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ENERGY case study

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Rising costs, climate change prompt shift to solar

AN ENERGY expenditure that had been climbing by around 10 per cent per year coupled with concerns about climate change have prompted St George cotton irrigators Ian and Anne Brimblecombe, “Burgorah”, to install solar panels which generate 100kW of electricity.

Their 400 250-watt solar panels will soon be joined by a supplementary bank of panels which will enable a 70kW fixed-speed pump to be powered by solar alone on sunny days.

Mr Brimblecombe has also explored the economics of floating solar panels for any future expansion of his solar capacity.

“That would kill two birds with the one stone because it would help to reduce our evaporation,” Mr Brimblecombe said.

The Brimblecombes irrigate 320 hectares of cotton with water harvested on-farm and from peak flows in a tributary of the Balonne River.

Water is stored in two shallow dams, the first to be emptied, while one deeper dam is used for longer-term storage.

“It’s 10 metres deep, and we’d lose 2.4 metres a year through evaporation. That’s why we’re looking



St George grower Ian Brimblecombe.

seriously into floating solar panels to power our electric pumps.”

Ian Brimblecombe has been growing cotton in the St George district for close to 30 years, and bought “Burgorah” 15 years ago.

“Back then solar wasn’t an option because it was so expensive, but the feed-in tariff encouraged us to invest in solar because it was an area where we

could gain some kind of control over rising input costs.”

“We’ve installed a fair bit of solar; a lot goes back into the grid and Ergon pays me 44c/kW for it, so it certainly reduces our power bill, and allows us to do something to reduce our contribution to climate change.”

The Brimblecombes installed their first solar array three years ago, and minimise their electricity outlay whenever possible by taking advantage of discounted night-time and weekend tariffs to power their three electric pumps.

“The tariff is 42c during the day, and I can make electricity for about 8c with the solar, or 15c at night and weekends.”

Mr Brimblecombe said energy costs were “getting out of control” prior to their installation of solar.

“It was at the point where we had to get solar or convert back to diesel. Now diesel is much cheaper than it was but I don’t think that will last and we’re happy to keep investing in solar.”

The Brimblecombes still use three diesel pumps to supplement their three electric ones, and are waiting for a drop in the price of batteries to store

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A bank of six inverters change solar-generated power from DC to AC so it can be used by the adjacent pump or fed into the grid. Solar power on this site is supplied by a 30kW array of panels.

solar-generated electricity on-farm before investing in replacement pumps.

“At the moment we have 100kW of capacity from 400 250-watt panels, but we can’t use that power on our 200kW motor because they’re in different spots.

“We can only use solar to offset the power used on the pump that it’s attached to, even though there’s a powerline between the two sites.”

“I think there’ll be more interest as electricity gets more expensive, and once batteries get cheaper – there’s a lot of potential for saving in the next five years.” Mr Brimblecombe said.

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