

Greening Gas Stations

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Prestene S. Garnenez
Intern, Sandia National Laboratories

Graduate Student, University of California, Los Angeles
Department of Urban Planning

- What does it mean to be Green?
- Can a Gas Station be Green?
- How can a Gas Station be “Green”?



- Image: inconvenientyouth.org

What does it mean to be Green?

- There are no “rules” for being green, particularly gas stations
- Conducting business beyond regulatory requirements
- Commitment to reducing harm to the environment, reducing your “footprint”
- More about what the owner is willing to do

• Photo: giranrobot.com



How can a Gas Station become Green?

- Alternative Fuels/Emissions Reduction
- Energy Efficiency
- Renewable Energy
- Resource Conservation

• Photos: insidesocial.com & posterous.com



- **Biofuels** are cleaner burning and help reduce the release of greenhouse gases (GHGs) into the atmosphere
- **Biodiesel**—produced from agricultural crops such as soybeans or canola but, can also be made from various other oils such as animal fats; contains no petroleum, but can be blended at any level with petroleum diesel to create a biodiesel blend; a blend of 20% biodiesel with 80% petroleum diesel is known as B20.
- **Ethanol**—produced from biomass; a clear, colorless alcohol and is made from starches or sugars found in various agricultural crops, such as corn, barley, and sugar cane; today, a little more than half of the gasoline in the US has some amount of ethanol blended into it; blends are named by their ethanol content; a blend of 90% gasoline and 10% ethanol (by volume) is known as E10



- **Start with an Energy Audit**
 - Contact your local utility company to see if they can help
 - Hiring consultants to help you assess and strategize
- **What are ways you can reduce your energy consumption?**
 - Replacing heating and cooling systems
 - Replacing appliances with more energy efficient products
 - Replacing lighting schemes



- [Photovoltaic \(solar cell\) systems:](#) Solar energy is a truly fascinating way to save money and energy. It can be a reliable and pollution-free producer of electricity.
- [Passive Solar Design:](#) For new gas stations, the building orientation, windows, walls, floors, and landscaping can all be put into service to collect and distribute solar energy as heat in the winter and the same elements act to impede heat from the sun in the summer.
- [Solar Water Heating:](#) For gas stations that may also be travel centers, using the sun to heat water is an exciting way to save and has economic payoff. Solar water heaters are manageable systems to install and maintain.
- [Wind Energy:](#) Producing your own energy can also be done with a small wind energy system.



- **Recycle, Reuse, Reduce**

- A relatively simple way to green a gas station is to provide recycling bins for customers. Plastic bottles, glass bottles, aluminum cans, paper and other plastics are now all recyclable and do not need to end up in a landfill

- **Buy and Sell Locally**

- Look at working with distributing companies that are green also. If possible, consider doing business with local distributing companies to reduce fuel and shipping costs and impacts to the environment. Set up agreements with local farmers or other small local businesses to sell their products or produce in your gas station.



Photo: recycleminnesota.com