

# Energy saving in the agri-sector

Using Zest WEG Group products such as the IE3 Top Premium Efficiency electric motor and variable speed drive combination for driving equipment such as pumping systems in the agri sector can reduce owning and operating costs while providing much more reliable performance.

Anyone within the agricultural sector will know that operating an irrigation system can be expensive, with one of the primary factors being the cost of energy. The good news is that there are ways to reduce costs and achieve savings at the end of the day.

Significant savings can be realised by leveraging available technology to provide an appropriate electric motor and variable speed drive combination that will reduce owning and operating costs while providing reliable performance.

WEG IE3 Top Premium Efficiency motors and WEG Variable Speed Drives (VSDs), from Zest WEG Group, will do just that.

As a supplier with a solid track record in irrigation applications, Zest WEG Group can



Zest WEG Group's highly efficient combination to reduce energy consumption in centre-point irrigation systems: the WEG W22 electric motor with a WEG VSD.



Using its test unit, Zest WEG Group can demonstrate actual energy reductions that can be achieved by using increased efficiency WEG electric motors in combination with WEG VSDs.

provide an example to show how energy costs can be reduced. In a pivot pump application which operates for 4 000 hours in a single year – relative to two planting cycles – it was possible to do a comparison between a standard efficiency IE1 motor (91% efficiency) and a premium efficiency WEG IE3 motor.

WEG IE3 Top Premium Efficiency motors not only offer maximum ingress protection with a higher winding insulation system to increase motor life expectancy, but also offer efficiencies of up to 96.6% and benefits can be seen when compared against IE1 standard efficiency motors. Using a 22 kW 2-Pole induction motor at 75% of full load, an IE1 motor with an efficiency of 91%, measured against a WEG IE3 motor with 93% efficiency will deliver estimated savings of R2 100 per year at the current tariff.

Much higher savings can also be realised by using a WEG VSD in combination with a WEG motor. An IE1 electric motor, again operating for 4 000 hours per year at 91% efficiency, will consume about R93 800 worth of energy if still using old control methods such as throttle valves to reduce the output water volume and/or pressure. The same water volume and/or pressure could be achieved by using a VSD to reduce the motor speed. This method significantly reduces the energy absorbed when compared to running the motor direct online from a power source.

If a 10% reduction in operational speed using the VSD is assumed, further savings of 22% to 27% could be achieved; based on the affinity law principle of hydraulics.

The Zest WEG Group wants to be your partner in creating energy savings in your irrigation applications. Contact us today to make this a reality. □