MERCURY

Process Plant Optimization & Energy Conservation Conference

20 – 24 December 2026
Cairo (Egypt)



Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
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Ref: 8063_276509 **Date:** 20 – 24 December 2026 **Location:** Cairo (Egypt) **Fees:** 3500 Euro

Introduction to Energy Conservation in Process Plants

Maintaining the integrity and reliability of a plant is a foundational aspect of process plant optimization. In sustainable plant profitability and Optimization, minimizing production disruptions is critical. This process plant optimization and energy conservation conference involves managing degradation processes affecting equipment and systems and implementing practical inspection and maintenance strategies, plans, and methods. The challenges of optimizing a plant operation are manifold. Yet, the rewards include surprisingly improved profitability without the substantial investments in new plant construction.

Industrial processes such as steam generation, cooling, heating, and electromechanical operations are prime targets for energy consumption and offer significant savings opportunities. Process modifications, advanced controls, novel catalysts, and embracing new technologies also serve as conduits for plant optimization. This energy conservation course aims to deliver extensive insights into the myriad aspects of process plant integrity as the basis for continued plant profitability and Optimization.

Understanding Process Plant Optimization and Energy Conservation

This process plant optimization and energy conservation conference is an event dedicated to exploring innovative strategies and best practices for enhancing the efficiency and sustainability of process plants. This process plant optimization and energy conservation conference is a platform for industry experts, researchers, engineers, and practitioners to exchange knowledge, share insights, and discuss emerging trends in optimizing process plant operations and conserving energy resources.

Topics covered in this energy conservation course may include advanced technologies, process improvements, data analytics, renewable energy integration, and regulatory compliance. Through keynote presentations, technical sessions, panel discussions, and networking opportunities, attendees gain valuable insights into optimizing plant performance, reducing operational costs, minimizing environmental impact, and achieving energy efficiency goals.

This process plant optimization and energy conservation conference is crucial in fostering collaboration and driving continuous improvement within the process industry towards a more sustainable future.

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Targeted Groups

- Process Plant Supervisors.
- Plant Engineers and Operators.
- Production and Operation Engineers.
- Maintenance Engineers and Technicians.
- Engineering and Technical Personnel are involved in improving process plant, petrochemical plant, and refinery profitability and energy efficiency.

Conference Objectives

Participants in this process plant optimization and energy conservation conference will:

- Grasp the concept of plant optimization and energy conservation, their drivers, potential benefits, and how to actualize them.
- Sharpen their business acumen to better contribute to sustainable plant profitability.
- Identify lucrative opportunities for energy savings.
- Acquire managerial tools to optimize plant operations effectively.
- Learn practical methods and tools for the technical and economic evaluations of alternatives.
- Understand the comprehensive elements of plant optimization.
- Maximize plant availability, reliability, and productivity.
- Minimize operational expenses.

Targeted Competencies

Target competencies in this process plant optimization and energy conservation conference will:

- Process Overall Plant Effectiveness OPE.
- Operation and Maintenance Best Practices.
- Business Sustainability and Related Factors.
- Energy Conservation Opportunities.
- Strategies for Improving Plant Profitability.

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Course Content

Unit 1: Process Plant Operation, Integrity, and Reliability

- Overview of Process Plant Optimization and Energy Conservation.
- Asset Integrity Management AIM and its Role in Optimization.
- Maintaining Plant Integrity and Reliability for Energy Management.
- The Impact of Operation and Maintenance on Plant Integrity.
- Equipment Condition Monitoring and Assessment.
- Establish Operating Windows for optimal throughput and integrity.
- Effective Management of Change MOC Program.
- The Economics of Process Plants.

Unit 2: Process Plant Optimization

- Process Control Basics.
- Elements of Process Plant Optimization.
- Components Required To Optimize An Industrial Process.
- Learn about the process or a mathematical model of the process and process variables that can be manipulated and controlled.
- Application Of Simulation Technology To Plant Optimization And Control - Plant Optimization Models.
- The Basics Of Heat Integration.
- Pinch technology.
- Heat exchanger train optimization.
- Optimization procedure.
- Application Of Simulation Technology To Plant Optimization And Control - Plant Optimization Models.

Unit 3: Industrial Energy Management - Energy Efficiency for Business and Environment

- Energy Use and Optimization in Process Industries.
- Industrial Energy Management Techniques.
- Industrial Energy Management and System Standards.
- Industry Program for Energy Conservation.
- Best Practices in Process Plant Energy Management.
- Developing Customized Energy Management Program.
- Know Obstacles that Face Energy Management Program.
- Examples of energy management programs and standards are CIPEC and UNIDO.
- Understand incentives for energy assessment and energy retrofit projects.

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Unit 4: Energy Conservation Opportunities

- Implementing an Energy Management Program.
- Benchmarking Energy Intensity and Usage.
- Learn about technology options - New energy-efficient technologies. Examples include a corrosion analyzer for advanced materials and fabricated components and a Fiber optic sensor for combustion measurement and control.
- Energy Conservation Checklist.
- Plant processes.
- Mechanical Systems.
- Electric Power.
- Technical and Economic Evaluation of Potential Opportunities.

Unit 5: The Implications of Plant Optimization Activities

- Relating Energy Efficiency To Business Outcomes.
- Impact of optimization activities and technological modifications to the plant.
- Plant integrity and safety.
- Technology licenses.
- Financing agreements.
- Impact on Human Resources - The human factor.