

Grundfos Solar Pumping Solutions

Renewable Energy Workshop

Grundfos Solar Pumping

- **1982: Solar driven pump systems**
- During the 1980s a broad interest in climate change and sustainability started to manifest all over the world. Grundfos started to investigate the possibilities of a solar driven pump around 1980 and when UNDP launched a solar pump system competition in 1980, the work really took off. Grundfos introduced their solar driven pump system to the world in 1982 and won the UNDP competition.



Grundfos Solar Pumping

- **2002: Flexibility in power supply – SQFlex**
- The SQFlex is flexible in its power supply and is therefore ideal for remote areas where there is either no power supply, or where the supply is unreliable. The pump can be run by for instance solar or wind energy or run on a generator or batteries. Like the solar pump systems developed by Grundfos in the 1980s, the SQFlex is virtually maintenance-free.



Grundfos Solar Pumping

- **2022: Renewable Pumping in Australia**
- Solar powered pumps systems are now considered proven technology and mass market adoption has been underway for several years. The purchase cost of the equipment means that a solid financial business case can be proposed when comparing solar pumping to traditional fossil fuel sets or windmills.



Current Project - Proposed Off-Grid Farm

- Groundwater Partner
- Aquawest NSW
- Dubbo, Narromine, Gunnedah, Mudgee, Scone, Tamworth
- Mr Brett Abrahams
- Mr Adam Fields



Current Project – Proposed Off-Grid Farm

- One of Australia largest Chicken farm's
- Accounting for approximately 20% of national production
- Stage 1 : New installation of 18 sheds

- Remote site
- Consideration of disruption to neighbours to install grid power

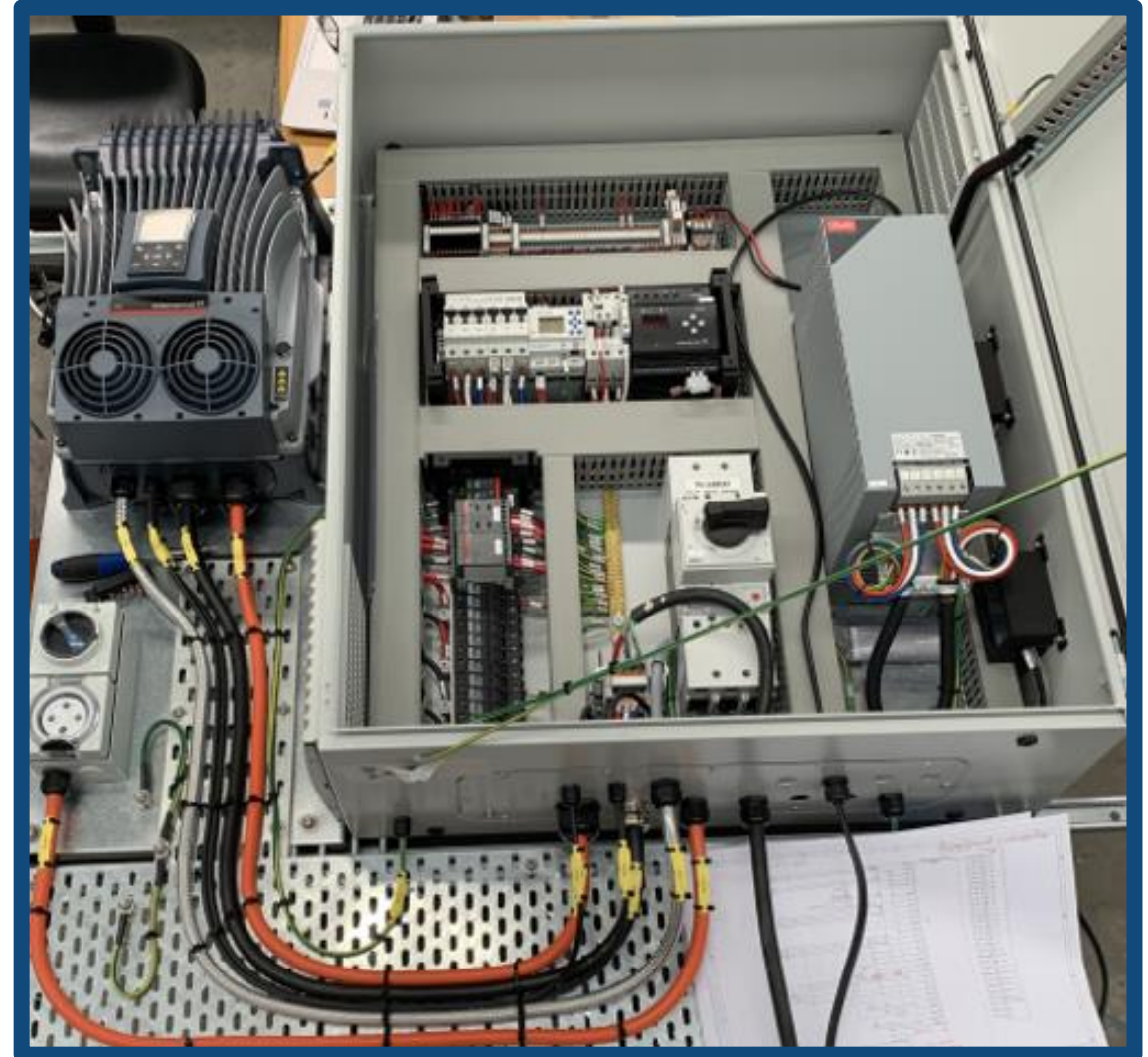
- 2 x Grundfos SP submersible bore pump, 15kW
- Estimated flow up to 1.5ML/day
- 2 sets 90x330w ground mount panel arrays
- Silent pack diesel generator with scrubber system

- Variable demand due to irrigating, watering, cooling, fire protection demands



Power Blending Solution

- Fully flexible solution able to operate under all conditions
- 100% duty solar system with back up AC blending
- Multiple control options
- Irradiation sensor providing feedback to Grundfos renewable inverter. Reduction in irradiation signal for generator start
- DC solar is favoured and blended with AC from generator
- Increase in irradiation signal for generator stop
- Stabilization times and delays programmed site specifically to ensure optimum generator operation.
- Night duty available through timer function
- Blocking diodes, safety circuit and earth leakage protection



Solar Pumping Solutions Into the Future

