

## Hackettstown PTA Science Fair - 2017 Middle School S.T.E.A.M. Challenge

# “Hackettstown Off The Grid Challenge”

Imagine that Hackettstown wants to power all essential public services like police, fire, schools, public works, and municipal services without having to rely on the power companies. It will save the town money, make us more reliable during storms, and be better for the environment in general. There are many types of alternative energy sources that don't rely on electricity from the power companies or on fossil fuels. You must research the different forms of alternative energy that are available and make a proposal that meets the following objective.

**Objective:** Propose a town wide design that makes use of any or all types of renewable energy sources that would power essential services, taking Hackettstown off the electricity grid and removing its dependence on fossil fuels.

**Proposal:**

- A drawn map, computer-generated map, or 3-D or computer model of the town, highlighting the areas where you would place the renewable sources of energy. Make sure your map clearly delineates the areas that are being used and the types of renewable energy sources. This may be done on a flat surface, like poster board, no larger than 3'X5', or on a device you provide.
- An analysis of your design that involves any current data on the estimated electricity usage of public services in Hackettstown, how your design would provide the necessary power (include statistics to estimate the amount of power your design would generate), and how your design would minimally impact the environment. When creating your analysis, consider ease of reading for your audience members and judges. \*Use of technology is encouraged, but the Science Fair committee cannot ensure that WIFI will not be overwhelmed, so please make hard copies available.
- Proper MLA citation of any primary sources (interviews, phone calls) and secondary sources (books, websites, articles) is expected.