PRESS THE DOWN ARROW TO MOVE THROUGH THIS PRESENTATION

Eastham Public Library

A LEED CERTIFIED BUILDING

Leadership in Energy and Environmental Design (LEED)

LEED is a green building certification program used Worldwide. Developed by the non-profit U.S. Green Building Council (USGBC) it includes a set of rating systems for the design, construction, operation, and maintenance of green buildings, homes, and neighborhoods that aims to help building owners and operators be environmentally responsible and use resources efficiently.

LEED certified buildings reduce stress on the environment. They are more energy and resource-efficient. They generate less waste and lower the use of energy, water, and other resources. Points can be earned for storage and collection of recyclables, renewable energy use, and indoor water use reduction.

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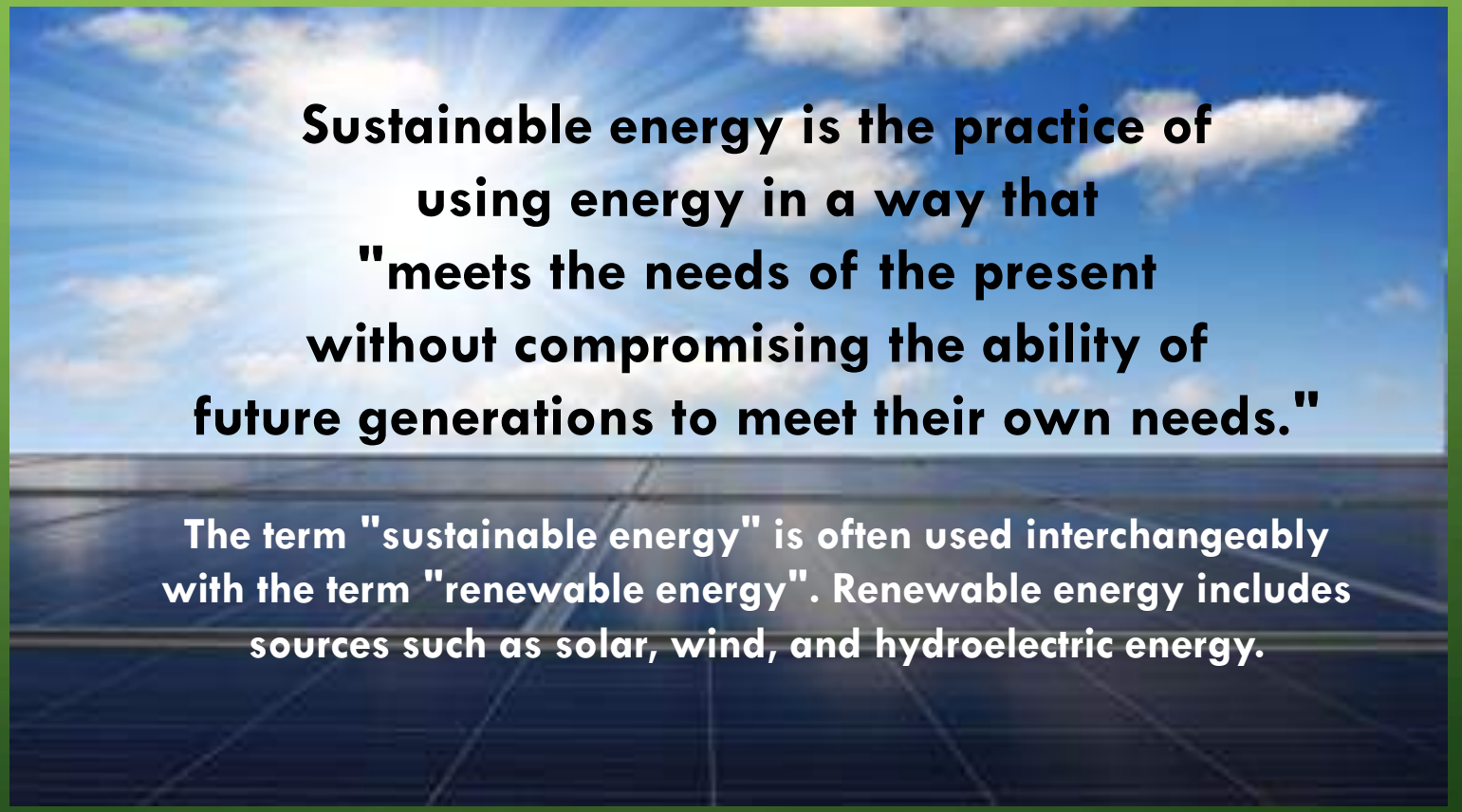
AN ENERGY SUSTAINABLE BUILDING



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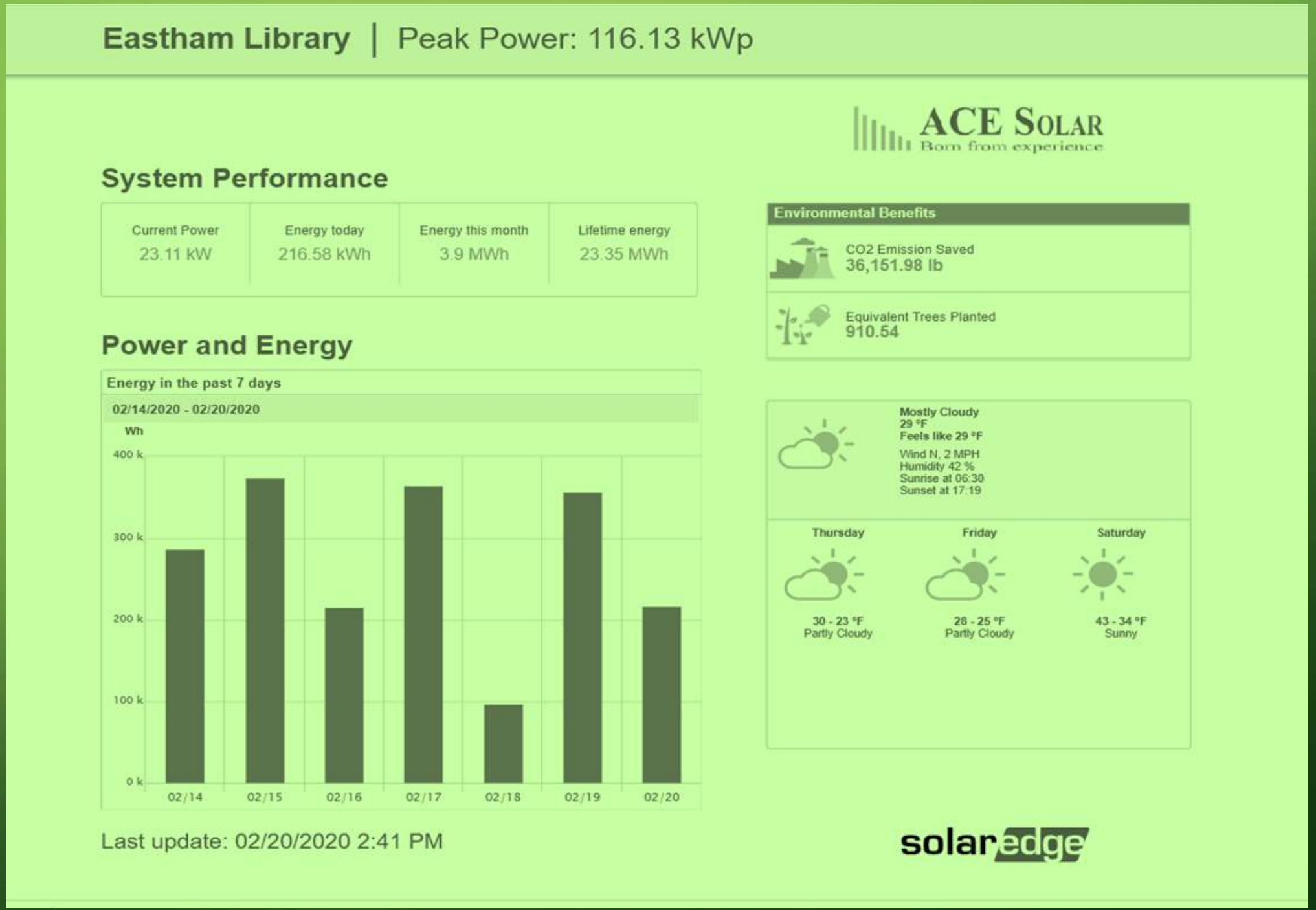
A SOLAR BUILDING

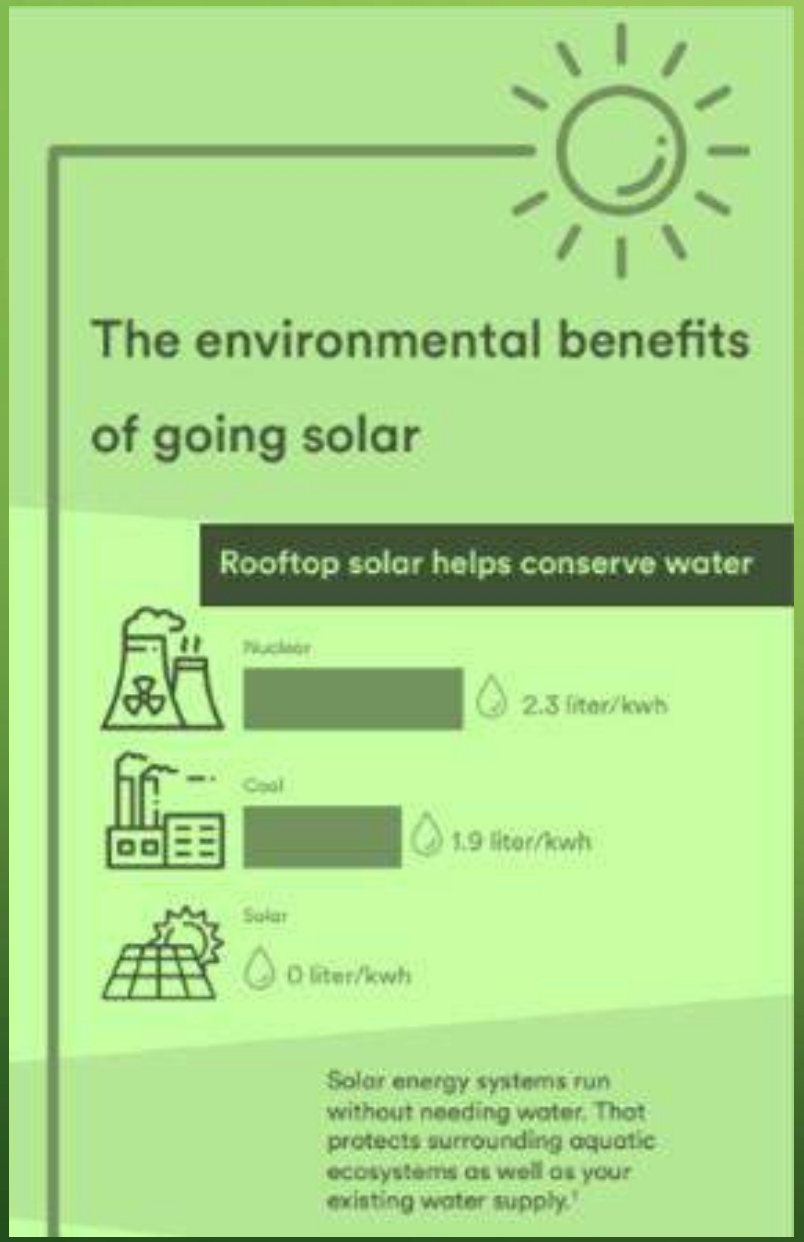
Clicking on the image to the right will open the Eastham Library webpage so that you can see how much electricity is being produced **NOW**.

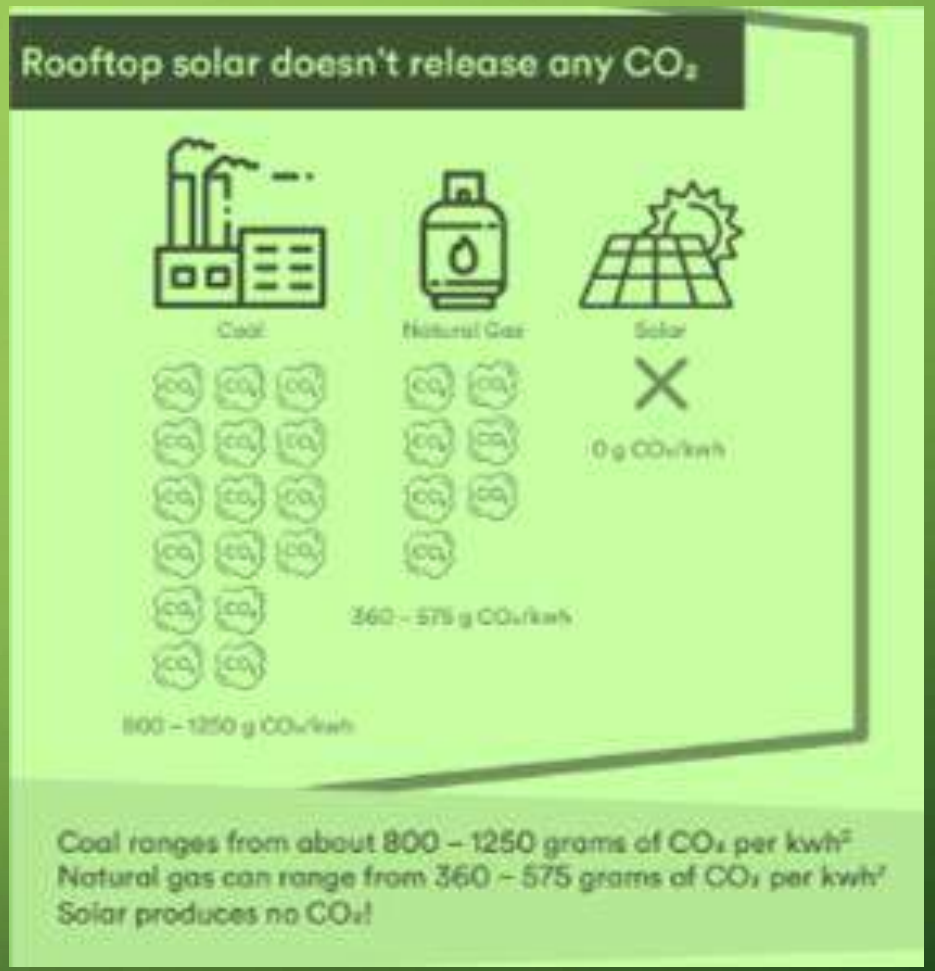
The energy produced by the library's solar panels benefits the Town of Eastham both environmentally and by the reduction in energy costs.

To return to this presentation close the web page.



The Environmental Benefits of Going Solar

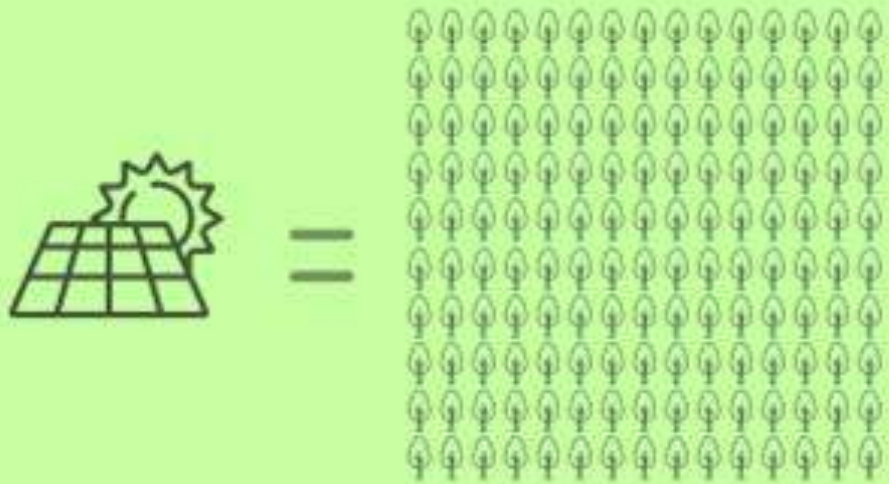




vivint.Solar

The Environmental Benefits of Going Solar

Rooftop solar doesn't pollute our air



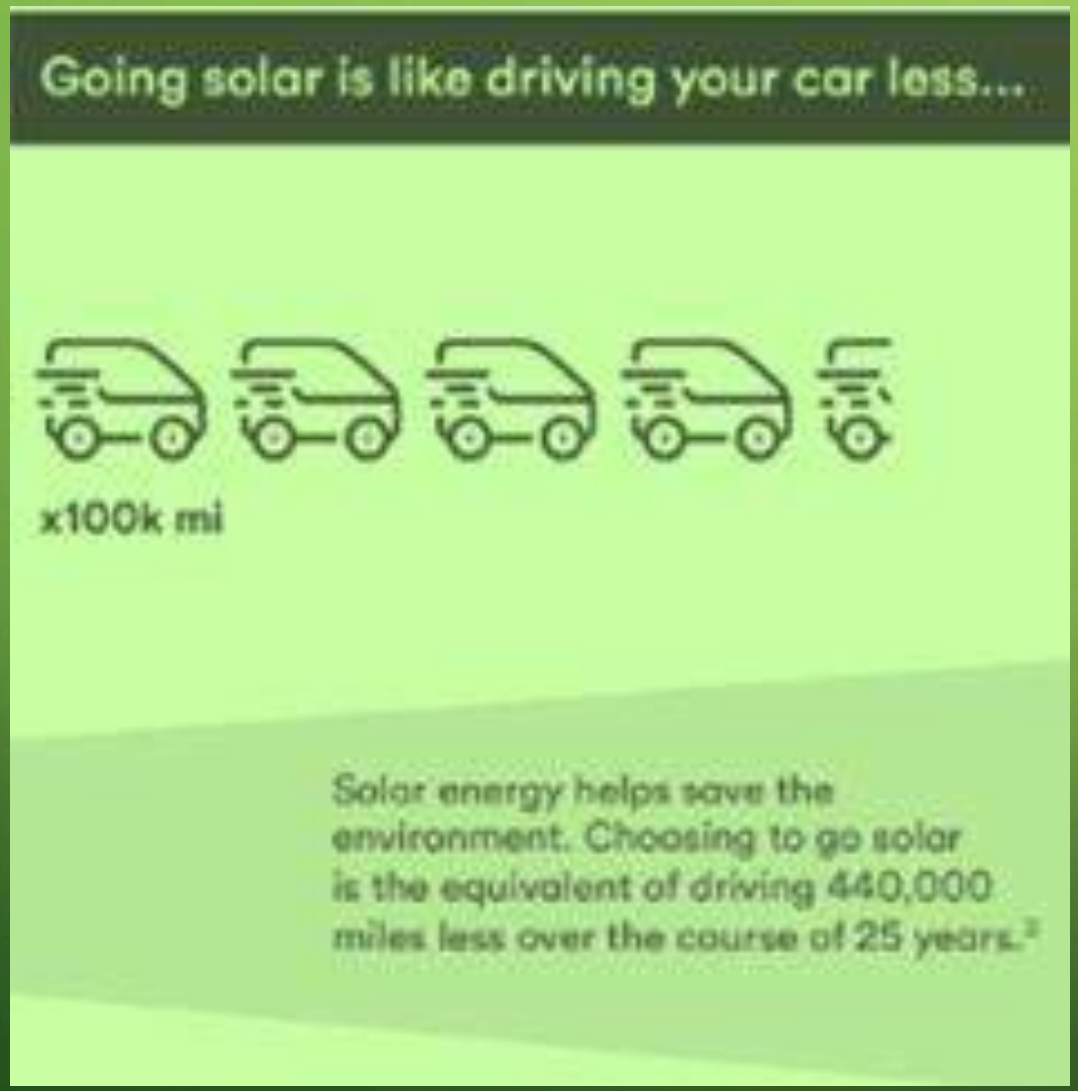
Switching from dirty fossil fuels to clean solar power is equivalent to the effect of planting around 150 trees every year![3]

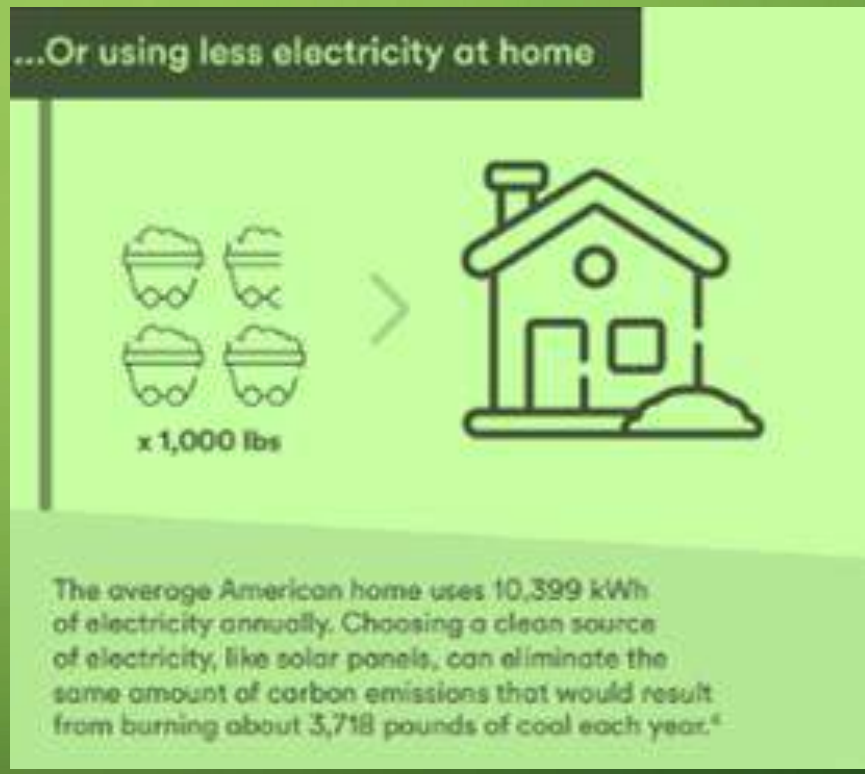
The Power of Sunlight

If we could capture all of the sun's energy shining on the Earth for just one hour, we could power the entire world for one year![5]

vivint.Solar

The Environmental Benefits of Going Solar





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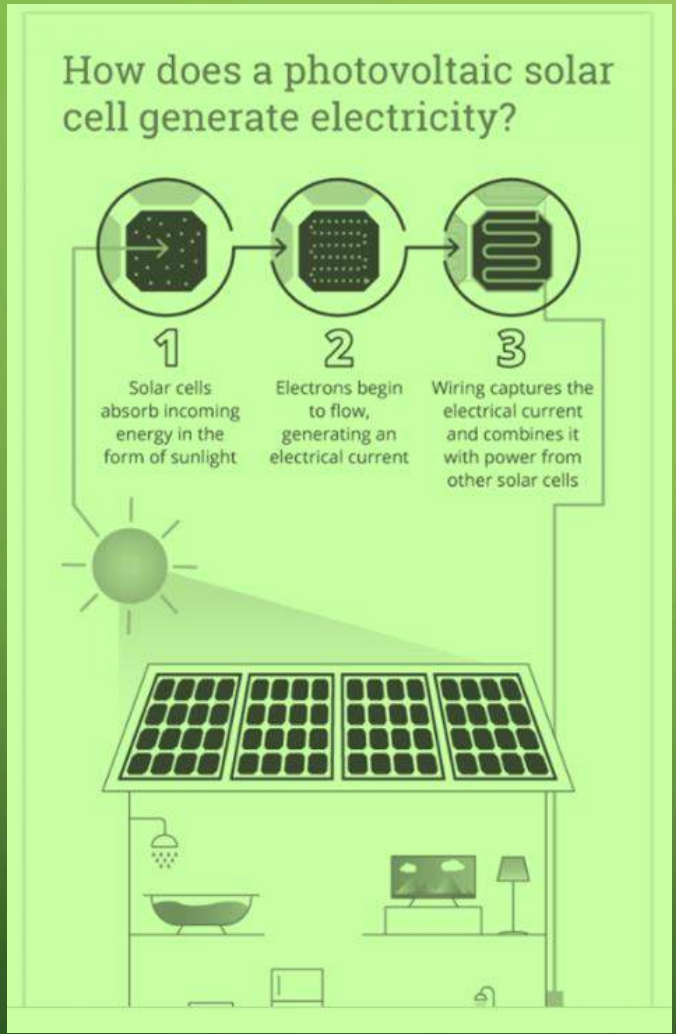

Solar panels work by absorbing sunlight with photovoltaic cells, generating direct current (DC) energy and then converting it to usable alternating current (AC) energy with the help of inverter technology. AC energy then flows through the home's electrical panel and is distributed accordingly. Here are the main steps for how solar panels work for your home:

1. **Photovoltaic cells absorb the sun's energy and convert it to DC electricity**
2. **The solar inverter converts DC electricity from your solar modules to AC electricity, which is used by most home appliances**
3. **Electricity flows through your home, powering electronic devices**
4. **Excess electricity produced by solar panels is fed to the electric grid**

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Benefits of Solar Energy to the Environment and Our Health

ENVIRONMENTAL BENEFITS	HEALTH BENEFITS
1. Prevention of air pollution	1. Breathing cleaner air
2. Climate change mitigation	2. Counteracting the summer heat
3. Preservation of water resources	3. Living in a less polluted environment
4. Conservation of natural resources	

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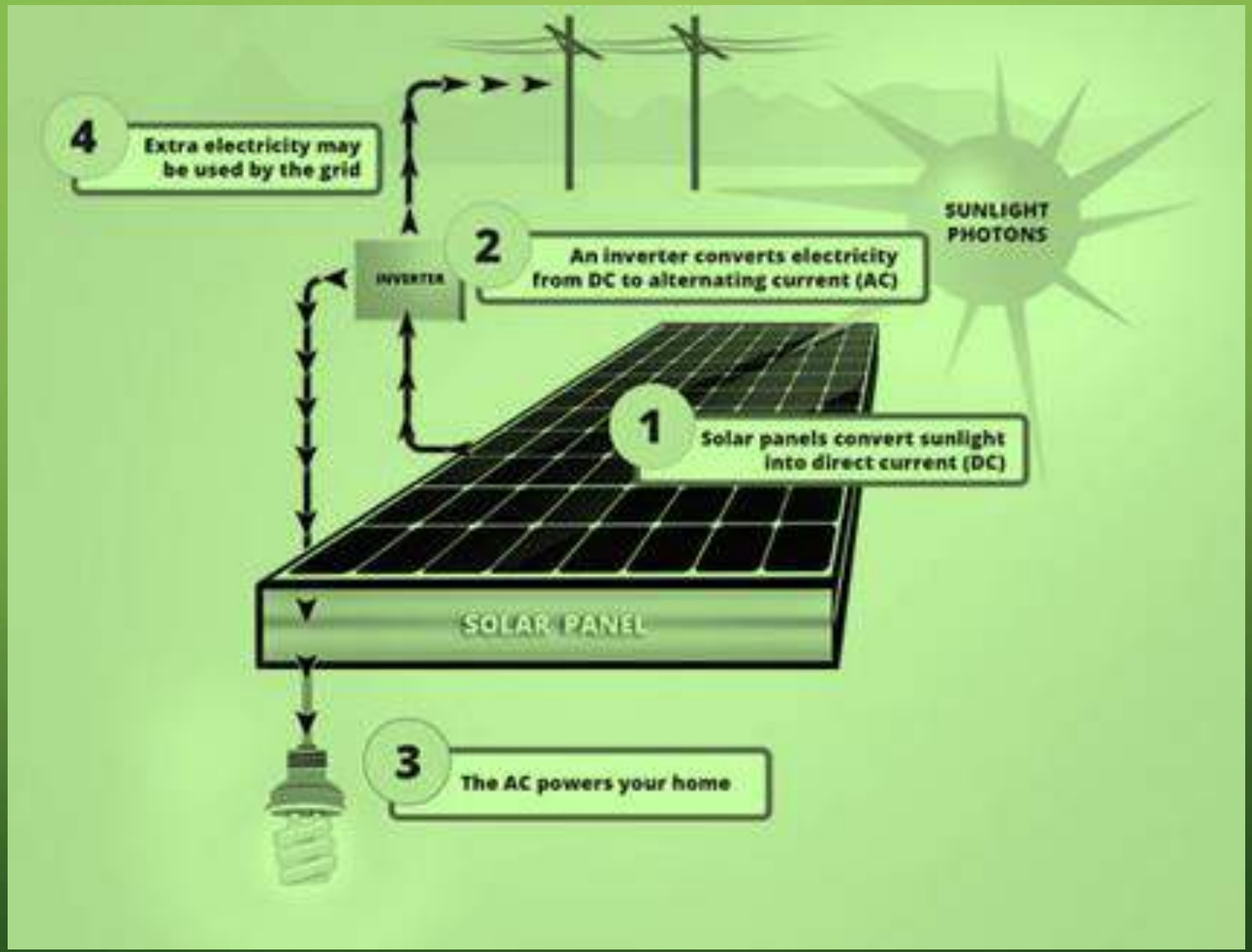

If you would like to watch a one minute video about how solar panels work, click the play button in the middle of the image on the next slide. It will take a moment for the play button to appear.

Pressing “Escape” while watching the video will exit the video and return you to the presentation.

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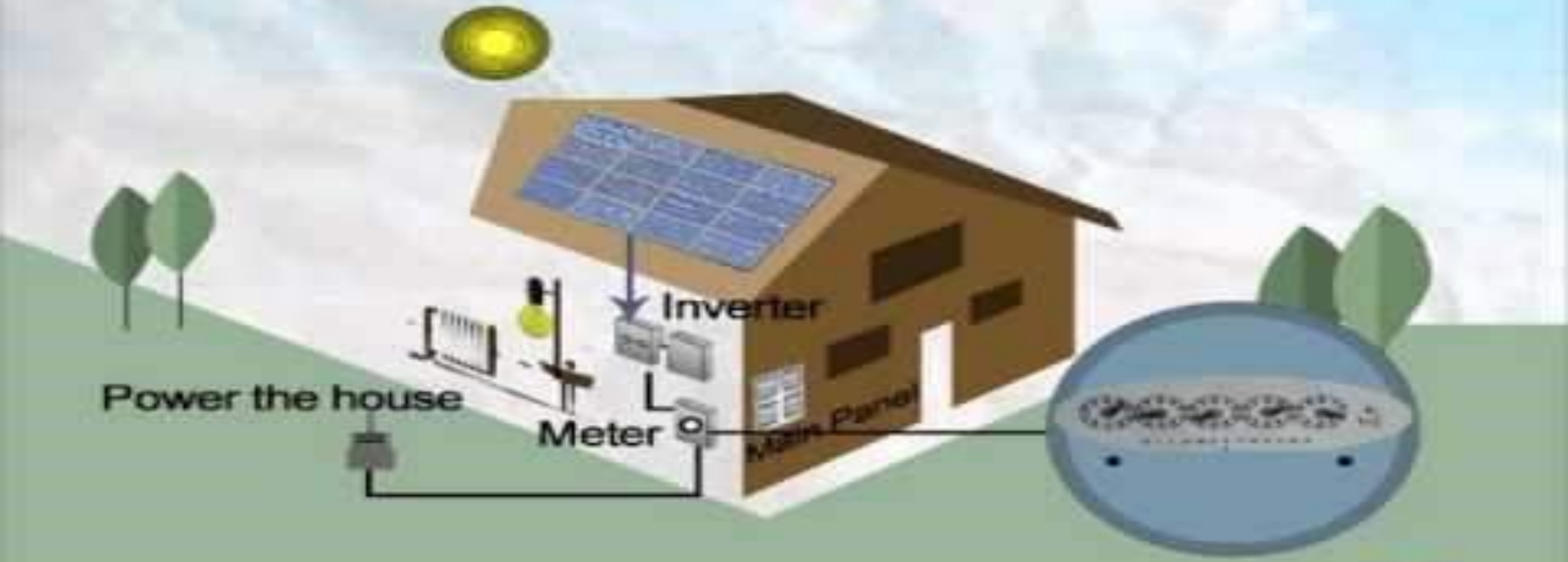
HOW SOLAR WORKS



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A BRIEF HISTORY OF SOLAR CELLS

- 1839: French physicist Alexandre-Edmond Becquerel (father of radioactivity pioneer Henri Becquerel) discovers some metals are photoelectric: they produce electricity when exposed to light.
- 1873: English engineer Willoughby Smith discovers that selenium is a particularly effective photoconductor (it's later used by Chester Carlson in his invention of the photocopier).
- 1905: German-born physicist Albert Einstein figures out the physics of the photoelectric effect, a discovery that eventually earns him a Nobel Prize.
- 1916: American physicist Robert Millikan proves Einstein's theory experimentally.
- 1940: Russell Ohl of Bell Labs accidentally discovers that a doped junction semiconductor will produce an electric current when exposed to light.
- 1954: Bell Labs researchers Daryl Chapin, Calvin Fuller, and Gerald Pearson make the first practical photovoltaic silicon solar cell, which is about 6 percent efficient (a later version manages 11 percent). They announce their invention—initially called the "solar battery"—on April 25.
- 1958: Vanguard, Explorer, and Sputnik space satellites begin using solar cells.
- 1962: 3600 of the Bell solar batteries are used to power Telstar, the pioneering telecommunications satellite.
- 1997: US Federal government announces its Million Solar Roofs initiative—to construct a million solar-powered roofs by 2010.
- 2002: NASA launches its Pathfinder Plus solar plane.
- 2009: Scientists discover that perovskite crystals have great potential as third-generation photovoltaic materials.
- 2014: A collaboration between German and French scientists produces a new record of 46 percent efficiency for a four-junction solar cell.
- 2020: Solar cells are predicted to achieve grid parity (solar-generated electricity you make yourself will be as cheap as power you buy from the grid).

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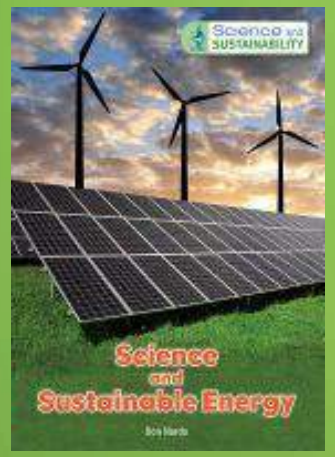
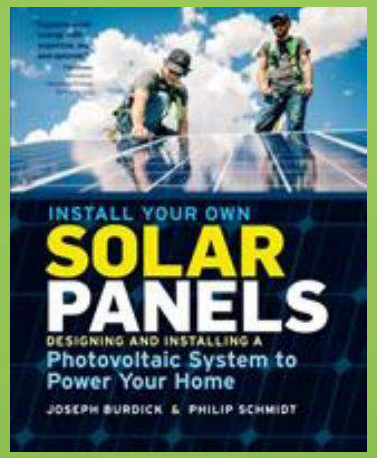
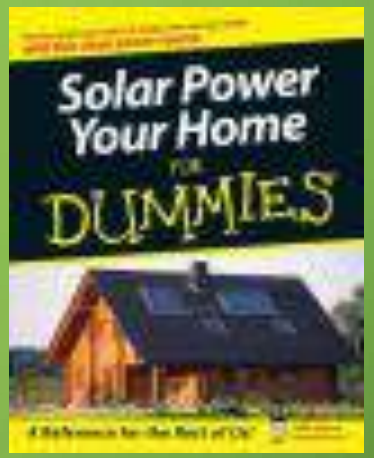


Science and Sustainable Energy
by Nardo, Don, 2018



Install Your Own Solar Panels
by Burdick, Joseph, 2017



Solar power your home for dummies
by Rik DeGunther., 2008

Nick and Tesla's Solar-Powered Showdown…
By Pflugfelder, Bob, 2016

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