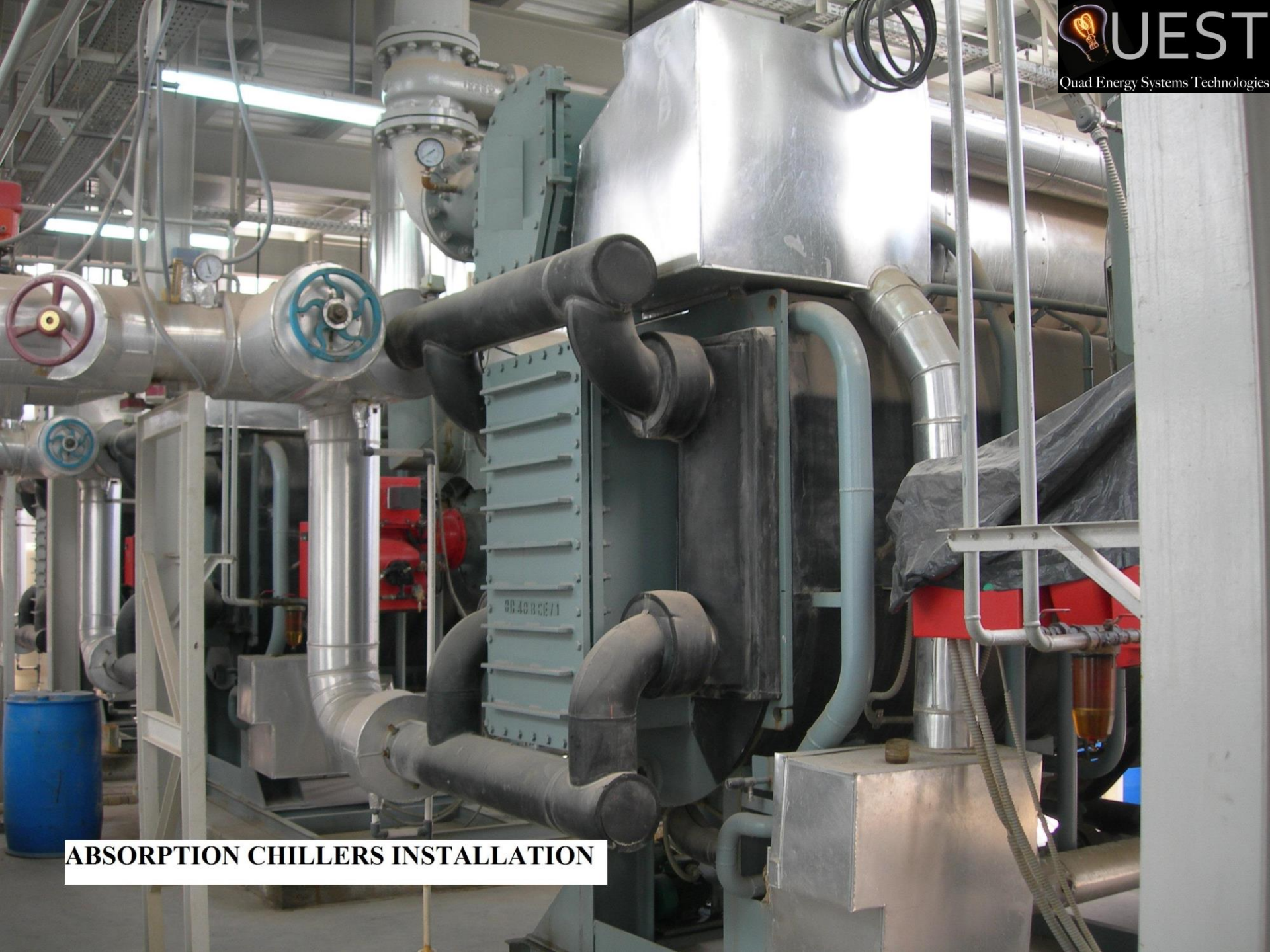
Exhaust gas driven Absorption Chiller –TIAC System

Exhaust gas driven Abs. Chiller -TIAC System

Exhaust gas driven Abs. Chiller - TIAC System



ABSORPTION CHILLERS INSTALLATION