

TOOLBOX

Pump water as you go, not just when you reach the bottom



Did you know?

- Pumps may be your site's hidden energy eater if they operate out of sight 24/7 and you only worry about them when they have failed.
- A 30 kW pump operating continuously all year round emits more than 100 tonnes of carbon and costs over £20,000 to run.
- Some pumping is unnecessary – you can leave water at the bottom of a pit if it does not cause flooding, and when it's above the water table it may drain away naturally.
- Reducing the height water has to be lifted saves energy; pumping from a point 50% higher saves 30% of your energy – don't wait for water to get to the bottom of a pit before pumping it out.
- Running pumps only at night can save money because electricity is cheaper.
- Pumps wear with time, typically losing 10–15% efficiency over 10 years working life.

Take action to save energy...

1

Investigate the cost of pumping.

- How much fuel or electricity does it use?
- How much does the energy cost? Be sure to calculate how many hours pumps run at night and how many during the day.
- How much does pump maintenance cost?

3

Ensure flow control is efficient.

- If using on/off control, fit and maintain a non-return valve.
- If using a throttling valve, use a smaller pump or variable speed drive to be more energy efficient.
- If variable speed drives are always working at the same speed, a smaller pump is more efficient.

2

Configure your pumps correctly.

- Use the lowest lift route for water disposal.
- Estimate the water velocity in the pipeline – it should be about 2 m/s.
- List pipe fittings on the line, including valves, bends, etc., and identify unnecessary and high pressure-drop fittings.

4

Maintain the system.

- Check for leaks – a leak means you pump the same water twice when it returns to the pit from the leak!
- Check that pumps run at their optimum flowrate, and avoid switching on and off too frequently.



Take action and here's what you could save

Cut your pumping energy by 50% and save up to 50 tonnes of carbon or £10,000!



Add your actions to your site's energy saving plan and start counting the savings.