

There is an interesting feature of grid tie inverters both practically and economically that is not unknown but difficult for many people to use because it involves the carry capacity of a house circuit.

NOTE: A house must have a 2 way “bidirectional meter” or a “SMART meter” installed to measure outgoing produced energy. (feed in tariff is almost usually worthless – something like only 3cents p/Kwh for this type of system if any).

1. Each house circuit is 10 amp @ 240v . This means it can carry up to 2500w (2.5Kw).
2. The cost of wiring in an inverter makes its size binding and cannot be changed or altered or removed at will.

There is a “plug in” grid tie inverter that plugs into a normal house socket.

These inverters are “stackable” , meaning they can be connected onto e.g. an “extension socket board”.

For purpose, there are also “plug in grid tie wind power inverters” that are specifically designed to harness power from particular wind turbines of various voltages AC/DC and size-watts/Kw’s.

Rarely is there ability to harness cheap but effective products by strategy inclusive economics.

In this instance, it appears to be in a DIY capacity, and direct buying capacity.

The first part of the strategy is with wind power, it’s 24/7 day and night, the second is that through direct usage when electricity is require to be consumed there is something producing electricity e.g. “to prevent daw of electricity that is paid for from the mains grid!”

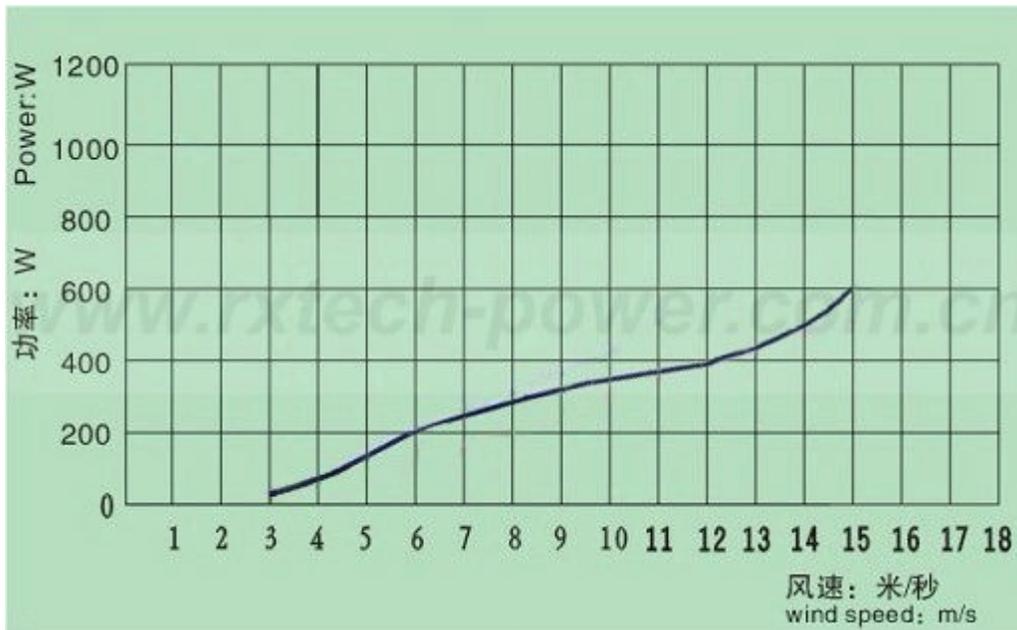
The chosen wind turbine (a 400 watt rated 600watt maximum AC 3phase 5 blade wind turbine), requires to be a set of three(x3) and required 3 pluggable grid tie inverters(x3) suitable for the turbines (600w rated for AC three phase requiring to also obtain a “dump load resistor in housing box” for each inverter)!

Typically, as a flat and non real world average, wind speed at wagga wagga from weather graphs shows in winter common “lower speed”(around 50% of 24 hour period) of a band average (alike a mode average lower end) wind speed is “5 mps” (meters per second) approximately 11 mph(miles per hour).

This means that at a height of **12 - 15 meters (where a wind turbine should be located)**, 1 to 2 mps can be added reasonably surely to obtain 6 – 7 mps at 15 meters tower altitude.

A total (lower end) common wattage output is around 600 watts of 240v AC into the house circuit or six 100w light bulbs, or half the current operating the 1000w portable electric grill element. Or “½ a Kw”.

The below graph for the turbine shows that at the normal higher end wind speed less common(around 30% of time in 24 hours intermittently) of 8 meters a second yielding 300 watts output p/turbine making a total of 900w (just under 1Kw) with 3 turbines and inverters stacked. The final 20% of time is usually non producing because of no or insufficient wind speed.



It is safe to assume a total of 0.5Kw constantly(for lack of better expression) for 12 hours making a minimum production of 6Kw p/day(24 hours) to 9Kw p/day(24 hours) a rough estimate with the stronger wind and gust sections.

91 days is a quarter approx.

"Country Energy Tariff"

PEAK PERIOD is from 7.00 am to 9.00 am and 5.00 pm to 8.00 pm on weekdays.

SHOULDER PERIOD is from 9.00 am to 5.00 pm and 8.00 pm to 10.00 pm on weekdays.

OFF-PEAK PERIOD is at all other times.

TARIFF SCENARIO P/QUARTER - 0.5Kw constant through each section of 24 hour period

6 hours p/day morning and afternoon peak periods (3Kwh x 91 x 0.310706(31.0706 cents)) = \$84 p/quarter

8 hours p/day shoulder period (4Kwh x 91 x 0.269984()) = \$98 p/quarter

10 hours off peak period (5Kwh x 91 x .104(10.4000cents)) = \$47 p/quarter

TOTAL REMOVED MAINS COSTS = \$229 p/quarter

ABBERATION SCENARIO P/QUARTER - 91days x 9kWH = 819Kw (2/3 = 6Kwh day) .

@ 9Kw day = ("residential shoulder period" 400Kwh x 26.9984 cents = \$150.84) + (residential peak period 419Kwh x 31.0706 cents = \$130.19) = \$280 p/quarter worth electricity produced by turbine compared as "Country Energy Tariff" if all consumed by the house.

@ 6Kw hour day = \$186 p/quarter

BELOW, COSTS ARE “1 AUD = USD 94cents”

However, it is a DIY building trick requiring a gasless MIG welder and a 15 meter tower constructed.

\$787.68 3x 600w wind inverters

\$842.41 3x 400w-rated 600w-maximum 5 blade wind turbines

\$20 (\$60) x3 of 900 watt rating 1.5 ohm dump load resistor system part
<http://www.aliexpress.com/item/-/1344696267.html>

\$150 130 amp Gasless MIG welder system

http://www.ebay.com.au/itm/130Amp-MIG-Gasless-Welder-Welding-Machine-Tool-10Amp-Plug-DYNAMIC-POWER-/131243725617?pt=AU_Welding&hash=item1e8ebc5331&_uhb=1

\$90 WeldSmart 0.6MM X 5KG Gasless Mig Welding Wire Flux Cored E71T-GS for mig welder
http://www.ebay.com.au/itm/WeldSmart-0-6MM-X-5KG-Gasless-Mig-Welding-Wire-Flux-Cored-E71T-GS-for-mig-welder-/131126247359?pt=AU_Welding&hash=item1e87bbbfbf&_uhb=1

\$45.00each ~~\$47.00~~ (\$450) 10x mild “black steel” SHS 40 x 40 x 2.5mm \$45.00 ~~\$47.00~~

\$80 2x pieces black steel pipe NB 40 MED

\$9.20each (\$46) 5x 20Kg bags of cement

\$7each (\$35) 5x 20Kg bags of cement fill

-??GET PRICE FROM INTERNET AT TIME - \$300 -500 -270 meters of 6mm sq. copper wire 50amp @ 12v

??? earthing surge protection pole for 3 x lightning surge arrestors on wire feeds \$33 (\$11 each)

\$2842 (using \$300 as estimate for 6mm² wire 270 meters minimum)

An even \$3000 is a reasonable final actual estimate

? 40 x 40 x 4.0mm \$61.00 (x6 pieces **\$370** for simple tripod with three 40 NB MED \$43.00 - **\$130**) 3 bags of fill and 3 bags cement **\$80 = \$580**

600W wind grid tie inverter for wind turbine generator 3phase ac 10.5-30v input to ac 220v, 230v, 240v

x3 cost AU \$787.68

<http://www.aliexpress.com/item/600W-wind-grid-tie-inverter-for-wind-turbine-generator-3phase-ac-10-5-30v-input-to/1586765207.html>



NOTE : THE WIND SYSTEM MUST BE MATCHING IN 12V OR 24V AND « AC » -NOT dc-



(x3 of buy) \$842.41 = 3

Small Wind Turbine ; Wind Turbine Generator 600 max ; 3 years warranty with RoHS CE ISO9001 Certification

http://www.aliexpress.com/store/product/Small-Wind-Turbine-Wind-Turbine-Generator-600-max-3-years-warranty-with-RoHS-CE-ISO9001-Certification/437873_1372866143.html

\$11 each



Low Power Lightning SArrest Surge Protector Arrestor ThunderLow Power Lightning SArrest Surge Protector Arrestor Thunder Price:AU \$10.83

http://www.ebay.com.au/itm/Low-Power-Lightning-SArrest-Surge-Protector-Arrestor-Thunder-/351096697371?pt=AU_Home_Personal_Security&hash=item51befe721b#ht_1894wt_1120

Product Name	Power Surge Protector
Model	YJS3200F-12V
Color	As Shown
Size	65 x 25 x 25 mm
Weight	70g
Technical Parameters	Joint Model: In:A+/⊥/B- Out :B-/⊥/A+ Continual Voltage:18V Max Continual Voltage:27V

Response Time : <0.5ns
Joint Wastage : <0.5dB
Working Temperature:-60 °C±190°C



AU \$289.99 1200W pluggable grid tie inverter for solar panels

http://www.ebay.com.au/itm/1200W-Grid-Tie-Inverter-for-Solar-Wind-28-48v-DC-220V-240V-AC-LCD-MTTP-/331268609594?pt=AU_Solar&hash=item4d2125d63a

Lowenergydevelopments + \$1000 (4x 250w panels)

