

# What You Need To Know About Renewable Energy

## Why should I care how my electricity is generated?

As the leading cause of industrial air pollution in the U.S., electricity production generates approximately:

- 67% of all sulfur dioxide (SO<sub>2</sub>) emissions - an air pollutant that causes acid rain
- 25% of all nitrogen oxides (NO<sub>x</sub>) emissions - an air pollutant that causes ozone (smog)
- 40% of all human-made carbon dioxide (CO<sub>2</sub>) emissions - a greenhouse gas that is the primary contributor to global warming
- 33% of all mercury emissions - a neurotoxin that causes developmental damage to children

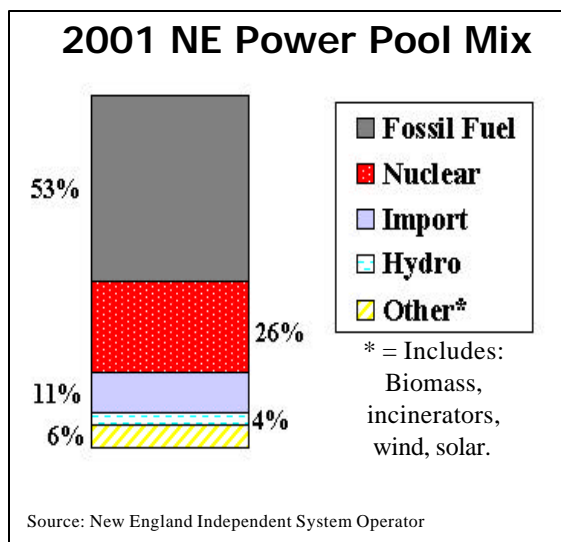


Air pollution is harmful to our health and our environment. The emissions from traditional methods of electricity generation, such as coal and oil, trigger asthma and contribute to other respiratory illnesses as well as contribute significantly to greenhouse gas levels and increase global warming. The American Lung Association reports that air pollution from electricity production costs the nation \$20 billion per year in health care impacts. Generating electricity causes more carbon dioxide air pollution than all the cars and trucks on the road combined.

## Where does the electricity that currently powers my home come from?

The electricity that arrives at your home comes from many electricity generating facilities throughout New England. Think of several streams feeding into a pond from which you draw your water. The several streams are different

generating plants delivering power to the pond, or "power pool". Just as one stream might be clean and another polluted, different generating facilities use different fuels and technologies to make electricity that have different health and environmental effects. Like a pipe coming from this common pool, power lines transmit a power mix to your home.



In 2001, the New England power mix was made up of primarily fossil fuel and nuclear power plants. This is harmful because fossil fuel plants contribute to air pollution and nuclear plants leave behind hazardous waste. By using renewable energy, as well as implementing energy efficiency and conservation, you work immediately to improve the environment for you, your children, and future generations.

## What is renewable energy?

*Renewable energy* resources - such as wind and solar energy - are constantly replenishing themselves, do not cause the buildup up global warming gases and, if properly managed, will be around to serve our energy needs forever. Fossil fuels - such as coal, oil, and natural gas - are *nonrenewable*, that is, they draw on limited resources that will dwindle, becoming too expensive or too environmentally damaging to extract. The US currently relies heavily on coal, oil, and natural gas for its energy.

## What energy generating technologies are considered renewable?

**WIND** energy converts the power available in moving air into electricity through the use of turbines. Wind power does not produce air emissions, generate solid waste, or use water.

**SOLAR** power captures the heat and light of the sun to generate electricity. Solar energy does not produce air emissions, generate solid waste, or use water.

**GEOTHERMAL** energy uses heat from inside the earth to make clean power.

**HYDROELECTRIC** power captures the energy in falling water. It does not produce emissions or solid waste, but can have a negative impact on the environment, depending on the site and size.

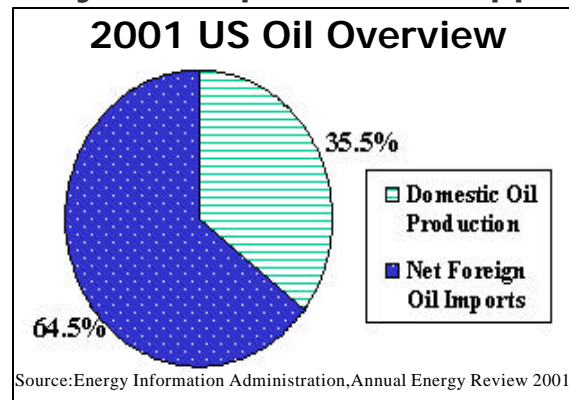
Negative impacts can include: affecting fish migration patterns, changes in the natural characteristics of a river ecosystem, and riverbank erosion.

**BIOMASS** technologies are not always considered renewable or clean; it is important to know what type of biomass is being used. 1.) Clean/renewable: Employs sustainably harvested crops and trees specifically grown as fuel sources or 2.) Other: Converts waste products from agricultural crops, forestlands, and municipal solid wastes into liquid and gas fuels for heat or electricity generation.

**FUEL CELLS** produce electricity directly from the electrochemical reaction between hydrogen (from a hydrogen-containing fuel) and oxygen in the air. The process creates little or no emissions because no burning or combustion takes place. The only byproducts from the electrochemical reaction are water and heat. This technology can be truly renewable if the process used to create hydrogen comes from a renewable source, such as solar. Currently, hydrogen is often created by using natural gas, a fossil fuel that contributes to health and environmental problems.



## Why is it important to support renewable energy now?



After the oil supply disruptions of the early 1970's, the US has increased its dependence on foreign oil supplies instead of decreasing it. The United States' energy needs are expected to grow by 33 percent during the next 20 years. Currently, the US imports more than 50 percent of its oil, up from 34 percent in 1973. Dependence on oil from unstable countries puts the US in a unsafe position. Focusing our policies on traditional energy technologies leaves our big power plants vulnerable to attacks, while renewable technologies can be distributed throughout communities.

## What can I do to support renewable electricity in Connecticut?

There are four primary actions you should consider taking: **1.) Be politically active on the issue:** Politicians at every level in Connecticut – Governor Rowland, state legislators, Mayors, Aldermen – have opportunities to advance renewable energy. It is important that you, as their constituent, contact them and educate them on the issue of promoting renewable energy while telling them why it is important to you. **2.) Energy efficiency and conservation:** Taking action to reduce your energy consumption through efficiency and conservation will not only reduce your monthly bill but it will require less energy to be generated on your behalf thereby reducing greenhouse gas emissions. The savings from energy efficiency and conservation can be used to pay the premium cost for green power. **3.) Become an educator-raise awareness:** Now that you know about the importance of renewable energy, share it with your friends, family, neighbors, and coworkers! Call Clean Water Action (860-232-6232) if you are interested in setting up a meeting and doing a presentation to your contacts, such as family, friends, neighbors, coworkers. **4.) Purchase green tags (“tradable renewable credits”):** Green tags are certificates attesting that renewable electricity has been generated on your behalf. When you buy tags, you in effect force a “traditional” fossil fuel generator to cut back their electricity production. For companies that sell green tags that are Green-e certified, go to the Green-e website ([http://green-e.org/your\\_e\\_choices/trcs.html](http://green-e.org/your_e_choices/trcs.html)).

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[www.cleanwateraction.org/ct](http://www.cleanwateraction.org/ct)

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