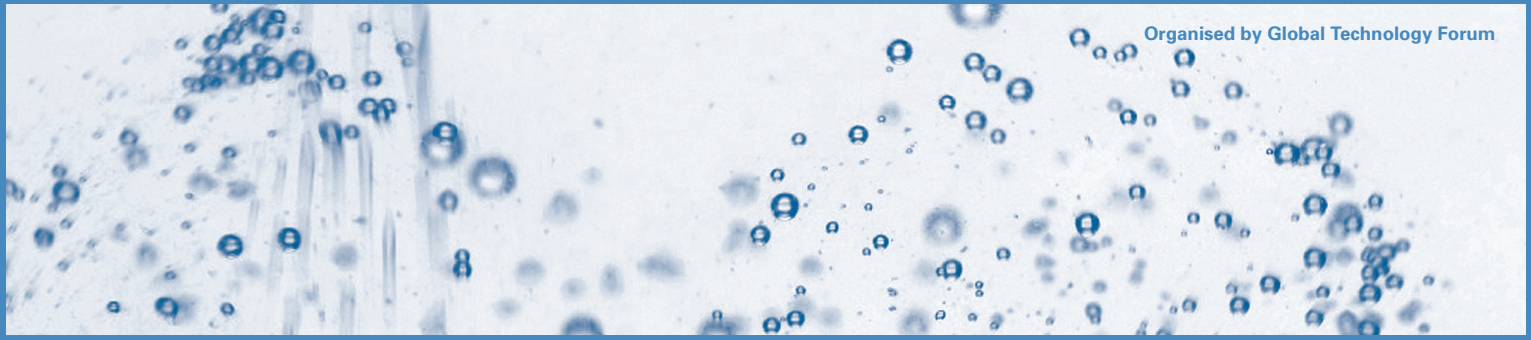

Organised by Global Technology Forum

Energy efficiency

9 – 11 November 2011

London
gtforum.com/energy

ERTC Training

Key topics:

How much energy do plants use?
Operating efficiency practical issues
Power, steam and fuel system optimization
Emissions constraints management
Energy management
Energy cost reduction

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Introduction

The ERTC Energy efficiency course is a comprehensive core skills course for professionals dealing with all aspects of energy usages.

The course will be highly valuable to all engineers involved in the energy management of Refining and Petrochemical plants, in particular to those involved with energy systems operation.

Additionally, the course will be useful to any technical personnel wishing to gain a perspective of how energy efficiency fits into the operation of a complete petrochemical/refining plant. Those who are experienced in other fields and seek a review of the fundamentals of energy efficiency will also find this course most beneficial.

Who should attend?

ERTC Energy efficiency training course has been developed for those who are concerned with improving petrochemical plant and refinery energy cost reduction.

It is ideal for planning personnel, process engineers, energy coordinators and those involved in refining coordination. Personnel from LP modelling companies, service and consulting companies, engineering firms and government agencies will also find this programme very informative and useful.

Learning objectives

Upon completion of this course, participants will have gained a solid understanding of the key elements associated with the operation of energy systems in Petrochemical and Refining units.

In addition course participants will be able to discuss about recent and new trends and initiatives related to energy cost reduction and energy efficiency improvements, to analyse techniques and technologies for monitoring and improve energy efficiency, to identify the operational trade-offs and the marginal mechanisms of an energy system, and to explain the benefits of coordinating plant areas to reduce energy costs and improve energy efficiency on site-wide basis.

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Course description

While energy efficiency has always been important in refining, recent trends are giving refiners even greater incentives to reduce energy usage. In addition to the obvious benefits of lower costs and less reliance on uncertain power supplies, a reduction in energy consumption will facilitate compliance with environments regulation in a variety of emissions, including particulates, SOx, NOx, CO and CO2.

This programme will cover the state-of-the-art technical and economic concepts that will allow participants to identify areas for improvement and implement energy-saving projects. All main aspects of energy analysis are covered in a combination of oral presentations, class discussions and computer demonstration work.

The methodology combines the technical and economic facets of energy issues, focusing on profitability in addition to technical aspects such as mass and energy balance, and thermodynamics. Programme notes will be supplied.

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Course programme

Wednesday 9 November

Energy and refining margin: How much energy do plants use?
The structure of energy consumption / The profitability equation

Energy costing
Definition of marginal mechanisms / Calculating marginal values for fuel, power and steam

Industrial power generation
Description of the main power cycles / Backpressure / Condensing / Gas turbine / Co-generation / Calculation of cycle efficiencies

Backpressure power
Maximising power generation in the most efficient cycle / Minimising power cost

Thursday 10 November

Operating efficiency practical issues
Boiler efficiency's especially at low flows / Gas turbine: heat recovery steam generator efficiencies / Duct firing at 100% incremental efficiency / Turn down effects on gas turbine's heat rate / Price heat rate for break even operation of steam and power generation equipment

Steam and power system optimisation
Real life steam system configuration / Examples / Optimising procedures and benefits

Fuel system optimisation
Fired boilers / Fired heaters / Process furnaces / Flaring

Emissions constraints management
SO2 emissions / NOx emissions / CO2 trading

Friday 11 November

Energy system auditing, accounting and monitoring
Data validation / Imbalances, bad meters, wasted steam and condensates losses / Equipment efficiency / Steam losses / Condensate losses

Closed loop system optimisation
New trends / Model validation / Optimisation / Set point implementation

Energy management
Best practices in energy monitoring and reporting / Implementing an effective site energy programme / Management of change

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Training course fee (per delegate)

For bookings received before 23 September 2011 Course Fee = **£1999 +20% VAT**
A late booking supplement of £300 +20% VAT will be applied to all bookings received after 23 September 2011

Reservation form

Please make a reservation for the following delegate:

Title First name

Surname

Position

Company

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E-mail

Payment details

I wish to pay by:

◯ **Credit Card** ◯ **Cheque** ◯ **Bank Transfer**

Please note: Card payments to be made at time of reservation

◯ MASTERCARD ◯ VISA ◯ AMERICAN EXPRESS ◯ MAESTRO

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Card number

Start date Expiry date

Security no

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2011 Course listings

Blending
7 – 9 March 2011, London
www.gtforum.com/blending

Improving refinery profit margins
21 – 23 March 2011, London
www.gtforum.com/refineryprofit

Introduction to refining
4 – 6 April 2011, London
www.gtforum.com/introrefining

Distillation
4 – 6 May 2011, London
www.gtforum.com/distillation

Fluid Catalytic Cracking
1 – 3 June 2011, London
www.gtforum.com/fcc

Wastewater treatment
September 2011, London
www.gtforum.com/wastewater

Technology selection and implementation
22 – 23 September 2011, London
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Catalytic reforming
September 2011, London
www.gtforum.com/reforming

Hydrocracking
October 2011, London
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For more information, please visit the individual website listed above or send us an enquiry via **training@gtforum.com**

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Course presenter

Diego Ruiz holds the Doctorate degree in Chemical Engineering from Catalonia Polytechnic University. He is currently manager of SOTEICA's European Office in Barcelona, and responsible for the technical department for energy management system implementations.

SOTEICA is a technology company that develops, implements and sustains applications for the process industry in the areas of Energy Management and Optimization (Visual MESA), Supply Chain (Production Accounting, S-TMS, Scheduling and Operations Support, S-SOM) and Operator Trainers (S-OTS). SOTEICA also provides services in the area of advanced control.

Diego Ruiz is working in the area of process engineering and computer science applications in chemical engineering since 1994. He has experience in industrial applications and research. As part of his background, he has worked as process engineer at DOW Chemical, and as Researcher and Project coordinator at UPC. His Doctoral thesis is related to abnormal situation management in chemical plants.

Diego Ruiz has participated directly in the implementation of on-line models for energy optimization (Visual MESA) in twelve refineries and petrochemical complexes in the last six years.

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