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Analysis Of How To Process Devices That Receive Electricity From Wind Energy.

Zavqiyev Dilshodbek Siddiqjon ugli
Student Karshi Institute of Irrigation and Agrotechnics at the National Research University "Tashkent Institute of Irrigation and agricultural Mechanization Engineers"

Annotation. The article examines the vertical axis wind turbine, as well as its aerodynamic properties. Wind turbine parameters are calculated and the relationship between them and wind generator efficiency.
Key words: Wind turbines, wind probability analysis.

Access. The population is growing sharply, and our natural resources are showing up as a backup shortage. Therefore, because of the growing demand for these, it is more important than ever to invest in renewable energy. The consumption of extracted fuels as energy is seen to be the main cause of environmental problems. Carbon dioxide generated by fuel consumers is one of the main causes of global warming.

The amount of carbon dioxide produced as a result of organizations' activities, product transportation activities, product production or human activities is called$_{CO2}$. The media have focused on this issue, and many green movements havebegun to try to reduce our CO_2.

There are several types of energy that do not generate carbon dioxide. These are sources of renewable energy such as atomic energy and wind, solar and water energy. Renewable energy sources are considered the cleanest because they do not leave emissions generated by energy production. An additional product of nuclear energy is radioactive waste, which can take a long time to process until proper utilization. There are two main types of wind turbines, a vertical arrow and a horizontal aisle. Horizontal axis wind turbines were invented before vertical axis wind turbines, which led to their popularity and widespread spread. Figure 1 shows the diagram of these two types of systems.

Figure 1. Vertical axle wind generator.

Their main features are aerodynamic blades, which revolving around the vertical aisle. Here is a collection of highly refined horizontal wind turbines (HAWTs) at sea, for comparison:

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Figure 2. Wind Generators

Their main features are three aerodynamic blades that look at the wind and revolving around the horizontal arc. People often use the term VAWT incorrectly to horizontal windmills such as the Savonius windmill. The difference between a windmill and a wind turbine is in aerodynamic blades. In the absence of an aerodynamic advantage that adds an additional vector of power formation, only the smallest part of wind energy can be obtained. Examples of horizontal windmills:

Figure 3. Example of fragments

If made cheaper than old boars and residues, they will be effective for pumping irrigation water, but not so much as alternatives.

VaWT supporters overweigh

1. **Wind farms on a** communal scale are **installed** in **places where the winds are relatively stable, so keeping the wind** from **any direction is not a particular advantage**. Propees and inventors say that VAWTs take the wind from any angle, making them more efficient than HAWTs. Maintaining variable winds and girders in any direction is only an advantage in small-sized situations such as city or home settings. Horizontal arrowed wind turbines (HWTs) are installed in places with sustained winds, and the blades are well beyond the turbulence of the ground, which causes alternating burrows. The advantage of VAWTs is only in the niche environment.

2. **VAWT blades are rarely at an optimum angle** in **wind or fresh air, so they can never be very effective in a tribe HAWT and more electricity does not produce.** Advocates and inventors say that VAWTs generate more electricity than HAWTs. Paragraph 1 above eliminates this, but what else does it play? Energy formation is a factor in the surface of wind-affected knives and aerodynamics of the blades (as well as other factors for reducing profitability). It has a capacity of 4.5 MW HAWTS has large ranges, the blade surface holds a lot of wind, very aerodynamic blades (a variable step along its length, taking into account variable speed , and with surface area) and a standard with three blades allow fresh air to circulate relative to them. the wind carries the blade girders under the wind before passing the next blade. VaWTs, on the other hand, are extremely difficult to achieve

the same balance of surface area, aerodynamics, and "clean" air for the best laminar flow. Most often the blades provide not the optimal surface area for the coming wind, but very low optimal surface areas. Only from the front the knife is in the fresh air; When the blades roll, they pass into very turbulent air, where the efficiency of aerodynamics is much lower. The equivalent field VAWT triblade has an almost zero chance of generating more electricity, such as HAWT, and they typically use more material to generate less electricity, which makes the lifetime cost of electricity even lower. The equivalent field VAWT triblade has an almost zero chance of generating more electricity, such as HAWT, and they typically use more material to generate less electricity, which makes the lifetime cost of electricity even lower. The equivalent field VAWT triblade has an almost zero chance of generating more electricity, such as HAWT, and they typically use more material to generate less electricity, which makes the lifetime cost of electricity even lower.

3. **HAWTs rarely collapse due to lateral voltage, and VAWTs usually have very asymmetric front and back voltages in their podshipniks.** This is engineering and economics. HAWT rarely collapses; Engineering is very healthy and full life cycle cost analysis shows that they are actually the fastest-covering form of electrical output in the world. At the moment, VAWTs do not generate enough electricity, so the calculation of the full life cycle indicates their advantage over HAWTs based on cost or materials. What kind of problem do they solve?

4. **AS HAWTs get bigger**, **they become more silent , and modern wind farms produce 10 times more electricity with less noise than older wind farms.** Advocates and inventors say that VAWTs are quieter. This is not really proven. The first larger scale, with a capacity of 2 MW , the VAWT prototype is just climbing. The features of the noise have not yet been identified. And, of course, despite a big increase in the volume of HAWT improvements, it will continue to keep noise emissions at the same level or below; it has a capacity of 4.5 MW the wind turbine is only one dB or two more noisy than the wind turbine with a capacity of 1.5 MW, which is more than the old wind turbines with a capacity of 600kW much quieter. And 4.5 MW wind turbines are located farther apart than smaller wind turbines, so the overall ambient noise is significantly larger for power generation is actually much lower. Wind energy is actually worth considering, because the larger the production factor, the more silent it will be. This is not true of anyone but the production of electricity. VAWTs are competing with technology that has not been proven to be more silent and is already very quiet.

5. To **generate** the **same electricity**, **VAWTs must be as high** as **HAWTs, so the visual effect will be almost identical**. Propeurs and inventors argue that the visual impact of VAWTs is lower. This is only applicable to smaller wind generators that are closer to the ground, which is applicable to smaller HAWTs as well. It makes it less visible to increase productivity, which is not very useful. To make them economical for network-wide production, they must be so large that they are still very visible. VAWTs only lower the visual effect in some cases because some designs are sculptor objects that move, but this is also a very subjective point.

6. **Shadow blistering is a problem for any house near** the **wind** station **for several weeks during** the **year** during **dawn or tick time.** Advocates and inventors say that VAWTs do not create a bliss of soybeans, which is problematic because it is a factor in the design of the triblade. Shadow binging is an over-representing problem. Twice a year for a week or two, sunrise or sunset occurs only a few minutes. The HAWT cycle is too slow to induce epileptic seizures (and there are design studies and standards to ensure this is true). Wind farms usually try to assess their impact on local residential areas and adapt them if possible, and the three main means of wind station deployment - WindPro, WindFarm and Windfarmer - include shadow flier modelling. Anti-wind defenders are promoting this, but to think it's a problem you have to look for something that hates wind turbines. VaWTs, sufficient to produce beneficial levels of electricity, are still hated by NIMBYs.

7. **14 million fewer birds would die each year if all the mined fuel production was replaced by HAWT wind farms.** Advocates and inventors say that VAWTs kill fewer birds than HAWTs. Since hawt bird mortality rates are generally overestimate and are substantially lower than in fossil fuel production, lighted windows, cats, power lines, automobiles and many other sources of bird mortality, this is the straw human argument. Since VAWTs increase the capacity to produce communal energy,

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which is not built or compared for the death of poultry, this is an unfounded straw argument similar to a noise problem. **Vertical axis wind turbines** have **additional disadvantages**

1. **VAWTs are usually not high enough from the ground**. The key innovation, which maximizes wind turbine strength factors and production capacity, is that they are getting taller. Laminar current physics slows the wind as it approaches the ground (which I felt during a flight in a paraplane). VAWT constructions are much closer to the ground than the blades HAWTs, so they lose their wind speed significantly. To overcome this, they must be much higher and lose most of their approximate advantages.
2. **HAWT works very well.** There are decades of vertical and horizontal arrowed wind turbines. Today, around 200,000 horizontal-arrow wind turbines in the world generate electricity and they currently operate at a power coefficient of 35% -47%, as they are proven, tested and continuously improved technology.
3. **HAWTs are cost-saving on a scale. The** result of HAWT technology, which won for all the reasons listed above, is that there are very well optimized and integrated supply chains that allow you to specialize in various wind conditions and good prices. If VAWTs had solved a really important problem, there would be incentives to create subsidies to change the market, but they can't solve problems that are worth subsidising.

There is a model of VAWT, which has its own unique advantage, as it stops at speeds of up to 27 mph per second by itself, allowing it to be used to generate smaller winds in areas with frequent very strong winds. Of course, HAWTs of communal scale have control systems that automatically brake and squeeze blades without any problems under such conditions, but small wind HAWTs usually do not have such control systems. Location, but worth considering .

The Bible's Viewpoint

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