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# Solar Energy in Construction

— A Girl Scout Gold Award Project —

**Diana Duckro**

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# Project Description

The goal of my project is to promote solar energy with new housing in the Bellbrook community.

I want to encourage builders, as part of their planning, to provide a solar panel option upon construction.

I am collaborating with Mr. Forrest Greenwood as my project advisor.

I am also collaborating with Mr. John Miller, a Bellbrook resident who is a solar consultant for the company Third Sun Solar.

# Why Solar

<https://ourworldindata.org/energy-mix>

<https://www.energy.gov/eere/solar/how-does-solar-work>

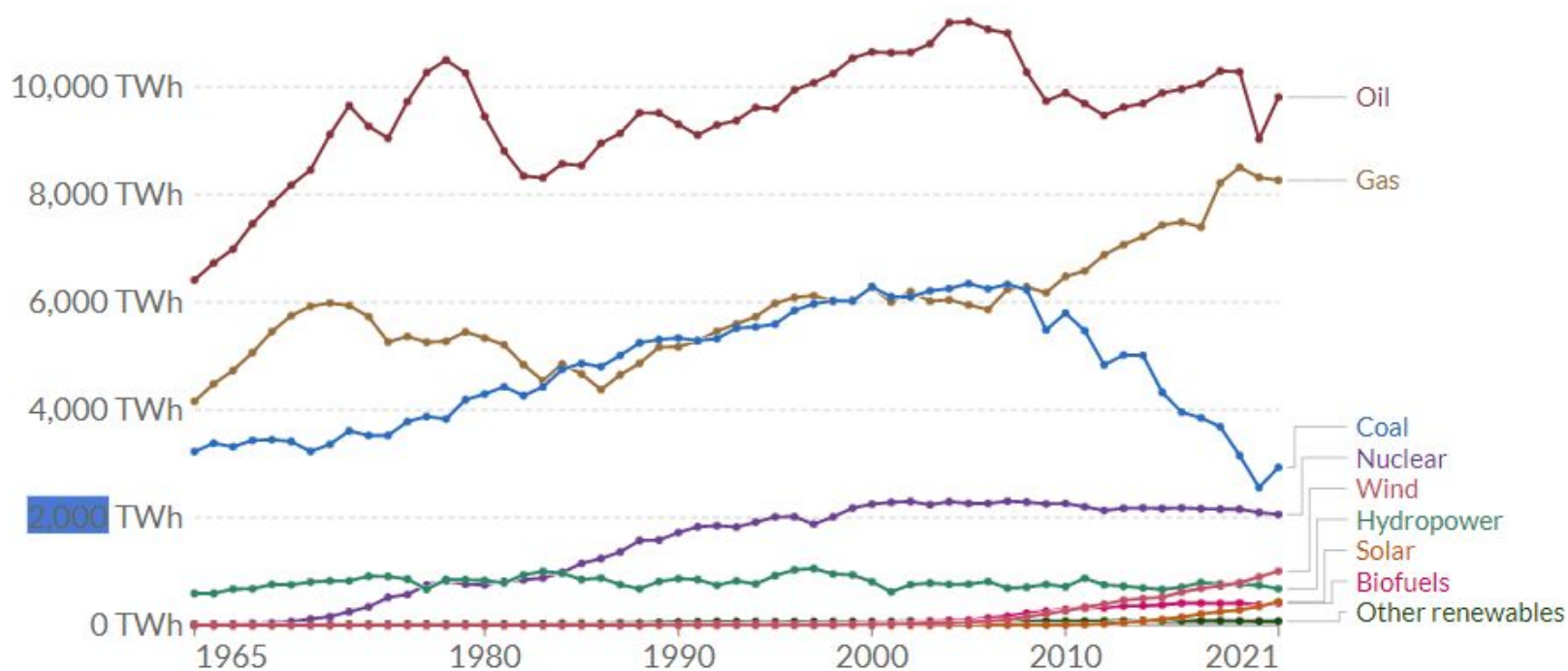
- Solar energy is reliable and provides energy independence...  
*the amount of sunlight that strikes the earth's surface in an hour and a half is enough to handle the entire world's energy consumption for a full year.*
- Solar energy provides clean energy with a lower to no cost over time.
- Solar energy is currently eligible for a 30% tax rebate.
- Solar panels increase home value by 4-5%
- Solar energy is a much more environmentally friendly option, compared to burning fossil fuels which contribute to pollution.
- Globally fossil fuels account for more than 80% of energy consumption, while solar energy is only 1.1% of a total 15.7% from low carbon sources.

## We can have an impact on climate change.

# Primary energy consumption by source, United States

Primary energy is shown based on the 'substitution' method which takes account of inefficiencies in energy production from fossil fuels.

↔ Change country



# How Solar Works

When sunlight hits solar panels, it transforms into electrical energy.

This direct current (DC) electricity is then converted into alternating current (AC) electricity through an inverter matched to your home's utility power.

The net metered credit allows overproduction in the summer to balance with expenses for underproduction in the winter.

Overproduction in the summer also helps to reduce pressure on the electrical grid from overall demand.

With the cost of installation as low as \$25,000, solar panels can recover the investment in as little as 10 years.

## **Solar Installation is Easy**

To start your solar energy journey, all you need is the information from your electric bill about usage over the previous year.

The company completing the installation assigns a project engineer, plus handles the zoning and permits.

## **Solar Installation is Safe**

The inverter includes a rapid shutdown protocol which shuts off power as a safety measure in reaction to other issues possible on the grid.

# Solar in the Bellbrook Community

I want to expand the use of solar energy in my community through new construction, in order to protect our environment by reducing pollution through the use of renewable energy sources.

This will hopefully lead to current homeowners considering solar energy as their power source also.

I need your help to connect with home builders and legislators to develop a plan about solar energy in our community.

Together we can develop a consistent process for home builders to inform new homeowners about options to install solar panels as part of construction, with Third Sun Solar as a potential partner.