

MARTY'S HOUSE TOUR 2018

As each group is limited to one hour I have reduced the number of projects I will cover in order to try keep the tour to 45 minutes and leave 15 minutes at the end for general questions. We will start in the back shed and work our way back through the house to the front garage. Please feel free to contact me any time about specifics of any of the projects, covered or not, later. I will be happy to arrange further visits for individuals and provide advice where I am able.



1. **The back shed off grid solar power station** consists of 8.16 kilowatts of solar PV on the roof of the shed being managed connected to 8 kilowatt Fronius Primo inverter. The Selectronic SP-Pro data controls the output of Fronius Primo inverter and manages the charge/discharge of the 20 kwh of BYD lithium modular batteries in two cabinets. This power station runs 240-volt power to the shed and all the white power points in the house. If there is no sun and batteries reach a predetermined level of charge the SP-Pro starts the diesel backup. If the whole system fails, the house can be switched back to the street power by a changeover switch at the front switchboard. Excess power is wasted and not exported to the grid with this current set-up but up the track when we get peer to peer that may change.
2. **Solar powered garden reticulation system** runs off 2 solar PV with small gel batteries for storage. A 24-volt DC pump fills tanks from the bore. A computer controlled separate pressure pumped reticulates water to the garden.
3. **Hybrid split air-conditioner system** that uses 48-volt compressor that will run off 1 kilowatt of solar PV when available and the 240-volt AC mains when not.
4. **Solar powered hydronic system** consisting of 30 low pressure solar vacuum tubes, 180 litre water storage tank and air/water coil unit.

5. **Solar Evaporative Cooler** – around AUS\$300 (excluding solar supply) to build his unit is very cost effective.
6. **Original ten year old grid connect system** earning 40 cent FIT until Department of Finance contract runs out. 4 kilowatt SMA Sunny boy inverter and 3.5 kilowatt of solar PV connected continually to the Western Power grid.
7. **5 kilowatt off-grid solar system** consisting of MPP Power PIP4048 inverter charger, 3.5 kilowatt of solar PV in parallel and 20 kwh of Vision gel lead acid batteries. Power distributed around house to separate red power points.
8. **Home designed and built very efficient solar HWS** consisting of 30 high pressure vacuum tubes and 300 litre water tank. Pumps are low voltage battery powered so no need for 240-volt mains.

