THE NEED PROJECT
2018 YOUTH ENERGY CONFERENCE
JUNIOR CHALLENGE: GETTING TO ZERO

Name _____

Challenge: Working in your small group, develop a plan to help get your assigned school to Net Zero.

Looking at the information provided in your folder, make recommendations to help get this school to Net Zero. Consider energy conservation (how energy is used by the occupants), energy efficiency measures, and landscaping to reduce the energy use of a building. Consider renewable energy applications to produce the energy you expect the school will use after conservation and efficiency measures have been put into place.

Create a display board to show how you plan to get your school to Net Zero. Your recommendations will be shared with the schools you are researching.

Can't get to Zero? *Every school is different. They are used for different time periods. They serve their communities in different ways. They are in different environments with different amounts of available space. Some schools will be harder to get to net zero than others. Your proposal will primarily be judged on your thoughtful and creative solutions, not making your numbers work out to zero.*

Step 1: Learn about your school

What is the name of the school you are working on?

Where is it located?

What type of environment is your school located in? What is the climate like?

What type of school is it?

Is your school in a densely populated area? How is will affect your Net Zero plan?

Calculate your energy cost per square foot. (Total energy costs in a year/ square footage of the school)

What is it doing well related to energy?

How does your school's energy use compare to the average school?

Step 2: Reducing Energy Usage

Energy Conservation

What will you do to encourage smart energy usage at your school? Specifically think about behaviors, not technology.

How much energy do you think can be saved through conservation? Electricity, Other

Energy Efficiency

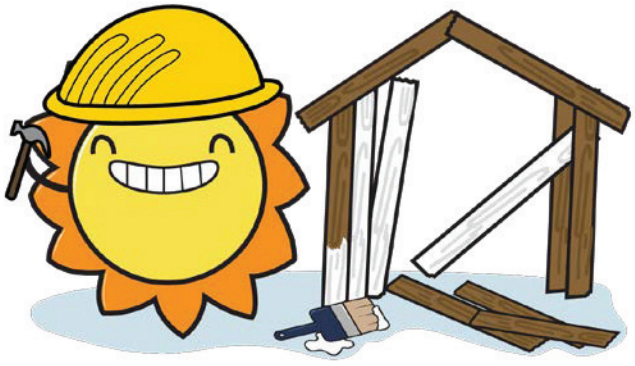
What measures will you implement to increase energy efficiency (and decrease energy usage)?

Lighting:

Heating/Air Conditioning:

Insulation/Building Envelope/Windows:

Landscaping:



Step 3: Renewable Energy

What renewable energy technologies do you propose installing at your school? (see Renewable Energy Options page)

Where do you plan to place your renewable energy? Draw/label on a copy of your map.

How much energy will your installation produce? (provide answer in kWh)

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Renewable Energy Options

Solar

1 kW PV
KWh produced: 6 kWh per day
Space needed: 80 square feet of roof space, unused fields, parking lots

Wind

Option 1: Commercial Scale Wind Turbine
1.5 mW Wind Turbine
KWh Produced: 16,150 kWh per day
Space needed: 40,000 square feet (away from buildings, trees)

Option 2: Small Wind Turbine
10 kW Wind Turbine
KWh Produced: 30 kWh per day
Space needed: 400 square feet (away from buildings, trees, playing fields)

Geothermal

Geothermal Loop Heat Pump for heating and air conditioning
1 Ton of heating/cooling
Interior Space heated/cooled: 450 square feet
Space needed: 1,500 square feet. Space will be dug up but will be restored to useable field space.

Step 4: Develop Your Net Zero Campaign

Develop a name for your Net Zero campaign.

Come up with a slogan you can use to promote your Net Zero campaign at your school.

Draw a logo for your campaign.

How will you let your community members know about your Net Zero campaign?