

What is “Sustainable Energy”?

Sustainable Energy means energy sources that will allow the Earth to sustain balanced, healthy ecosystems and human life.

Fossil fuels – coal, oil and gas – are not sustainable energy sources because when we burn them to create energy, they create massive levels of greenhouse gases, which result in human impact on the global climate. That impact is creating an imbalance in the Earth’s climate that is already impacting human life all over the world, as well as oceans, freshwater supplies, forests, homes, and many other species as well.

When we say *sustainable energy*, we are referring to solar energy (solar panels and photovoltaic windows), wind energy (wind turbines/wind farms), some forms of water (hydro) power, and some biomass fuels.

In terms of hydro power, we do not promote the use of dams (large-scale hydro power) because they disrupt the natural flow of waterways and fish migrations. There are other forms of water power being developed over the last several years (like *micro-hydro* power) that use hydro power but are not disruptive to the natural environment. Those are the technologies we consider *sustainable energy*.

In terms of biomass fuels (fuels made from natural non-fossil fuel materials such as corn), this may be a sustainable alternative, or at least an interim alternative, but it is not absolutely sustainable. There are several reasons for this. In the case of corn for example, the Earth would have to produce so much corn for fuel (called *ethanol*), that

- (1) a tremendous amount of energy would have to be used to produce that corn;
- (2) the amount of corn needed to create the fuel would encourage the growing of genetically modified corn, a manufactured strain of corn which has the potential to wipe out all naturally growing strains of corn. Having eradicated all natural strains of corn, the ‘gmo’ corn could ultimately be attacked. No longer having diversity in strains of corn, the gmo corn strains could eventually be wiped out as well;
- (3) the amount of land needed for growing so much corn for fuel could endanger more forest land. Forests are extremely important for holding moisture close to the Earth and thus cooling the surface temperature of the Earth. Deforestation in the U.S. and around the world is already contributing greatly to global climate change.

It’s possible that if there are enough different kinds of biomass fuels, together with the other forms of sustainable energy, they may be used sustainably. All these forms of sustainable energy, together with energy efficiency, go a long way to solving the problem of greenhouse gas emissions.

At present, hybrid-electric cars, which run on a combination of gas and electricity produced by the combustion engine in the car itself, are a very good option. They get great gas mileage so they use a lot less gas, and they emit much less CO₂ in the process.

Where we live in Washington State, we pay a little extra each month on our energy bill so that some sustainable or “green” power is added to our power grid. Sustainable energy sources cost more at present because they are not enjoying the large federal subsidies (our tax dollars) that are flowing to non-sustainable energy industries. Thus, they are not able to be as

competitive in the energy market. However, we can help them by paying a little extra and helping enter the mainstream energy market. It may also be possible to get tax breaks for putting solar panels (photovoltaics) in our homes and businesses.

Here's a website we found with a good article on photovoltaics:

<http://www.taunton.com/finehomebuilding/pages/h00114.asp>.

Another energy source that produces only a small amount of greenhouse gases, but is not not considered a *sustainable energy* source is nuclear power. You'll notice we don't mention nuclear power in *Penguins on Thin Ice*. There are many problems with nuclear power:

(1) There is no good place to store the masses of spent fuel rods, which will be radioactive for hundreds of thousands of years. An energy source that leaves a byproduct so toxic cannot be considered sustainable. No matter what we do with them, we don't really know what the impact might be. This is not something we want to leave for our children to deal with.

(2) Nuclear power plants are extremely expensive to run, and have had to receive huge amounts of federal subsidies in order to operate.

(3) Nuclear power plants create serious security risks in the U.S. Nuclear materials that can be used for power plants can also be used to make nuclear weapons, making nuclear facilities in other countries potential security risks for us as well.

What is "Sustainable Development"?

Sustainable Development is an approach to the continued economic development of the world which balances equally the *three pillars of sustainability*. These three pillars are (1) Social (meaning people), (2) Environmental, and (3) Economic. With sustainable development, global development must equally consider the impacts of development on all three pillars. It must consider the well-being of all people – our jobs, health, and overall quality of life. It must consider the impacts of development on our ecosystems, which again relates to human health and well-being. And it must consider both the economic advantages and costs of development, including processes to help bridge the large gaps in the economic status of people in all the world's communities. It is a very high goal, but powerful multinational corporate interests use their power to influence governments and slow progress.

Where money is concerned, people often become very short-sighted. Sustainable Development, of which Sustainable Energy is a major part, are intended to help us, through solutions-based approaches, to shift our thinking from short-term gain (with negative long-term results) to long-term gain that can begin working for us now. It is an attempt to create a new 'bottom line', in which *value* can be seen in the long-term, and in which human well-being at present and generations into the future are calculated, along with corporate and governmental economic figures, into the bottom line.

In a sustainable world society, the social, economic and environmental dimensions of sustainable development would be integrated into policy-making at international, regional and national levels.