

West Virginia Division of Air Quality Outreach Display Projects

Wind Turbine Diorama

This display draws attention to itself with a spinning wind turbine that has a flashing red LED on top and a LED light in the house making the windows glow. It also features a pedestal mounted solar panel. The purpose is to show some of the renewable energy sources available in West Virginia. The display uses HO model rail road scale items. The wind turbine model was solar powered but given the light limitations where most of our displays are presented it was converted to run on 2D cell batteries. The batteries are in the base accessible from a door below and operate the LED in the house, the flashing LED on the wind turbine and spin the turbine. So far they have lasted for over 100 hours of continuous operation. The turbine rotational speed was slowed down to make it appear more consistent with actual speeds observed on real units. The display measures about 26" wide by 18" deep by 28" tall. It is built on a wooden base. The pedestal that it sits on is open on the bottom and drops over the display to form a case. We have constructed an acrylic shield to go around the front and sides to keep small children from interacting too much.



The HO scale modeling materials used for the construction of the diorama were all available through local hobby shops. The source of the turbine is listed below. There are instructions on the use of the casting plaster and terrain application on YouTube (search for Diorama making). There is also information at www.stormthecastle.com.

The solar panel does not function in this project and was placed to illustrate that there could be pedestal mounted solar panels instead of roof mounted ones to make better use of position of panels relative to the arc of the sun.

Materials:

Wind Turbine – (used)

http://www.amazon.com/Solar-Wind-Turbine-Polished-Aluminum/dp/B00149B9BU/ref=sr_1_11?ie=UTF8&s=toys-and-games&qid=1277400437&sr=8-11

Other Wind Turbine (Less Expensive)

http://www.amazon.com/Solar-Wind-Turbine-Desk-Model/dp/B002C4UMMS/ref=sr_1_2?ie=UTF8&s=toys-and-games&qid=1277400277&sr=8-2

Solar Panel

<http://www.harborfreight.com/36-led-solar-security-light-98085.html>



Questions:

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