



AGRICULTURE AND AGRIBUSINESS

Irrigation Pumping and Energy Efficiency

3 day course

Classroom, online or in-house

Course overview

Energy is usually the largest cash cost of irrigating, and most irrigation pumps run away from their best efficiency point because the system they were sized for was never the system that got built. This course reconciles the two. Delegates work through irrigation system head: static lift, friction, operating pressure and the way a scheme's head changes as blocks are switched. Pump selection follows against that duty, including the consequences of oversizing, which is the most common and most expensive error. Borehole and surface pump configurations are covered. Motor and starter selection follows, along with power factor and the tariff structure that determines what a kilowatt hour actually costs. Variable speed drives are addressed with the affinity laws and the applications where they genuinely pay. Solar pumping is covered for irrigation duty, including array sizing against daily volume rather than peak flow. Measurement is addressed through flow, pressure and energy per volume pumped. The course closes on scheduling to tariff periods and on diagnosing a pump that has drifted off duty.

What you will learn

- Build a system head curve that reflects real block switching
- Select pumps to duty and avoid the cost of oversizing
- Configure borehole and surface pumping installations
- Choose motors and starters, and read a tariff correctly
- Apply affinity laws and judge where variable speed pays
- Size solar pumping against daily volume rather than peak flow
- Measure energy per volume and diagnose a pump off its duty point

Who should attend

- Farm and scheme irrigation managers
- Agricultural and mechanical engineers
- Pump technicians serving irrigation customers
- Energy managers on irrigated estates
- Consultants advising on irrigation energy cost

Course outline

- 01 Sized for a system that was never built
- 02 Static lift, friction and operating pressure
- 03 Head changes as blocks switch
- 04 Pump selection and the cost of oversizing
- 05 Borehole and surface configurations
- 06 Motors, starters, power factor and tariffs
- 07 Variable speed drives and the affinity laws
- 08 Solar pumping, measurement and drift diagnosis

Upcoming dates



Dates	Venue	Format	Fee per delegate
25 to 27 November 2026	Online	Online	R6,500
30 December 2026 to 1 January 2027	Lagos, Nigeria	Classroom	USD 995
18 to 20 January 2027	Kampala, Uganda	Classroom	USD 995
25 to 27 January 2027	Harare, Zimbabwe	Classroom	USD 995

Fees and how to register

This 3 day course is **R6,500** per delegate online, **R14,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 995** 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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