COTTON AUSTRALIA

*my*BMP Energy and Input Efficiency

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myBMP Energy and Input Efficiency

More practical, better resources, helps reduce farm energy costs, covers:

- Monitoring farm energy use
- Irrigation pump station design
- Irrigation pump performance
- Optimising energy use in tractors

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Monitoring farm energy use

- Electricity - check tariff, meter readings, and bills
  - Guide to selecting the best tariff
- Fuel- buying strategy, storage life, fuel quality
  - Guide to getting best performance from diesel
  - as diesel gets older, fine sediment and gum forms in the fuel
  - liquid fuel accounts for about 90% energy for cropping*
- Records – diesel, electricity, petrol, fertiliser, gas
  - Guide to monitoring farm energy consumption

*Energetics, 2013

Monitoring farm energy use

- EnergyCalc
  - compare with industry benchmarks, identify high energy use areas, find opportunities to reduce energy costs
- Alternative energy sources
  - evaluate the alternative energy options and develop a sound business case
- Using seasonal forecasting prepare for high energy demands
  - plan for likely scenarios
  - diesel required for irrigation

  (and other inputs e.g. seed, fertiliser)

Irrigation pump station design

Excellent resources to help

- Best type, motor & pump
  - oversized pumps waste energy
  - most efficient motor is the one which operates closest to its point of minimum specific fuel consumption
- Appropriate height
  - how to avoid high suction pressure, cavitation, impeller damage
- Well designed pipelines
  - suction pipe entry – large & smooth, screens, diameter,
  - discharge pipe size
- Good overall design
  - qualified person

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Pump performance

- Energy use measured for each pump
  - hour meter can determine potential for capital upgrades and prioritise pumps for pump efficiency testing
- Pump maintenance
  - Efficiency typically down 5% to 15 % after 10 years
  - significant energy savings possible with maintenance
- Pump testing
  - diesel savings of 5% to 30% are achievable in most cases

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Optimising energy use in tractors

Tractors consume around 25% of all direct energy use on a cotton farm.

- Adaptive driving
  - failing to drive ‘adaptively’ can increase fuel consumption by more than 20 % (Intelligent Energy Europe, 2012).
- Tractor operations
  - every centimetre increase in working depth = additional litre of diesel per hectare
  - avoiding or combining operations is the fastest way to make significant fuel savings
- Ballasting and tyre pressure
  - 20% fuel saving is possible with the correct ballasting, tyre pressures and implement depth control (NCEA 2015)
- Monitoring fuel usage
  - “measure to manage”

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It's worth a visit!

www.mybmp.com

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