Global Horizon
TRAINING CENTER

Training Course:
Combined Cycle Power Plant Efficiency (Heat Rate Calculation)

5 - 9 October 2025
In-House

Training Course:
Combined Cycle Power Plant Efficiency (Heat Rate Calculation)

Training Course code: EN236096 From: 5 - 9 October 2025 Venue: In-House - Training Course Fees: 35000 Euro

Introduction:

Combined Cycle Power Plants CCPPs are renowned for their high efficiency and low emissions. One of the key performance indicators in such plants is the heat rate, which directly reflects how efficiently fuel is converted into electrical energy. This 5-day training program is designed by Global Horizon Training and Consulting Center to equip energy professionals with a comprehensive understanding of heat rate fundamentals, efficiency optimization techniques, and diagnostic tools to improve plant performance.

Objectives:

By the end of the course, participants will be able to:

- Define and interpret the concept of heat rate in power generation.
- Calculate heat rate using various approaches and understand influencing factors.
- Identify efficiency losses in both gas and steam cycles of a CCPP.
- Apply performance monitoring tools and conduct root cause analysis.
- Recommend corrective actions and upgrades to improve overall plant efficiency.

Course Methodology:

- Interactive lectures with detailed technical content
- Real-life plant case studies and calculation exercises
- Use of performance analysis software and Excel tools
- Group activities and troubleshooting workshops
- Expert-led discussions on advanced CCPP technologies

Organizational Impact:

- Enhanced plant output with reduced fuel consumption
- Informed decision-making on system upgrades and optimization
- Development of internal expertise for continuous improvement

- Stronger alignment with environmental and operational goals

Target Audience:

- Power Plant Engineers and Technicians
- Efficiency and Performance Engineers
- Operations Managers and Supervisors
- Maintenance Engineers and Reliability Specialists
- Energy Analysts and Engineering Consultants

Outlines:

Day 1:

Fundamentals of Combined Cycle Power Plants

- Components and configuration of CCPPs
- Thermodynamic principles of gas and steam cycles
- Efficiency concepts and energy balance
- Overview of global benchmarks and plant KPIs

Day 2:

Understanding Heat Rate

- Definition and units of heat rate
- Gross vs. net heat rate
- Conversion between efficiency and heat rate
- Practical examples of heat rate calculations

Day 3:

Factors Affecting Heat Rate

- Design vs. actual performance
- Ambient temperature and loading impact

- Degradation, fouling, and aging of components
- Effects of auxiliary systems and parasitic loads

Day 4:

Heat Rate Measurement and Monitoring

- Instrumentation and data acquisition systems
- Performance testing standards ASME PTC
- Heat balance diagrams and online monitoring tools
- Troubleshooting deviations and identifying inefficiencies

Day 5:

Optimization Strategies and Case Studies

- Best practices for improving heat rate
- Upgrades: HRSG improvements, steam cycle tuning, inlet cooling
- Predictive analytics and digital twins
- Review of real-world CCPP performance improvement cases

Registration form on the Training Course: Combined Cycle Power Plant Efficiency (Heat Rate Calculation)

Training Course code: EN236096 From: 5 - 9 October 2025 Venue: In-House - Training Course Fees: 35000 Euro

Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Company Information

Company Name: .....
Address: .....
City / Country: .....

Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
- ☐ Please invoice me
- ☐ Please invoice my company

Easy Ways To Register

Telephone: +201095004484 to provisionally reserve your place.	Fax your completed registration form to: +20233379764	E-mail to us : info@gh4t.com or training@gh4t.com	Complete & return the booking form with cheque to:Global Horizon 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt.