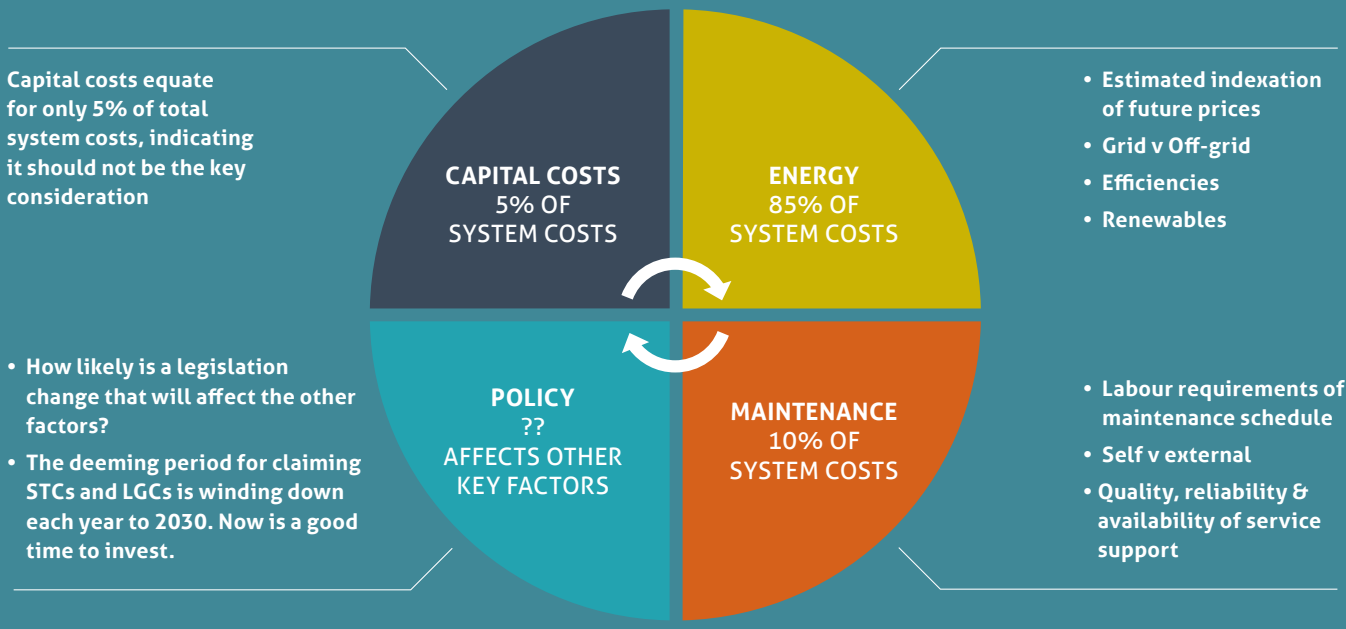

Electric vs Diesel pumps: is there a clear winner?

Leading agricultural economists at Ag Econ say there are four key considerations for irrigators looking to invest in new diesel or electric pumps: capital costs, maintenance costs, energy costs and the affect of government policies.

CAPITAL COSTS

Capital costs account for 5 percent of overall irrigation system expenditure and therefore should not be the primary factor in determining which energy source is right for a farm. However, if electricity infrastructure is not already in place, the capital costs of installing electric pumps may be prohibitive, making diesel the more attractive option.

MAINTENANCE COSTS

Maintenance costs account for 10 percent of overall system expenditure. Electric pumps are the clear winner when it comes to maintenance, requiring less servicing than diesel pumps.

However, it is also important to consider whether the maintenance can be done by the farmer (often the case with diesel pumps) or needs to be done externally, and how readily available the off-farm service support will be.

ENERGY COSTS

Decisions on the capital costs (good design) and maintenance costs (efficiency) in turn influence the energy costs which make up the bulk of the lifetime costs.

Electric pumps are 50-85 percent more efficient than diesel pumps. However, diesel pumps become more competitive as the size of the pump increases (efficiency increases as horsepower increases).

Electricity pricing has become a major issue for irrigators with price increases flowing onto higher per-megalitre pumping costs.

For irrigators using diesel pumps, exposure to fluctuations in the world crude oil price, exchange rates and the unlikely removal of the diesel fuel rebate are all risks to energy price stability.

GOVERNMENT POLICY

The dynamic nature of Federal and State government policy initiatives makes economic modeling complex. The National Renewable Energy Target and Climate Change Fund are expected to increase energy costs at an average annual rate of over 16 percent to 2019-20.

One benefit of electric pumps is that solar can be integrated into a grid-connected electric pump relatively easily. New regulations to solar "feed-in-tariffs" means that in some cases, the excess power fed into the grid can also offset installation costs. Installation of solar may also enable access to the Renewable Energy Certificates which are credited to the capital costs of the purchase. ■

Ag Econ are undertaking an SRA-funded research project called Productivity Improvements through energy innovation in the Australian sugar industry**.**

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