MERCURY

Energy Efficiency and Sustainability in Chemical and Power Plants

12 – 16 September 2027
Istanbul (Turkey)



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Energy Efficiency and Sustainability in Chemical and Power Plants

Ref: 15949_999697 **Date:** 12 – 16 September 2027 **Location:** Istanbul (Turkey) **Fees:** 5500 Euro

Introduction:

The Energy Efficiency and Sustainability in Chemical and Power Plants training course, offered by Mercury Training Center, provides participants with essential skills and insights for optimizing energy systems within the industry. It focuses on electrical, mechanical, and thermal energy systems and adopts a systems-based approach to highlight the value of holistic analysis over isolated equipment optimization. It ensures participants can effectively prioritize and maximize opportunities for impactful improvements.

Projects to enhance energy efficiency present lucrative yet underexplored investment prospects. These initiatives deliver substantial energy savings with minimal capital input, which is exceedingly appealing from both technical and economic viewpoints. The Energy Efficiency and Sustainability in Chemical and Power Plants course equips participants with the necessary knowledge to recognize and implement effective energy efficiency solutions, addressing both technical and organizational perspectives.

Through this Energy Efficiency and Sustainability in Chemical and Power Plants training, attendees will delve into mechanisms supporting industrial energy efficiency in various settings. Key attributes of energy efficiency measures, such as savings potential, cost-effectiveness, and alignment with energy management systems and audits, are emphasized to drive sustainable practices within chemical power plants.

Participants in this Energy Efficiency and Sustainability in Chemical and Power Plants course will understand what is energy efficiency?. They will learn about energy efficiency, which involves using less energy to perform the same task and reducing energy waste while maintaining output quality. Understanding its importance leads to reduced operational costs and environmental impacts, which are essential in industries like chemical and power plants.

Targeted Groups:

This Energy Efficiency and Sustainability in Chemical and Power Plants course is designed for:

- Energy Engineers are involved in enhancing energy efficiency.
- Energy Auditors and Assessors focusing on effective evaluation.
- Equipment Vendors offering energy-efficient solutions.
- Energy Managers aiming to implement sustainable improvements.
- Energy Project Managers overseeing project initiatives.
- Equipment Maintenance Professionals dedicated to optimizing operations.
- Energy Academia and Researchers exploring advancements in the field.

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Course Objectives:

At the end of this Energy Efficiency and Sustainability in Chemical and Power Plants course, participants will be able to:

- Understand the principles of energy efficiency, key concepts, technologies, and strategies for optimizing energy use in chemical and power plants.
- Conduct energy audits, collect data, and analyze to identify energy-saving opportunities.
- Explore cutting-edge technologies for enhancing energy efficiency, including renewable energy integration and waste heat recovery.
- Learn sustainability practices through life cycle assessment, waste reduction, and resource management.
- Develop actionable plans for project implementation, including financing options and stakeholder engagement.
- Equip participants with practical tools for immediate application.
- Gain expertise in conducting energy audits and identifying energy savings opportunities.
- Evaluate innovative technologies and systems for improving energy efficiency and integrating renewable energy.
- Learn best practices in resource management, waste reduction, and life cycle assessment for sustainability.
- Formulate strategies for implementing energy efficiency initiatives, including financing and stakeholder engagement.

Targeted Competencies:

By the end of this Energy Efficiency and Sustainability in Chemical and Power Plants training, participants competencies will:

- Reduction of operational costs and productivity improvement through chemical energy efficiency.
- Minimize environmental impacts, aligning with regulatory standards.
- Attain significant cost savings impacting the financial bottom line.
- Develop a deep understanding of sustainability issues, instilling a sense of responsibility.
- Differentiate in the market by attracting investors and environmentally-conscious customers.
- Enhance technical skills for professional development.
- Boost employability and prospects for promotion.
- Master implementation skills to meet organizational goals.
- Contribute to sustainable outcomes at local and global levels.
- Improve overall quality of life and enhance job satisfaction by integrating energy efficiency sustainability practices.

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Training Methodology: Energy Efficiency and Sustainability in Chemical and Power Plants:

This Energy Efficiency and Sustainability in Chemical and Power Plants training course by Mercury Training Center will utilize a range of proven learning techniques to ensure participants understand, comprehend, and retain the material. It will adopt a participative approach, emphasizing the development of practical skills that delegates can immediately apply to real-world business scenarios upon returning to their organizations.

This Energy Efficiency and Sustainability in Chemical and Power Plants course will engage participants in hands-on activities and participatory learning, equipping them with the skills necessary to apply their knowledge effectively in real-world scenarios. By understanding sustainability in the chemical industry and employing energy management practices, participants will contribute to a sustainable future.

Course Content:

Unit 1: Introduction to Energy Efficiency and Sustainability:

- Overview of energy efficiency EE principles and sustainability concepts.
- Key drivers for energy efficiency in chemical and power plants.
- Understanding energy systems: electrical, mechanical, and thermal.
- Regulatory frameworks and environmental compliance.
- Benefits of improving energy efficiency and sustainability.
- Role of energy management systems EMS in operational efficiency.
- Energy benchmarking and performance indicators.

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Unit 2: Energy Audits and Data Analysis:

- Fundamentals of energy audits and assessments.
- Identifying key areas for energy savings in chemical and power plants.
- Data collection techniques and tools for energy audits.
- Analysis methods: energy performance, trends, and inefficiencies.
- Energy consumption patterns and identifying waste.
- Prioritizing energy-saving opportunities based on audit results.
- Implementing corrective actions and monitoring their effectiveness.

Unit 3: Technologies for Energy Efficiency and Renewable Integration:

- Overview of technologies that enhance energy efficiency.
- Advanced control systems for optimizing energy use.
- Waste heat recovery and cogeneration technologies.
- Energy-efficient equipment and process modifications.
- Integration of renewable energy sources in chemical and power plants.
- Solar, wind, and bioenergy as viable energy solutions.
- Smart grids and energy storage systems for improved efficiency.

Unit 4: Sustainability Practices in Chemical and Power Plants:

- Introduction to sustainability in industrial settings.
- Life cycle assessment LCA for energy and resource management.
- Waste reduction strategies and waste-to-energy opportunities.
- Resource optimization: water, raw materials, and energy.
- Sustainable plant design and operations.
- Circular economy principles and their application in energy systems.
- Environmental footprint reduction strategies.

Unit 5: Project Implementation and Financing:

- Developing actionable plans for energy efficiency projects.
- Setting realistic goals and timelines for energy-saving initiatives.
- Financing options: grants, subsidies, and internal funding.
- Cost-benefit analysis and financial feasibility of energy projects.
- Engaging stakeholders and gaining organizational buy-in.
- Risk assessment and management for energy projects.
- Monitoring, reporting, and sustaining energy-saving results.