

April 3, 2022 - My First Off Grid Charged Electric Vehicle

At 78 years of age my mountain bike days are over... But, with some assist I can still peddle a bike. Fortuitously, a friend had just upgraded to a fancy eBike and sold me his "Lectric XP 1.0" Lithium-ion battery electric assist bicycle for a price I could not refuse. I like the new vehicle with wide comfy seat and variable assist by the electric motor as I peddle. I will have to plan my trips carefully so the battery does not drain before I get home as the bike weighs 60 pounds!

So, to be off grid I need alternate methods to charge the bike's 48VDC battery. I am going to try to use both solar and wind power combined via special electronics to keep the eBike fueled and at the ready.



As an amateur radio operator (Ham Radio license W7DGB) I have collected various parts over the years including components to built antenna towers. I am using some of those to fabricate a 35' tower with a 500-watt wind turbine at the top. Of course the turbine will only output 500 watts if there is a 28 knot wind blowing. It also requires at least a 7 knot breeze to start turning. Basically, it will work best during winter storms. I am hoping that mounting it at 35' will get it up above some of the trees that block the wind at my home.

I am also going to mount a couple solar panels on the tower in hopes of harnessing some sunlight during the summer to charge the eBike.

All of this activity and research has resulted in a new plan for battery backup power for our network headends on Marrowstone. I am investigating the newer Lithium battery chemistry called Lithium Iron Phosphate which are very expensive but, are far superior to the lead-acid, AGM batteries we have tried in the past. At 8 times the cost of the old batteries, these should last for 10 years! So, hobby activity leads to innovation.

Peace, David

David G. Brader, President, MACaid, Inc. dba Marrowstone Wireless