

FREQUENTLY ASKED QUESTIONS

Q: [What is solar power?](#)

A: The use of the sun to generate either heat and/or electricity by virtue of its rays, and to turn turbine blades by wind which is the difference in air pressure caused by the sun heating the atmosphere.

Q: [What benefits does earth covering a structure have?](#)

A: Insulating the structure, and providing a "flywheel effect" where the greatest heating or cooling loads are delayed by about 3 months due to the thick blanket of earth covering the structure. Earth-sheltered homes are quieter, stronger, generally brighter, and owners receive insurance breaks because the homes are mostly of concrete.

Q: [Where do I begin if I want to be an energy-efficient consumer? Where can I find information about renewable energy?](#)

A: READ! Contact Green Energy of Ohio, get books and magazines on alternate energy, and search the web. The more you know, the more you can decide what might be right for you.

Q: [Does the wind turbine interfere with television reception?](#)

A: No. The blades are made of pultruded fiberglass (3x stronger than steel) and they have no effect on TV reception.

Q: [What is the most common problem with using solar energy?](#)

A: Trying to use alternate fuels on a very energy-wasteful structure. First, conserve in as many ways as you can and then start with small systems to see what effect they have. Ideally, you'd want to reduce your energy use as much as possible with efficient building and appliances, THEN consider alternate fuels.

Q: [What does photovoltaic mean?](#)

A: Electricity from light. Simple as that.

Q: [Is alternate energy expensive?](#)

A: Depends. It can be if you try to use it on energy-wasteful structures. But if you can reduce energy demands, then even small systems can make a contribution. Alternative fuels ARE more expensive than conventional fuels. That's why it's critical to make their contribution count as much as possible.

Q: [How high does a wind tower have to be in order to be useful?](#)

A: Generally, the turbine itself should be at least 30 feet higher than any surrounding structure. For every 50 feet of height, the wind speed increases from .5 to 1 mph. An area should have at least a 6 MPH avg annual wind speed to be productive. In our area, we have a 11.4 MPH avg speed, so we will do quite well.

Q: [How fast does a wind turbine spin?](#)

A: In our case, the Bergey wind turbine that we're going to use spins from 0-390 RPM. At 390 RPM, the rated power is achieved. As a note, this is roughly half of what competitor's machines spin to output their rated power.

Q: [Is a house built under earth dark and damp?](#)

A: On the contrary. Properly built earth-sheltered homes are bright, cheery, warm, and quiet. When owners, however, don't pay attention to critical building details like waterproofing, siting, humidity, and fresh air exchange, then yes, they can be uncomfortable.

Q: [What kind of materials go into a house built under ground?](#)

A: Usually a lot of concrete, structural steel, sometimes heavy timber, and a lot of reinforcing steel. Excellent waterproofing and drainage materials are a must. Above ground, they're no different than conventional homes.

Q: [What alternate energies go into a house like Solterra?](#)

A: As mentioned on the other pages of our website, we wanted to build a super-insulated and efficient structure so that we could incorporate as many alternative fuels as possible in small sizes so that together, they could contribute a great portion of our heat and power. So we've made use of solar thermal, wind, photovoltaic, geothermal, passive solar, and a Trombe wall. About the only source we couldn't make use of is water, since we have no streams or artesian wells.

Q: [How does a windmill get power into a house?](#)

A: The power generated from a wind turbine is not compatible with utility power that we normally use. So the power that comes from the turbine has to be changed or "inverted" into the 120 volt, 60 cycle power that we're all familiar with. Then a connection is made from the inverter to the main breaker box to a dedicated circuit breaker for the turbine.

Q: [Does the excess power generated from the photovoltaic array and the wind turbine get used by your local utility? If so, how?](#)

A: Yes, Ohio and 38 other states have "net metering" laws which require the local utility to offer co-generation rates to those who want to generate their own power according to prescribed standards. Your KWH meter turns both directions. If you're generating more than you're using, then your meter runs backwards. Then, at the end of the month, if you have generated more power than what you've used, the utility pays you for that excess power.

Q: [Why did you build solterra in a development instead of in a more isolated area out in the country?](#)

A: That's a long story, I've redesigned this house 4 times as a result of personal life changes and it just worked out that this 2-acre lot is where Solterra is finally going to be built. The point is that when engineered and designed properly, earth-sheltered homes can fit anywhere. It just takes some ingenuity and creativity.