

# MPPT and Clippers for Wind



MidNite Solar 360-403-7207

# MPPT for wind, What it is and Why?

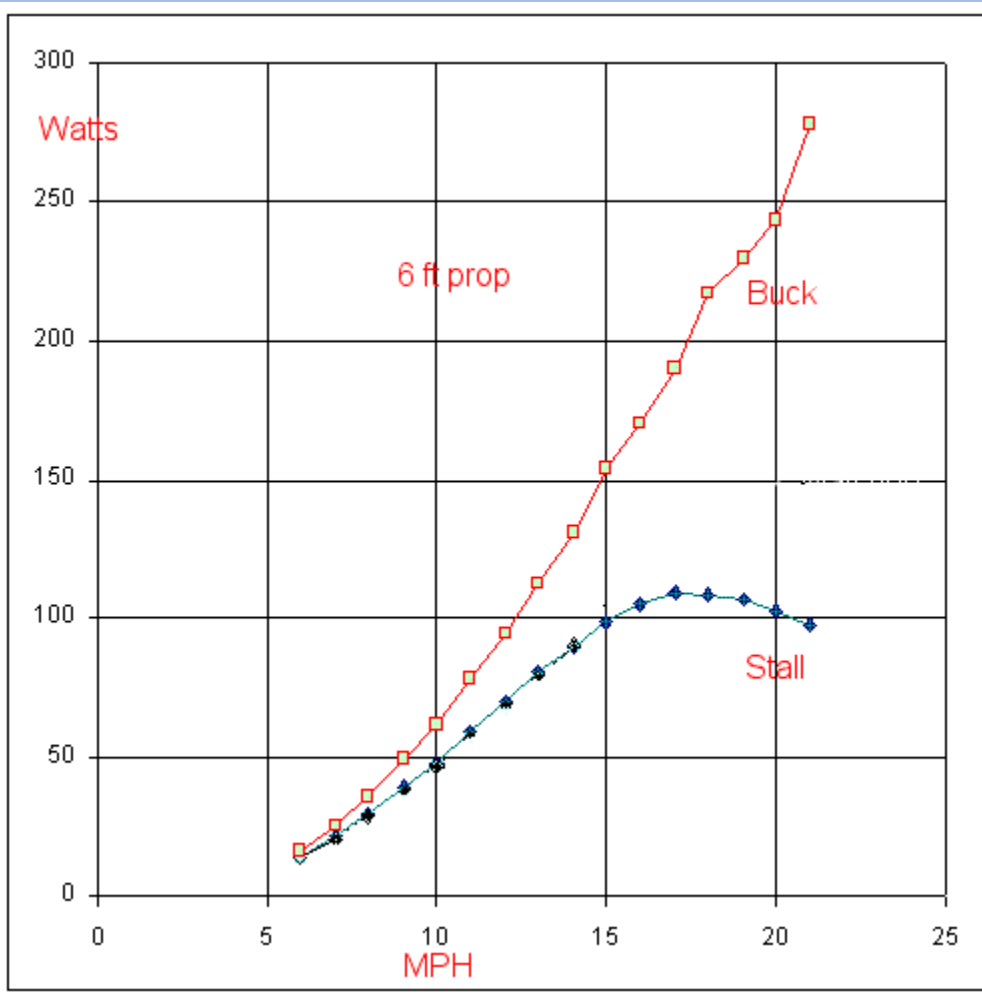


- \*A wind turbine's output voltage is related to RPM
- \*RPM is related to Wind speed
- \*As wind speed increases the voltage wants to increase
- \*Connected directly to battery Turbine will Free wheel below and stall above the MPPT voltage
- \*Stalled turbines create more heat in the stator as amperage is greater
- \*Stalled turbines do not run at optimal TSR



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# MPPT for wind, What it is and Why?



- \*MPPT allows the turbine to be Maximized and run at its optimal TSR
- \*MPPT can yield 2x – 3x more power out of the same turbine

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# MPPT for wind, What it is and Why?



- \*Unlike Solar MPPT we use a 16 point power curve to track the Wind turbine
- \*Classic watches the current from the turbine and adjusts voltage to track the turbine
- \*Classic will Raise the input voltage as the battery becomes full to prevent over charge
- \*Classic allows for higher turbine voltage vs direct connect to battery
- \*Classic will increase power output vs direct connect to battery
- \*Classic allows turbine manufacturers to use a single stator for multiple battery voltages

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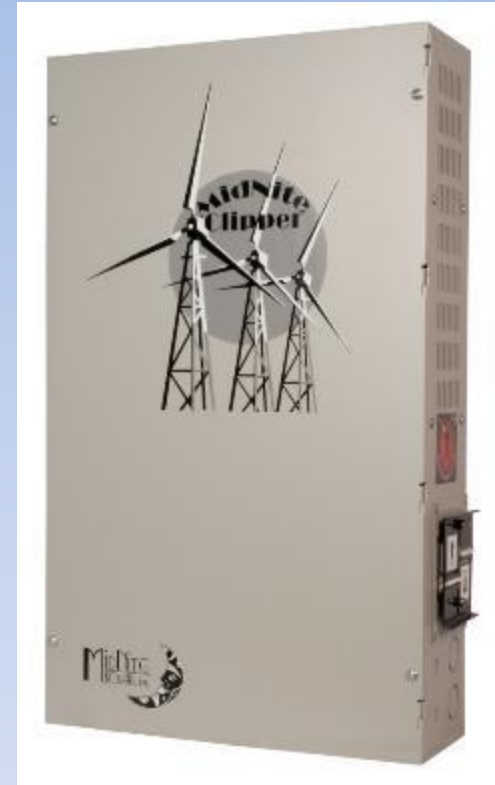
- \* Available in 6 models 150, 150Lite, 200, 200Lite 250 and 250Lite
- \* Model #s equal the input voltage
- \* Hyper VOC
- \* Up to 96 amps output
- \* 12,24,36,48,60 or 72v battery (Adjustable for others)
- \* Built in Ethernet as standard on ALL Classics
- \* Free Software to monitor and control the Classic
- \* Free Cloud based monitoring for all Models of the Classic
- \* Classic allows turbine manufacturers to use a single stator for multiple battery voltages

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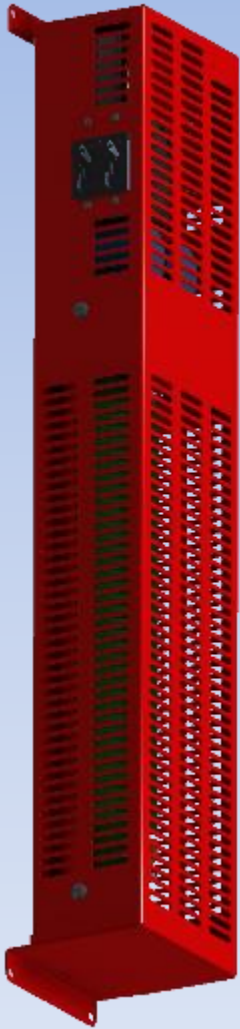


- \*Clipper is self powered so it will act as a fail safe if the Classic should get turned off etc
- \*Classic and Clipper will allow for perfect 3 stage charging and no diversion loads required
- \*Clipper is available in 4 base models
  - 1500 watt DC
  - 4000 watt DC
  - 1500 watt AC
  - 4000 watt AC
- \*Clippers are available in several different resistance values to perfectly match the turbine
- \*Not all turbines can be stalled as damage can be done to the Stator. On these turbines we provide a perfect match and keep a solid load on them to prevent free wheeling



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# The Midnite Wind Kid (Coming soon)



- \*150 volt input
- \*30 amp output
- \*12.24.36 or 48v battery
- \*AC or DC turbines
- \*Wind or Hydro

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# COMING SOON 600 volt Clipper



Allows control of the turbine for high voltage chargers or grid tie inverters. Works with virtually any turbine.



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# MidNite Chinook, 500W turbine.



- \*500 watts
  - \*12,24,48v or grid Tied
  - \*Internal Clipper
  - \*3 Stage charging
  - \*Different battery types supported
  - \*Vibration sensor (For icing etc)
  - \*Blue Tooth enabled
- 
- \*Available with 500 watt Grid Tie inverter
  - \*Grid Tie inverter has a Clipper
  - \*Turbine stops when grid fails



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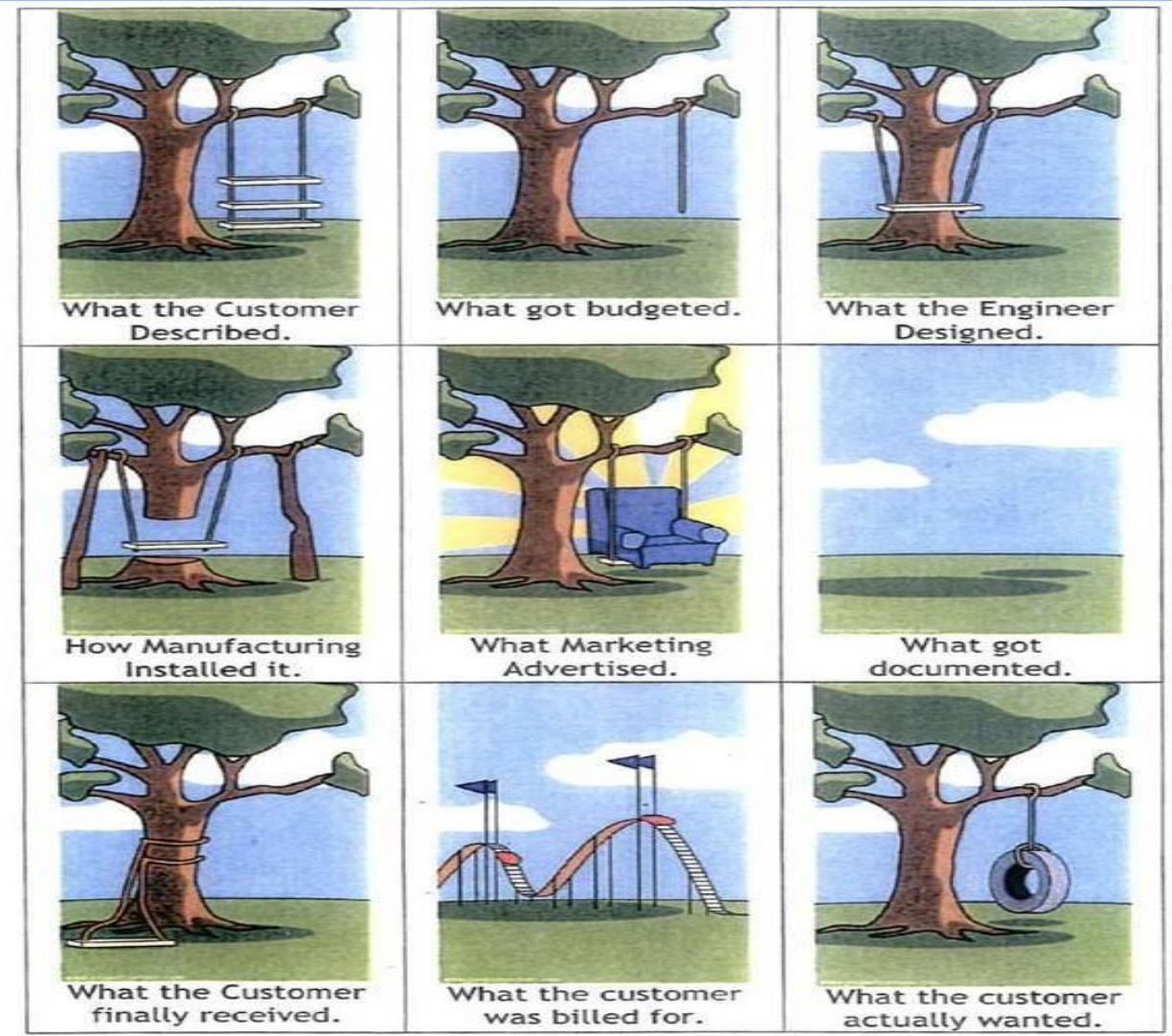
# MidNite Army Wind, 1KW turbine.



- \*1,000 watts
- \*Battery charging or Grid tied
- \*MPPT for battery charging
- \*MPPT grid tie inverter
- \*All cast aluminum
- \*Sealed Stator and rotor assembly

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# QUESTIONS??



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