



MADE
IN
ENGLAND

the pump that uses no fuel!

Energy Comparisons for the Papa Pump

March 2019



Using the natural power of flowing water

Don't forget about Carbon Emission Savings...



Even smallest fossil fuel pumps produce +1 Tonne CO₂ per year

(1 Litre Diesel is 3kg CO₂)



Grid connected pumps can be as costly in carbon terms

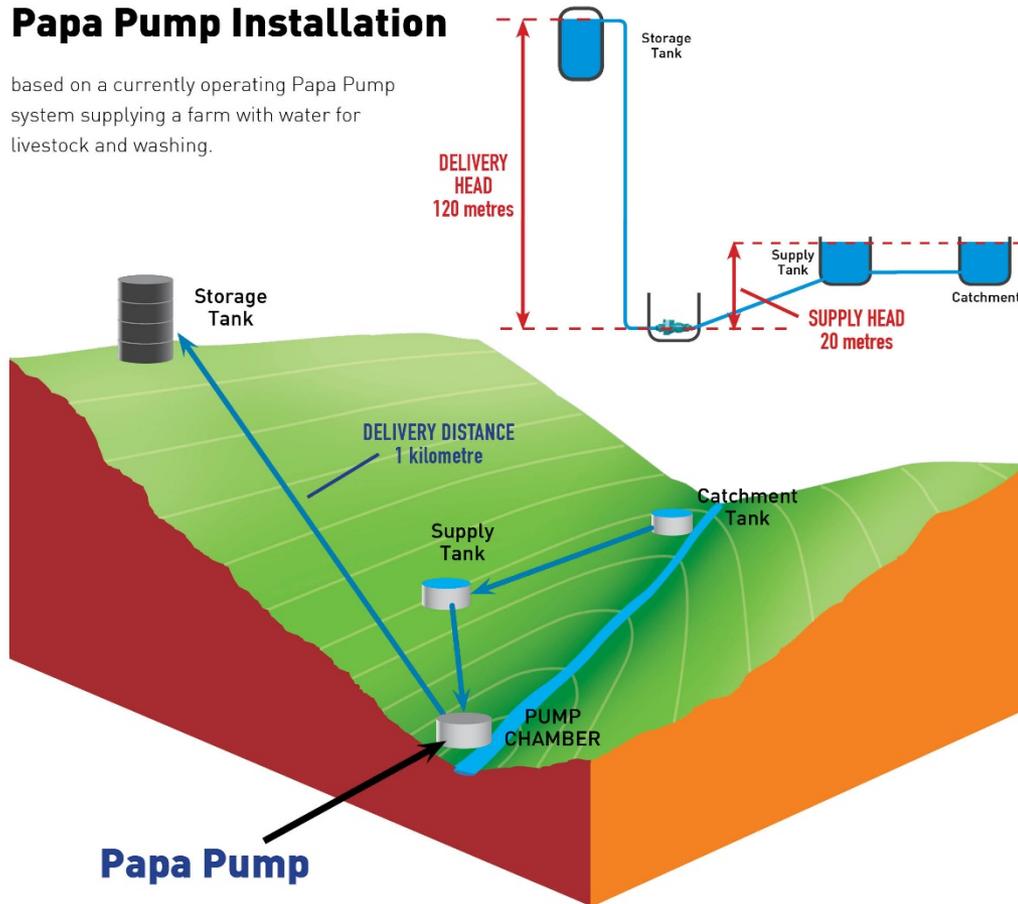
(UK Grid is 50% coal powered)

(1kwh of grid power is 43kg Co₂)

Typical PAPA PUMP Installation...

Papa Pump Installation

based on a currently operating Papa Pump system supplying a farm with water for livestock and washing.



+1 km in distance pumped

Water pumped 120 metres vertically

30,000 litres pumped per day

OPERATING COSTS FOR PAPA PUMP
only US\$30 per year!

WITH Zero Carbon Emissions

Operating Cost Calculations:

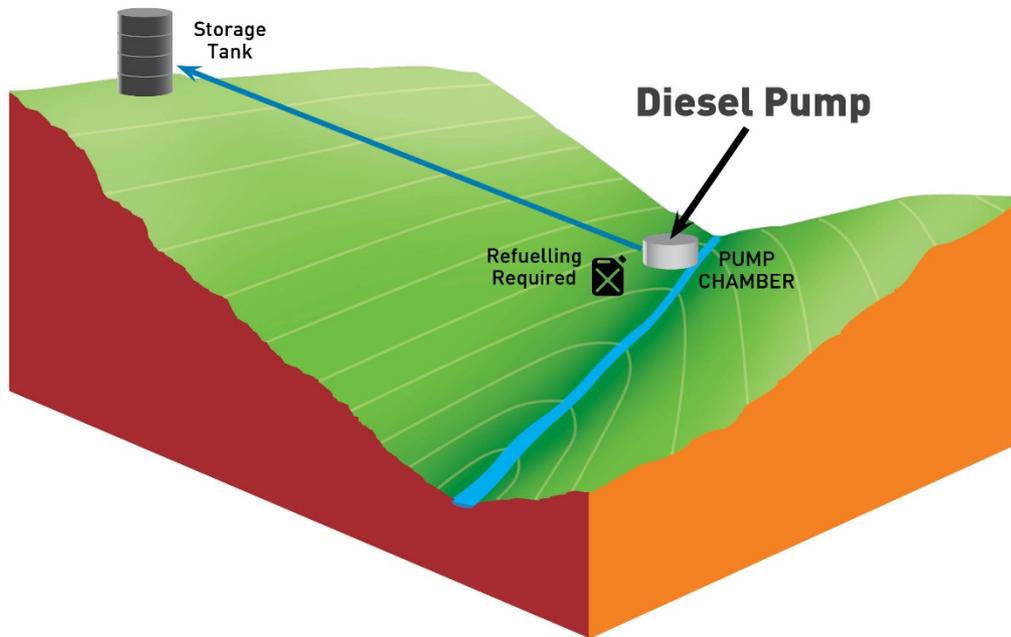
New internal valves may be needed annually (depending on site) @ US\$30.

Valves are easily fitted by the user, so there is no labour charge **and** each pump comes with a free spare set.

Typical DIESEL PUMP Costs Equivalent...

Diesel Pump Installation

Mono 440 positive displacement pump fitted with 5hp diesel pump
- 1000 litres/hr @ 100 metres lift. Fuel consumption 1.3 litres/hr
x 20 hours = 26 litres/day or 9500 litres/year.



26 litres of fuel (US\$0.6) = \$16/day

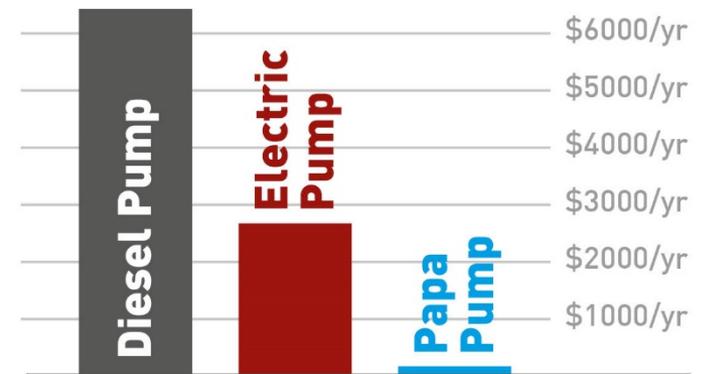
78kg of CO₂ (US\$11/tonne) = \$1/day

Service/Parts (US\$150 yearly) = \$0.4/day

TOTAL OPERATING COSTS

FOR DIESEL PUMP = US\$6351 per year

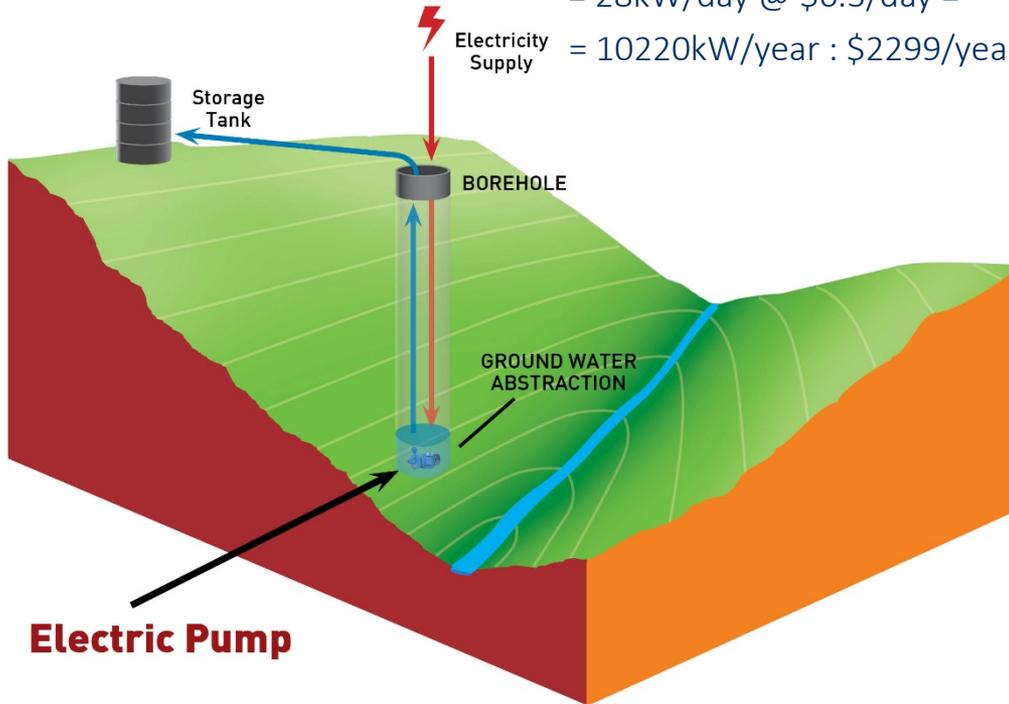
Total Operating Costs



Typical **ELECTRIC PUMP** Costs Equivalent...

Electric Pump Installation

DAB S4B 24m 4" Borehole – 1.1kW 1000 litres/hr @ 120 metres lift. 20000 litres in 20 hours x 1.1kW = 22kW motor efficiency
 = 28kW/day @ \$6.3/day =
 = 10220kW/year : \$2299/year



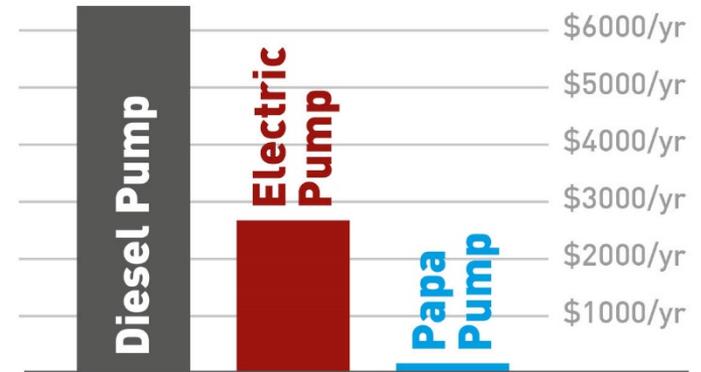
28kW/day (US\$0.22) = \$6.3/day

50kg of CO₂ (US\$11/tonne) = \$0.55/day

Service/Parts (US\$150 yearly) = \$0.4/day

**TOTAL OPERATING COSTS
 FOR ELECTRIC PUMP = US\$2646 per year**

Total Operating Costs





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