

WIND ENERGY FACTS ABOUT WIND POWERED GENERATORS

Here are some facts and easy to understand direct physics and NASA data Examining a Wind Energy Study

This study is about Exploring the concept of wind powered generators. Multi-bladed. Low wind capacity. As opposed to 3 bladed wind foil gigantic monsters.

A Farmer's windmill

Many years ago, farmers built windmills. As we all know, farmers are extraordinarily gifted in the arts of "do it yourself," and "make it work." They are personally driven by production. They built windmills to lift water out of the ground for their cattle and for irrigation. They did not use silly, three bladed, passively turning windmills. They did build multibladed windmills which aggressively captured the wind and aggressively converted the wind to torque energy. And did you notice, by their folding design, when they were hit by hurricane winds they automatically folded out of the wind, and automatically unfolded when the extreme winds subsided? Mechanical automation without computers to reboot, and without electronics to short out. And NO silly three bladed things. Smart farmers.

Maybe we should have real farmers in charge of government spending? Less silly three bladed wind turbines.

The farmer needed power to lift water, a long way up from a well, consistently for their cattle or irrigation. Water weighs a lot. Just lift a gallon of water and see what it weighs. Consider lifting all of the water in a well pipe 50 feet up inside of that well pipe. There was a steel rod transversing all of that distance to lift the water, so to the weight of all that water add the weight of the steel lifting rod. That is a lot of weight. The farmer needed enough power to lift the entire length of that water. Yes, the entire weight every time. The water valve is at the bottom of the pipe, down in the water. And NO they did not set the valve 32 feet up, because the seal might not hold. (And YES they could pull a lever at the bottom of the tower, or use a float valve, which released the mechanical lifting of the water when they had enough for their cattle. And YES they had a lever to pull which disengaged other parts for maintenance, even when the windmill was turning. And YES the design would automatically fold itself out of the wind when hit by hurricane

winds, and automatically reset itself when the extreme winds subsided. And all of this with NO electronics to go bad, and NO computer controls to have to reboot, etc.) Smart farmers. So, as we were saying, they needed a lot of power, every time that the well pump shaft was lifted by the windmill.

Now, think about this. How many times have you seen three bladed windmills out west, where the water table is a long way down? Never. You never saw that. You always saw multibladed windmills. Never 3 bladed ones.

Many Years of Wind Mill Experience

Now, think about this. Wilber and Orville Wright invented the airplane in 1903. There was publicity about that at the time. There were other people trying to utilize the Wright Brothers' designs for wing shapes for themselves after that.

1903- That's over 100 years ago.

Lots of people doing lots of thinking for over 100 years. But, no airplane wing windmills EVER became popular with the farmers. Nope. None. Did not happen. You go look again at the windmills out west pumping water. No airfoils using passive air lift. Not for the farmer. Remember the farmer needs power to help on his farm. He is not some silly teenager buying the latest fad advertised at the mall. He demands production. He demands power. He builds a windmill to work. You say, "But that is not the way it is done"

All of the other lemmings are building airfoil 'wind turbines.' The blades 'fly' and there are 'turbulent slipstreams.' Oh, no! Do not make me think!" Go talk to the average farmer today. Today's farmer, with his Global Positioning System on his big turbocharged Electronically Fuel Injected tractor, and ask a farmer what he thinks about the three bladed "wind turbines." Go. Ask. He will probably smile and be nice to you. But when you ask him why he does not invest in them, he will probably simply get back on his state-of-the-art, GPS equipped, self-navigating, air-conditioned tractor and go back to plowing, thinking that you are some city-slicker idiot that will never learn.

Farmers are probably a lot smarter than the average big city lawyer. Lots of farmers these days have a four year college degree in agriculture, which means that they study a lot about their business. A lot. And to top it off, they have direct, hands on experience with an extraordinary range of electrical and mechanical equipment. A farmer using a windmill to pump water is wise. The rest of the U.S. should learn from them.

Before your irritation at a blatant disregard for current standards and engineering expertise and even government spending get you upset, think about it. Energy for Household Power

We estimate that the average needs about 12kw for average daily use. We looked on the net and found a range of 10kw "wind turbines" which require a "startup" wind speed from 22.5 mph to 31 mph. (Oh, and by the way, they seem to have changed their advertised startup speed since we began telling the world of our low wind speed startup design.) That is a lot of wind. Are you willing to wait for a tornado to go past your house for the "wind turbine" to work? Probably not.

Can you afford even one of the homeowner sized three bladed, airfoil imitating, "wind turbines" like your tax dollars are being wasted upon? Waiting for that rare blast of wind might be a silly investment. So, it is probably not in your current budget.

OK, so what do you do? You think like a farmer. Remember, farmers are smart. Get yourself a multibladed wind powered generator. Get a bumper sticker that says, "Think like a farmer." Remember, just because the other lemmings are dashing into the sea does not mean that there is any true logic to three bladed "wind turbines." Whatever it takes, get your head straight. Think.

Not enough logic?

Really?

You say, "But the engineers . . ."

Wind Powered Generators Archimedes, Levers, Torque
Archimedes, about 287-212 BC said about the use of a lever,
"Give me a place to stand on, and I will move the Earth."

And guess what, a blade on a windmill, or on a wind powered generator, or even on a "wind turbine," is a lever. Remember that Physics class that you took, where you should have learned more. Here is a refresher: $(\text{force}) \times (\text{distance}) = \text{torque}$. So, if you want a lot of power from your "wind turbine," it is a good idea to make the blades capture lots of wind. Got it? You want a lot of the force to be directly on the blades, not wasted in aerodynamic "lift." Got that? And, you want to capture most of the wind passing through the blade area. See? That was not so difficult to understand. Think about what you have seen. Farmers need mechanical power. Multi-bladed

Windmills produce lots of power. Three bladed, aerodynamically "lifted" "wind turbines" do not produce much power. The laws of physics are not wrong. Wind Powered Generators, based upon the laws of physics are the best way to go.

A blade that is wide at the furthest part away from the hub should give better torque and thus more power.

A blade that is wide close to the hub and skinny way out from the hub is exactly backward. That is an idiotic way to design them (unless you don't want them to work??? If they worked then the need for oil and gas might seriously diminish. Now who would benefit from shoving non-efficient silly three bladed wind turbines down the public's throat? Hmmm?). Think. Think. Think. Look at the blades on this link: "wind turbines," and here; silly of them to ignore simple physics like that. Think.

You have seen "wind turbines." Something is definitely not right about them. Wind Energy Physics

Think. Use your own brain. Do not be afraid to think. Something is not right with those "wind turbines." Look at them again. They are just not right. Archimedes was not wrong about levers. Farmers are not wrong about pumping water with windmills. Physics 101, where you should have studied, was not wrong about force x distance. Those "wind turbines" are just plain idiotic. Think. For yourself, think.

Take a piece of paper. Go ahead. Hold two corresponding corners in your hands, make that section flat and horizontal, and blow across the top surface. Sometimes, the back of the sheet rises, if you blow hard enough, and get the air flow in exactly the right place. It is called "Lift." Now take the same piece of paper and hold a large width of both ends and blow directly onto the middle, with the same amount of air. Yeeooow! What a discovery! You do not need an engineering degree and calculus to see that direct air pressure against the side of a flat surface produces far more force than over the edge with "lift." "Wind turbines" work on lift. Windmills work on air flow pressure. Lift vs. direct flowing air pressure? You have no excuse for thinking that "wind turbines" work well now. Physics does not lie. That paper in your hand did not lie. That was a pretty simple example. Those farmers' windmills were built right. Think for yourself. Wind Energy Common Sense

You tell your children to think for themselves. You tell them of examples of people that did not think for themselves. There is even a famous tale of an emperor, being duped by lies, when he did not think for himself. Remember when you were young and your parent's read you the story of The Emperor's New Clothes? Think about it. Think for yourself. Look around you and observe reality for yourself. "Wind turbines," as they are now, are like the Emperor's New Clothes. A little child, being innocent of the vanity of adults, simply asked "Why is the Emperor not wearing any clothes," and the truth was set free. Think.

. . ."But the blades fly". . . "But turbulent slipstreams". . . " But, but, but, everyone KNOWS that 3 blades are best because you do not want too much power.". . . "And the Emperor really WAS wearing new clothes". . .

Obviously this was not written for idiots. If you feel like a lemming, and want to dash into the sea; well, don't. Lemmings do not always dash into the sea. You can think for yourself. You can read the links that we give for physics and NASA information and you can see the facts for yourself.

Wind Energy= Natural Energy

Look at solar and find that the solar panels created such a tiny trickle of power that they were actually a waste of space. Thousands of dollars to trickle charge a few batteries? No way. Not with our money.

We looked at water power from streams and rivers and found a huge amount of potential energy there. But, not many people have fast flowing streams available on their property.

Look at wind power and you'll find vast and renewable resources of energy there. Look at wind turbines and you'll find the 3 bladed ones to be idiotic in design. Look at the old farmer's windmills and consider them to be extremely logical in design, extraordinarily aggressive in capturing wind energy, and phenomenally safe for birds.

We compared the calculated wind energy capturing capacity of our Wind Powered Generators (per kilowatt rating) with the calculated "airfoil lift" wind turbines and found that our Wind Powered Generators have a calculated Kilowatt-Hour return of more than 4 times that of the "airfoil lift" wind turbines.

Wind Energy and NASA

We looked at wind powered energy sources and quickly found that they were not well designed. The commercially produced wind powered energy sources were incredibly inefficient. But, in their inefficiency, they were more efficient than the solar panels. Thus, we decided to analyze them and potentially build our own. We looked at the parts for wind power sources and studied each part incrementally. This has taken us a few months, about a year now. An airfoil [or here] on edge, in a steady stream of air, does create lift. Albeit, very little lift unless there is a lot of air flow, but lift none the less, and measured in joules of energy per volume of air flow, it is very little. A flat plate, perpendicular to a steady stream of air, has the maximum mechanical advantage, and has far greater joules or energy per volume of air flow. But, we do not want to totally blow away our wind powered generator by making it flat to the wind, so we set the flat plate on a 45 degree angle. Maximum force perpendicular to the direction of the wind. And that force is against the blades of the wind powered generator to make it turn! Yes, there is drag. But drag, in this case, is transferred to the mechanical structure of the wind powered generator. Maximum turning force. Maximum torque on the shaft that turns the wind powered generator.

Having difficulty envisioning this?

Look at the NASA example of a kite. Click on "select view" then "side" then Click on "Trim." Adjust the "B-Bridle" and the "K-Knot" until the "lift" is maximized. It is a simple visual representation, but it gets the point across. More information from NASA at "Kindergarten through 12th grade" explanations: Kites, and general Aerodynamics. Get it? Flat plate. 45 degree angle to the wind. Maximum torque for energy generation.

Wind Energy and Angle of Attack

Flat plates are a logical starting point for the design of a wind powered energy system. From fluid dynamics we know that an attack angle of 45 degrees is the most efficient for angular energy conversion of flowing air against a flat plate. At 45 degrees, it spills the energy depleted air flow which is replaced by the upstream air flow, as it has to because it is wind power. Stay with us on this. Focus. Think.

We have studied solar and wind as alternative energy sources. We are giving you a report of our findings. We are giving you direct references to physics and direct examples from NASA.

We have made some discoveries of products being offered, their benefits, and their shortcomings. We are building wind powered generators based upon logic and the laws of physics. We have read and listened carefully to the lemming followers of the "wind turbine" fad. We have studied their calculations and their conclusions and found them lacking. The laws of physics are not false.

Flat plates, even if they are slightly curved for structural strength, are far better than airfoils for a wind powered generator.

Source : <http://www.hicow.com/wind-energy/orville-wright/wind-powered-generator-1.html>