



OIL, GAS AND PETROCHEMICALS TRAINING

Refinery Utilities, Steam and Energy Optimisation

5 day course

Classroom, online or in-house

Course overview

After crude itself, energy is usually the largest operating cost in a refinery, and much of it leaks away through letdown valves, failed steam traps, poor heat recovery and flaring. This course treats the whole site as one energy system. Delegates build a steam balance across the pressure levels, examine letdowns, turbine drives and condensate return, and locate the waste. Pinch analysis is applied to heat exchanger networks, followed by the fuel gas balance, cogeneration, cooling water, compressed air and hydrogen network management. The final sessions turn to energy performance indicators, intensity benchmarking and an energy management system along ISO 50001 lines. Energy engineers leave able to map a site's energy flows, find the largest savings and build a costed improvement plan that management will fund.

What you will learn

- Construct a steam and condensate balance across all pressure levels
- Identify losses in letdown stations, steam traps and venting
- Evaluate turbine and motor driver choices against the steam balance
- Apply pinch analysis to improve heat exchanger networks
- Balance the fuel gas system and minimise flaring
- Assess cogeneration, cooling water and compressed air performance
- Optimise the hydrogen network across producers and consumers
- Develop energy indicators and an improvement plan for the site

Who should attend

- Utilities and energy engineers in refineries
- Process engineers responsible for heat integration
- Utility area supervisors and operators
- Refinery technical and optimisation managers
- Energy management system coordinators

Course outline

- 01 The refinery energy picture
- 02 Steam system and pressure levels
- 03 Letdowns, turbines and condensate recovery
- 04 Pinch analysis and heat integration
- 05 Fuel gas, flaring and cogeneration
- 06 Cooling water and compressed air
- 07 Hydrogen network management
- 08 Energy indicators and management systems

Upcoming dates

Dates	Venue	Format	Fee per delegate
2 to 6 November 2026	Online	Online	R8,500
1 to 5 March 2027	Maputo, Mozambique	Classroom	USD 1,325
8 to 12 March 2027	Pretoria, South Africa	Classroom	R19,950



Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 1,325** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afriscience.co.za, or WhatsApp us on **+27 63 479 1136**.

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