



## POWER AND ELECTRICAL TRAINING

# Renewable Energy Integration Challenges and Solutions

5 day course

Classroom, online or in-house

## Course overview

Connecting significant variable generation to a network creates problems that the network was not designed for, and African systems face them with less interconnection and thinner reserves than most. This course addresses the technical reality. Delegates work through variability and forecasting, reserve and ramping requirements, declining system inertia and frequency response, voltage and reactive power management on distribution networks with embedded generation, grid code requirements for connection, and the storage and demand response options available. Curtailment is treated honestly as an operational and commercial outcome rather than a failure, and the course closes on the planning studies required before a connection is approved.

## What you will learn

- Quantify variability and apply forecasting to operational planning
- Determine reserve and ramping requirements for a given penetration
- Explain declining inertia and its effect on frequency response
- Manage voltage and reactive power on networks with embedded generation
- Apply grid code requirements to a proposed connection
- Evaluate storage and demand response as integration measures
- Specify the planning studies required before a connection is approved

## Who should attend

- Utility planning and system operations engineers
- Renewable project developers and their engineers
- Regulators and grid code authorities
- Distribution network engineers
- Energy analysts and consultants

## Course outline

- 01 Variability, forecasting and operational planning
- 02 Reserve, ramping and dispatch under high penetration
- 03 System inertia, frequency response and its decline
- 04 Voltage and reactive power with embedded generation
- 05 Protection implications of distributed generation
- 06 Grid code requirements for connection
- 07 Storage and demand response as integration measures
- 08 Curtailment, and the planning studies that precede approval

## Upcoming dates

| Dates                  | Venue              | Format    | Fee per delegate |
|------------------------|--------------------|-----------|------------------|
| 26 to 30 October 2026  | Harare, Zimbabwe   | Classroom | USD 1,325        |
| 21 to 25 December 2026 | Kampala, Uganda    | Classroom | USD 1,325        |
| 4 to 8 January 2027    | Maputo, Mozambique | Classroom | USD 1,325        |
| 11 to 15 January 2027  | Online             | Online    | R8,500           |



## 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](http://www.afrisciencegroup.com), email [info@afriscience.co.za](mailto:info@afriscience.co.za), or WhatsApp us on **+27 63 479 1136**.

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