ELECTRET ANTENNA POWER CONVERTOR

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June 21st, 2000

Static Electricity that is generated on a properly treated insulated wire will produce more than a kilowatt in a light wind. This becomes possible because of a phenomenon in physics known as the electret effect. This effect occurs when the surface between a conductor and a dielectric obtains a permanent electric field. This field has the same effect on static electricity that a magnetic field has on iron filings.

A treated piece of insulated wire strung out in the wind will act as a Van de Graaff high voltage generator. In some conditions, a 300-foot length of wire can generate 50 kilowatts and even on a bright sunny day with a breeze of 3-4 mph, it will average 10 kilowatts, according to calculations.

A cable coax is perfect to use to draw and collect ions from the atmosphere.

How can the static energy that is obtained from a cable coax be converted into a usable form of electrical power?

The only practical method I have found is to charge a battery. My **radioionic valve** is the best way so far to covert ionized particle charge into electrical power.

The ionized particles that are collected from the atmosphere can be used to charge a battery using the radioionic valve, a coil and a capacitor, and the process is around 90% efficient, while using conventional diodes is only 15-20% efficient. An efficient voltage controller must also be used to keep your battery from overcharging. The circuit is needed to convert static charge into low voltage to charge batteries. The least expensive proof principle design uses a spark plug, an old automotive coil, a .001 mfd, 3 to 20kv capacitor and a ground rod.

Thus far, I have devised two methods. The first is simple and inexpensive but only 15-20% efficient. It simply involves breaking the current into pulses with a spark gap, and then transforming the voltage down and current up with a transformer and increasing the pulse duration, with a capacitor in parallel.

My method utilizes a unique solid state component which converts the high potential from ionized air particles into a more useful voltage and current. The average waveform becomes highly regulated or finely tuned.

The electret effect must not be underestimated

The electret effect is more important than you realize. Any ordinary antenna will collect charge, but without the electret effect, most of it is dissipated before it can be tapped. The electric field created by the electret effect not only attracts the charge from the air, but then it traps it in the conductor. This effect will also be produced even in a vacuum.

Virtually all insulators exhibit some degree of the electret effect, which the manufacturers consider undesirable. Treating the insulator will increase the electret effect at least 10 times. Treatment cost is negligible. Obviously, the treatment process is the essential piece to receiving enough energy to be useful. Teflon tape can be dangled from a cable and wonderful results can be obtained. In a thunderstorm, using an ordinary 300-foot cable with Teflon tape has produced a continuous arc eight feet long. Essentially, what you have is a type of Van De Graff Generator. I have not witnessed this myself but this appears to be possible because a lightning discharge releases energy that has been estimated to be in the billion watt range. The fact is that a bare wire will not generate a charge. A dielectric must be conditioned for a conductor to become electrically charged. The electret effect has to be present. An example of the electret effect is shown at this link: http://www.esdjournal.com/static/shower/shower.html

Conditioning the Cable

Buy cheap coax TV cable, which has a center wire and a shield cylindrical wire. Then put the whole cable into your oven and heat it up to about **212°F** or more, so that the plastic dielectric that contains the center copper wire almost begins to melt.
Then apply around 15 kilovolts or maybe a little less, so that there will be no arc over inside the cable. Then let the cable cool down slowly again, but still apply the high voltage D.C. When the cable has come down to room temperature again, it will be a pretty good electret!

Now hang the cable up in the air and it will attract lots of free ionized particles from the air and charge up the outer shield metal of the conditioned cable.

The electret effect is a problem in the manufacturing of coaxial cable. This problem arises from the process used to make insulated wire; an unwanted electret effect is created. Engineers work very hard to reduce the effect but are unable to completely eliminate it. What I am saying is that all insulated wire exhibits some electret effect. The engineers go to great lengths to minimize it. The treatment as is suggested in this document should increase the electret effect of a coax cable at least 100 times, and with some cable, as much as 1,000 times (depending on how hard the engineers worked). The electret effect is present wherever plastic is in contact with a conductor. It is much better to use unshielded cable and it is cheaper as well. If you do use shielded cable, it might not draw into itself as many ionized particles as is desirable.

To begin your energy experiments string out a 300-foot length of ordinary coax cable and do not connect the other end to anything. Use the conversion circuit described in this document to convert your collected charge into electrical power. When you ground this circuit do not use the one that is connected to the electric company's meter. If you do not get at least a couple of pops per minute from your spark plug you will need to condition your cable as is explained. Tying a bunch of 2-foot pieces of Teflon tape to your cable will also increase its draw power.

Virtually any insulated wire has a small electric field surrounding it that attracts positively charged air molecules (called ions) to itself. This charged moving air mass induces a negative charge of static electricity that builds up in the cable conductor. Under most circumstances, the conductor in a cable is absorbed without notice. Nevertheless, if the conductor is connected to a spark plug (whose threads are grounded) it should produce an electric arc across the spark gap each time the voltage in the cable rises to the limit of the spark plug gap. In some cases with a long piece of cable and some air current (wind), the spark gap will produce an arc almost continuously. A witness once reported to me that they witnessed an eight foot long arc during a thunderstorm. A continuous arc or one that is eight feet long indicates to me that a substantial amount of power was being received. This means that a treated piece of insulated wire can be strung out on a fence and used to generate enough power to provide a home owner with all they need. It also means that it is possible to generate power in winds that have previously been considered worthless (3-4 mph).

How can a small cable extract so much energy from little or no air movements?

This is easily explained. The energy collected from the cable is not derived from charge collection as one might first think. It is derived from induction, as the positive ions in the air rush towards the cable. As you may or may not be aware, the earth's atmosphere is a gigantic capacitor. At its upper level, air molecules are constantly being ionized and then as the air circulates, the charge is eventually carried to the ground that has a negative charge with respect to the upper atmosphere.

Ham radio operators will certainly confirm that a coaxial cable strung out, as an antenna, will become highly charged, especially in wet, stormy weather. The accumulation of charged ions is not possible in a humid environment. Therefore, the power is derived through charge induction rather than from static charge. This is clearly demonstrated from the fact that the power generated is directly proportional to the speed of the wind rather than the square of the speed.

Still, the wire hardly intersects any of the wind. How can a little wire collect so much?

The cross section of the wind from which power is collected is much larger than you might think. Remember that the electret effect creates an electric field, which attracts charged air molecules as a magnet attracts iron. The cross section of this field can be as great as 2 feet, so a 100-foot cable can intersect as much wind as a 16-foot diameter airfoil.

Does the electret effect wear out or dissipate over time?

The question as to whether the electret effect wears out is not a simple one to answer. It is clearly being used in a way that is unique. The fact of the matter is that, in general, the electret effect is unwanted, and engineers are normally working to prevent or eliminate it. The fact that they have to work very hard to do so is an indication that it is stable. Thus, the best answer I can give is that it does not wear out in the short term (years).

How can I determine if the cable will produce more power for its cost than I would have to pay the utility company?

Again, this can only be done over a long time-period because it is dependent on wind, location, humidity and possibly other lesser, undetermined factors.

How does humidity affect cable operation?

Ham radio operators have reported that static charge builds up on their antennas more often and more intensely in times of high humidity, rain, or snow. The technical literature reports that most atmospheric charge is carried by aerosol particles of dust or water that collect hundreds, thousands, and sometimes tens of thousands of units of charge. As they collect more and more charge, these particles migrate toward the earth's surface and constitute a major component of the fair weather current.

Have you tested cable generator in other configurations such as a spiral, coil, grid, or vertical mode?

Optimum results are obtained by suspending an insulated cable between 5 to 15 feet above the ground in a horizontal straight line. Any deviation from this will reduce the output of the cable generator.

You must use an insulated cable that is strung out horizontally. For it to function properly there should be a swag to it if you see that the cable is physically vibrating you will know that it is set up properly. Any wire will vibrate but it needs to be electrically insulated and possess the

electret effect to generate self charge. There is more than just wind that is involved. The cable will vibrate sometimes with only the slightest breeze. As you can see here there is a real energy source that is waiting to be harnessed. Essentially, we are utilizing the induction from a moving ion field. This is why a cable can be seen to physically vibrate. Where the seat of kinetic activity actually originates from I do not know. What I do know for certain is that energy is present in the system.

Has anyone measured the ion density of the atmosphere?

Yes, the average is 3,000 ions per cubic meter. The figure is subject to stupendous variations of many orders of magnitude as shown by this quote from "Atmospheric Electricity in the Planetary Boundary Layer" by William A. Hoppel, R.V. Anderson and John C. Willet. "Most atmospheric processes are interrelated and cannot be studied in isolation, but it is possible to identify one or two dominant influences. In the case of Atmospheric electricity in the Planetary Boundary Layer, however, separating the various causes and their effects can be extremely difficult. In fact, this field may be unique with respect to its sensitivity to many disparate phenomena spanning a tremendous range of scales in both space and time. For example, locally produced turbulent fluctuations in space-charge density have an effect roughly comparable in magnitude to that of changes in the global thunderstorm activity on electric-field variations within the Planetary Boundary Layer."

The ion density does not appear to provide enough charge to account for the current generated by the cable. Are there other sources of energy contributing to the current?

Both the electric field of the earth (typically 100-200 volts) and that of the cable produce an effect called the induction charging mechanism. This is a physical process for particle charging involving the collision of pairs of particles in an ambient electric field. Electric charge induced on particles surface by the ambient electric field is made available for transfer when the two particles come into contact. A subsequent differential particle motion that is influenced by gravity is postulated to result in large scale charge separation. The specific role of induction charging in the electrification of thunderclouds has not been resolved.

Another effect that is unquestionably affecting the cable is the double layer effect. On the surface of a substance a layer of electric dipoles whose axes have an average orientation normal to the surface, double layers may appear on the interface of a solid and gas, liquid and gas, liquid and liquid, etc. They arise whenever media with different electron affinities (forces of attraction, or work function) are contiguous, and if dipoles are available. A net potential difference, the electro kinetic potential exists across the double layer. This effect is

demonstrated in the super capacitor. Therefore, our cable acts like a super capacitor of high farads.

Yet, another source of atmospheric charge collected by the cable is due to aerosol charges. These particles of dust or water form dipoles and disproportionally collect one charge or the other. Where ions carry only single or double units of charge, aerosols carry hundreds, to tens of thousands, of units of charge. The fact humidity is such an important factor in the output of the cable indicates that aerosols are an important source of the energy it collects.

What else would be needed besides a cable to provide a good alternate electrical source for a home?

Additional Requirements

You will need a battery or bank of batteries, a charge controller, and a grid tied inverter.

Radioionic Energy Technologies