Simple Free-Energy Devices

There is nothing magic about free-energy and by “free-energy” I mean something which produces output energy without the need for using a fuel which you have to buy.

Donald Lee Smith’s Designs

Donald Lee Smith died a few years ago. He is famous for his high-power self-powered free energy designs. There are several videos on the web, showing some of his lectures. He produced one pdf document, and in May 2004 he was granted one patent. Don stated clearly in one of his lectures, that he never did disclose the full details of his designs. However, Don says that he discloses enough for somebody who is experienced in radio-frequency electronics to be able to deduce the things which he does not disclose and so build a device for his own use. If that is the case, then anybody who has succeeded in doing so has kept very quiet about it afterwards (which would be understandable).

Don produced at least forty eight different devices which draw energy from what Don prefers to call "the ambient background". His devices are capable of supplying kilowatts of excess energy and in most cases they do not require any input energy to be supplied by the user.

Don’s work is subtle and not easy to replicate. It is based on the principle that the power output of a circuit increases with the square of the frequency and the square of the voltage. So, if you double the frequency and double the voltage, then the output power goes up and becomes sixteen times greater. As a result of this, Don’s best known design uses a Neon Sign Transformer circuit which raises the frequency to around 35,000 cycles per second and raises the voltage to anything from 2,000 volts to 12,000 volts, giving a power output is physically quite small and yet it has an output of 160 kilowatts (8000 volts at 20 amps) from an input of 12 volts 1 amp. That is, the output power is more than thirteen thousand times greater than the input power. Consequently, his designs are for experienced developers only.

Don Smith considered himself to be self taught. Don says that his understanding comes from the work of Nikola Tesla as recorded in Thomas C. Martin's book "The Inventions, Researches, and Writings of Nikola Tesla" ISBN 0-7873-0582-0. This book can be downloaded from http://www.free-energy-info.com/TeslaBook.pdf as a pdf file.

Don states that he repeated each of the experiments found in the book and that gave him his understanding of what he prefers to describe as the 'ambient background energy' which is also called the 'zero-point energy field'. Don remarks that he advanced further than Tesla in this field, partly because of the devices now available to him and which were not available when Tesla was alive.

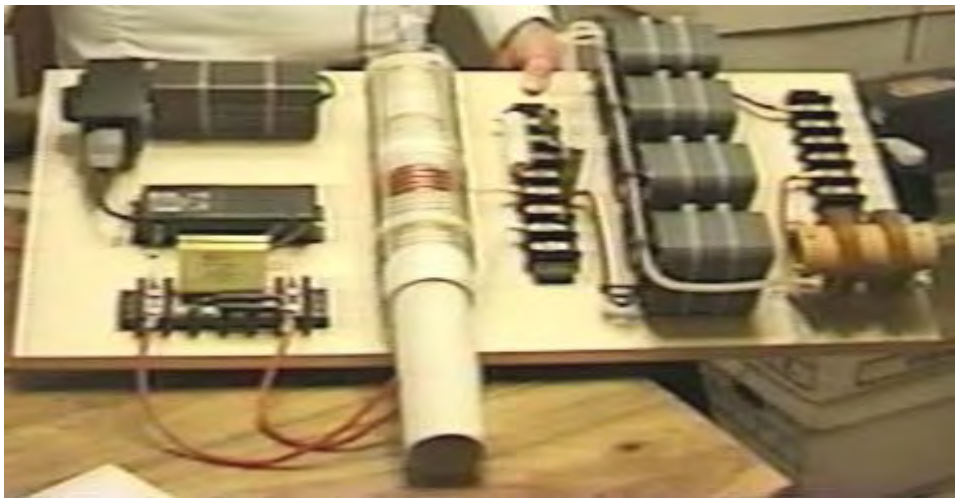
Don stresses two key points. Firstly, a dipole can cause a disturbance in the magnetic component of the 'ambient background' and that imbalance allows you to collect large amounts of electrical power,

using capacitors and inductors (coils). Secondly, you can pick up as many powerful electrical outputs as you want from that one magnetic disturbance, without depleting the magnetic disturbance in any way. This allows massively more power output than the small power needed to create the magnetic disturbance in the first place. This is what produces a “Coefficient Of Performance”>1 device and Don has created nearly fifty different devices based on that understanding.

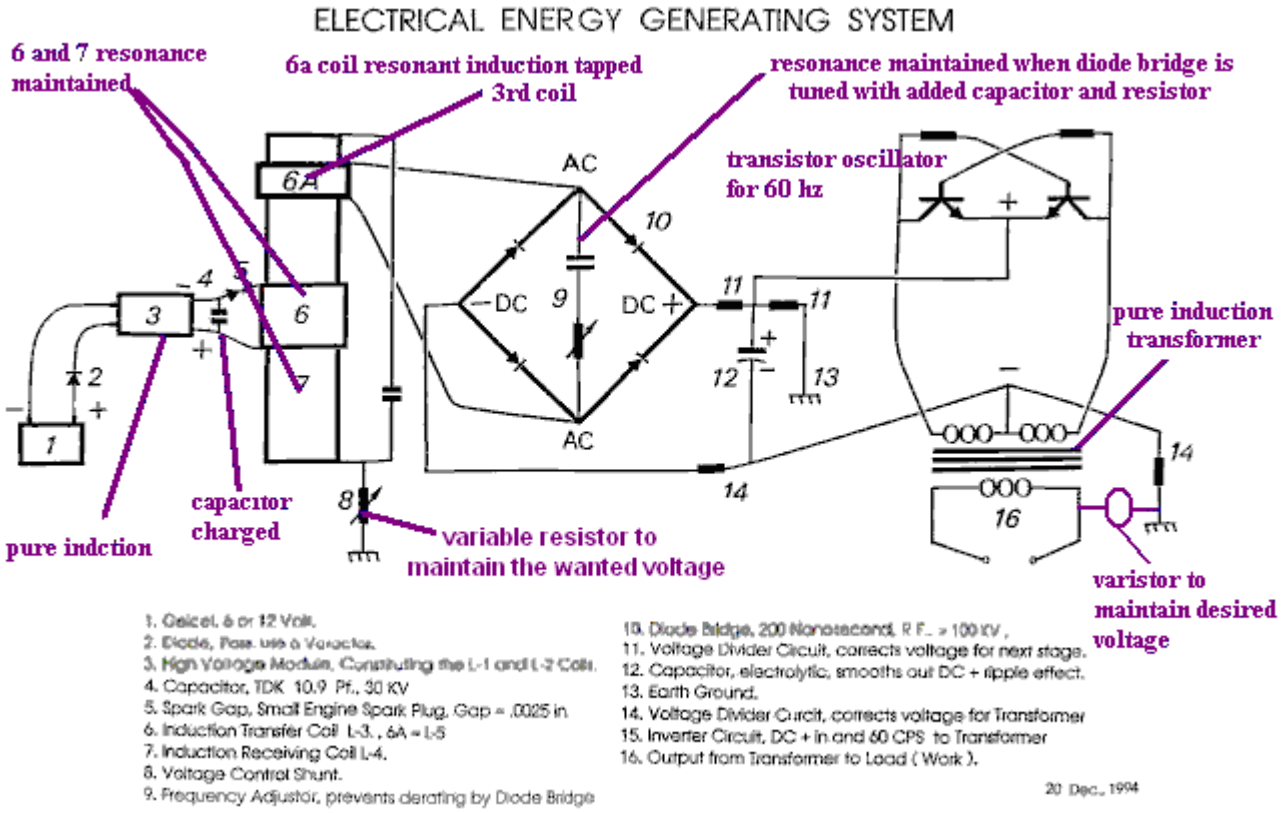
Don had a website but you will find that it has been taken over by Big Oil who have filled it with innocuous similar-sounding things of no consequence, apparently intended to confuse newcomers searching for information on Don’s designs.

The present situation in 2019 is that few people understand Don’s designs fully (and I myself, fall into that category). High-voltage components are expensive and hard to find, and high voltages are dangerous. However, we will look at one of his many designs and try to understand it as best we can. This is his table-top very high power generator. It produces a self-powered output of 160 kilowatts which is enough to supply all the electrical needs of a row of twenty houses.

This device is effectively a Tesla Coil system and so the normal electromagnetic effect of the ratio of the number of coil turns does NOT determine the effect between the coils. The demonstration device looks like this:



This device is not the easiest thing in the world to understand. Here is the circuit diagram:



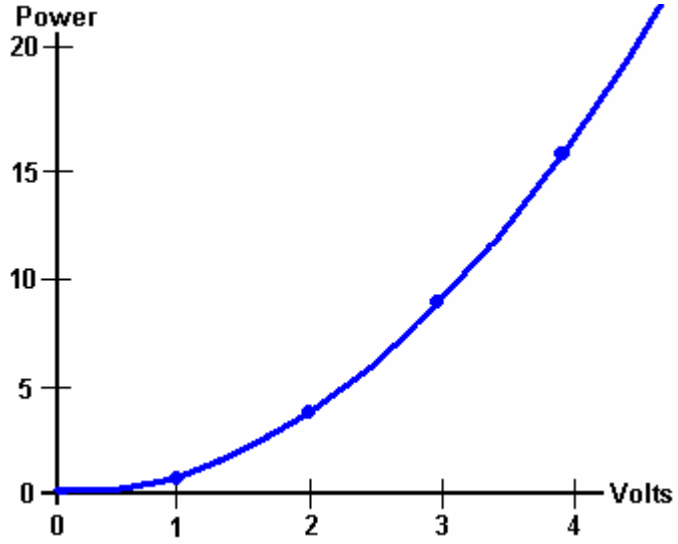
it is probably worth mentioning some of the main points which Don Smith appears to be making. There are some very important points being made here, and grasping these may make a considerable difference to our ability to tap into the excess energy available in our local environment. There are four points worth mentioning:

1. Voltage
2. Frequency
3. Magnetic / Electric relationship
4. Resonance

1. Voltage. We tend to view things with an 'intuitive' view, generally based on fairly simple concepts. For example, we automatically think that it is more difficult to pick up a heavy object than to pick up a light one. How much more difficult? Well, if it is twice as heavy, it would probably be about twice as much effort to pick it up. This view has developed from our experience of things which we have done in the past, rather than on any mathematical calculation or formula.

Well, how about pulsing an electronic system with a voltage? How would the output power of a system be affected by increasing the voltage? Our initial 'off-the cuff' reaction might be that the power output might be increased a bit, but then hold on… we've just remembered that Watts = Volts x Amps, so if you double the voltage, then you would double the power in watts. So we might settle for the notion that if we doubled the voltage then we could double the output power. If we thought that, then we would be wrong.

Don Smith points out that as capacitors and coils store energy, if they are involved in the circuit, then the output power is proportional to the **square** of the voltage used. Double the voltage, and the output power is four times greater. Use three times the voltage and the output power is nine times greater. Use ten times the voltage and the output power is one hundred times greater !



Don says that the energy stored, multiplied by the cycles per second, is the energy being pumped by the system. Capacitors and inductors (coils) temporarily store electrons, and their performance is given by:

Capacitor formula: **$W = 0.5 \times C \times V^2 \times Hz$** where:

W is the energy in Joules (Joules = Volts x Amps x seconds)
C is the capacitance in Farads
V is the voltage
Hz is the cycles per second

Inductor formula: **$W = 0.5 \times L \times A^2 \times Hz$** where:

W is the energy in Joules
L is the inductance in henrys
A is the current in amps
Hz is the frequency in cycles per second

You will notice that where inductors (coils) are involved, then the output power goes up with the square of the current. Double the voltage **and** double the current gives four times the power output due to the increased voltage and that increased output is increased by a further four times due to the increased current, giving sixteen times the output power.

2. Frequency. You will notice from the formulas above, that the output power is directly proportional to the frequency "Hz". The frequency is the number of cycles per second (or pulses per second) applied to the circuit. This is something which is not intuitive for most people. If you double the rate of pulsing, then you double the power output. When this sinks in, you suddenly see why Nikola Tesla tended to use millions of volts and millions of pulses per second.

However, Don Smith states that when a circuit is at it's point of resonance, resistance in the circuit drops to zero and the circuit becomes effectively, a superconductor. The energy for such a system which is in resonance is:

Resonant circuit: **$W = 0.5 \times C \times V^2 \times (Hz)^2$** where:

W is the energy in Joules
C is the capacitance in Farads
V is the voltage
Hz is the cycles per second

If this is correct, then raising the frequency in a resonating circuit has a massive effect on the power output of the device. The question then arises: why is the mains power in Europe just fifty cycles per second and in America just sixty cycles per second? If power goes up with frequency, then why not feed households at a million cycles per second? One major reason is that it is not easy to make electric motors which can be driven with power delivered at that frequency, so a more suitable frequency is chosen in order to suit the motors in vacuum cleaners, washing machines and other household equipment.

However, if we want to extract energy from the environment, then we should go for high voltage and high frequency. Then, when high power has been extracted, if we want a low frequency suited to electric motors, we can pulse the already captured power at that low frequency.

It might be speculated that if a device is being driven with sharp pulses which have a very sharply rising leading edge, that the effective frequency of the pulsing is actually determined by the speed of that rising edge, rather than the rate at which the pulses are actually generated. For example, if pulses are being generated at, say, 50 kHz but the pulses have a leading edge which would be suited to a 200 kHz pulse train, then the device might well see the signal as a 200 kHz signal with a 25% Mark/Space ratio, the very suddenness of the applied voltage having a magnetic shocking effect equivalent to a 200 kHz pulse train.

3. Magnetic / Electric relationship. Don states that the reason why our present power systems are so inefficient is because we concentrate on the electric component of electromagnetism. These systems are always COP<1, that is, the output power is always lower than the input power, as electricity is the 'losses' of electromagnetic power. Instead, if you concentrate on the magnetic component, then there is no limit on the electric power which can be extracted from that magnetic component. Contrary to what you might expect, if you install a pick-up system which extracts electrical energy from the magnetic component, you can install any number of other identical pick-ups, each of which extract the same amount of electrical energy from the magnetic input, **without** loading the magnetic wave in any way. That gives you unlimited electrical output for the 'cost' of creating a single magnetic effect.

The magnetic effect which we want to create is a ripple in the zero-point energy field, and ideally, we want to create that effect while using very little power. Creating a dipole with a battery which has a Plus and a Minus terminal or a magnet which has North and South poles, is an easy way to create an electromagnetic imbalance in the local environment. Pulsing a coil is probably an even better way as the magnetic field reverses rapidly if it is an air-core coil, such as a Tesla Coil. Using a ferromagnetic core to the coil can create a problem as iron can't reverse it's magnetic alignment very rapidly, and ideally, you want pulsing which is at least a thousand times faster than iron can handle.

In a typical Tesla Coil, the primary coil is much larger diameter than the inner secondary coil:

If, for example, 8,000 volts is applied to the primary coil which has four turns, then each turn would have 2,000 volts of potential. Each turn of the primary coil transfers electromagnetic flux to every single turn of the secondary winding, and the secondary coil has a very large number of turns. Massively more power is produced in the secondary coil than was used to energise the primary coil. A common mistake is to believe that a Tesla Coil can't produce serious amperage. If the primary coil is positioned in the middle of the secondary coil as shown above, then the amperage generated will be as large as the voltage generated. A low power input to the primary coil can produce kilowatts of usable electrical output power.

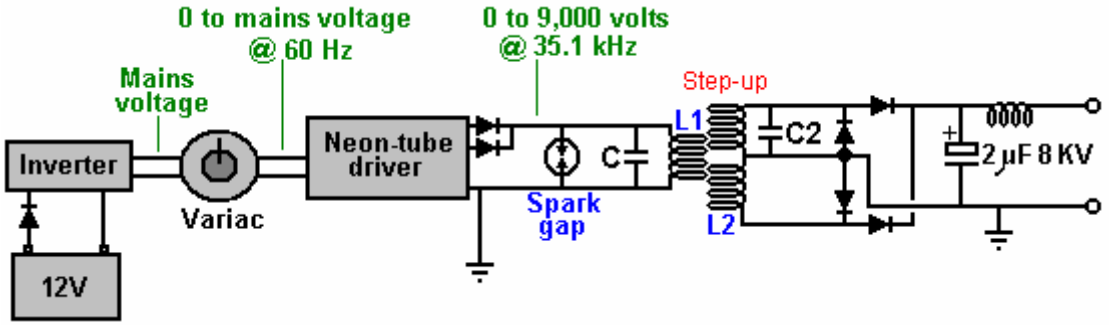
4. Resonance. An important factor in circuits aimed at tapping external energy is resonance. It can be hard to see where this comes in when it is an electronic circuit which is being considered. However, everything has it's own resonant frequency, whether it is a coil or any other electronic component.

When components are connected together to form a circuit, the circuit has an overall resonant frequency. As a simple example, consider a swing:

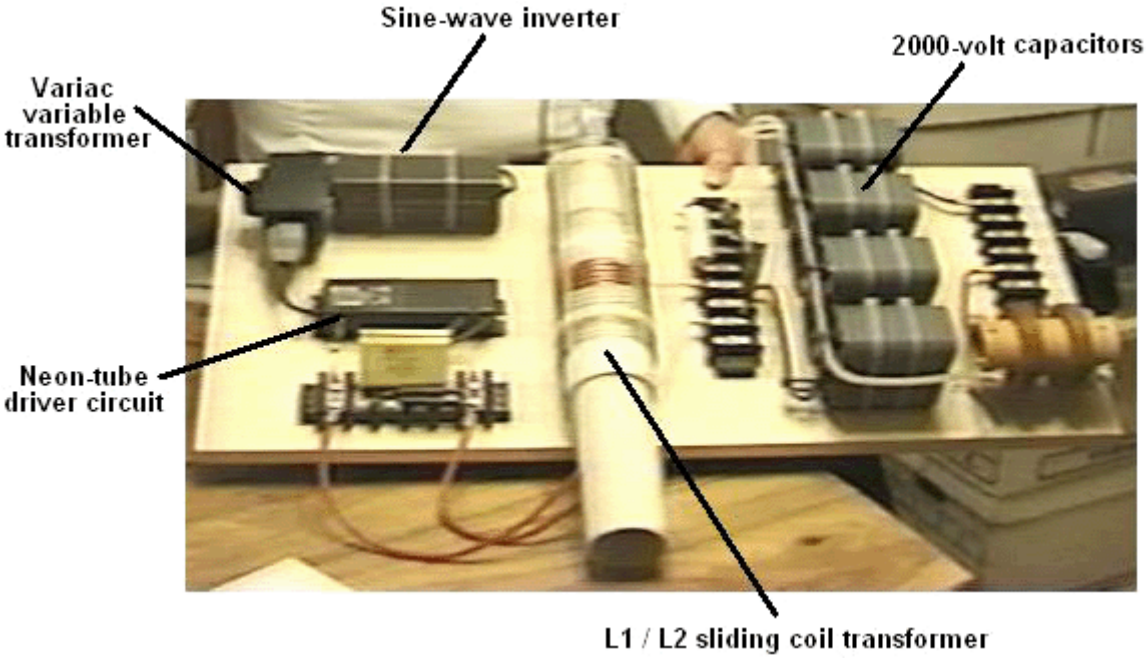
If the swing is pushed before it reaches the highest point on the mother's side, then the push actually opposes the swinging action. The time of one full swing is the resonant frequency of the swing, and that is determined by the length of the supporting ropes holding the seat and not the weight of the child nor the power with which the child is pushed. Provided that the timing is exactly right, a very small push can get a swing moving in a substantial arc. The key factor is, matching the pulses applied to the swing, that is, to the resonant frequency of the swing. Get it right and a large movement is produced. Get it wrong, and the swing doesn't get going at all (at which point, critics would say "see, see …swings just don't work - this proves it !!").

Establishing the exact pulsing rate needed for a resonant circuit is not particularly easy, because the circuit contains coils (which have inductance, capacitance and resistance), capacitors (which have capacitance and a small amount of resistance) and resistors and wires, both of which have resistance and some capacitance. These kinds of circuit are called "LRC" circuits because "L" is the symbol used for inductance, "R" is the symbol used for resistance and "C" is the symbol used for capacitance. Don Smith provides instructions for winding and using the type of air-core coils needed for a Tesla Coil.

Don provides quite an amount of information on this device and without his description of the device, it would be difficult to understand it's construction and method of operation. As I understand it, the circuit of what is mounted on this board is as shown here:



Anyway, the electrical drive is from a 12-volt battery which is not seen in the photograph. Interestingly, Don remarks that if the length of the wires connecting the battery to the inverter are exactly one quarter of the wavelength of the frequency of the oscillating magnetic field generated by the circuit, then the current induced in the battery wires will recharge the battery continuously, even if the battery is supplying power to the circuit at the same time.



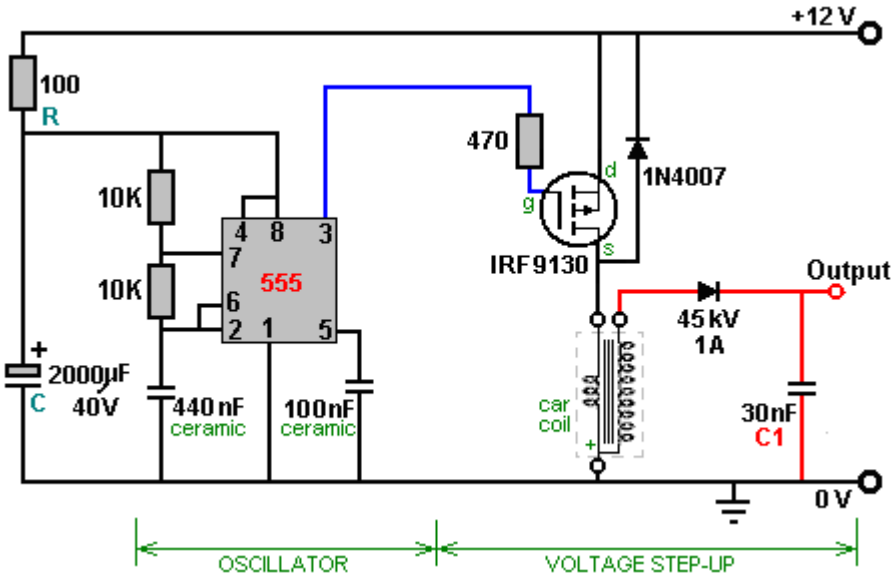
The battery supplies a small current through a protecting diode, to a standard off-the-shelf "true sine-wave" inverter. An inverter is a device which produces mains-voltage Alternating Current from an ordinary DC battery. As Don wants adjustable voltage, he feeds the output from the inverter into a variable transformer called a "Variac" although this is often made as part of the neon-driver circuit to allow the brightness of the neon tube to be adjusted by the user. This arrangement produces an AC output voltage which is adjustable from zero volts up to the full mains voltage (or a little higher, though Don does not want to use a higher voltage). The use of this kind of adjustment usually makes it essential for the inverter to be a true sine-wave type. As the power requirement of the neon-tube driver circuit is so low, the inverter should not cost very much.

The neon-tube driver circuit is a standard off-the-shelf device used to drive neon tube displays for commercial establishments. The one used by Don contains an oscillator and a step-up transformer, which together produce an Alternating Current of 9,000 volts at a frequency of 35,100 Hz (sometimes written as 35.1 kHz). The term "Hz" stands for "cycles per second". Don lowers the 9,000 volts as he gets great power output at lower input voltages and the cost of the output capacitors is a significant factor. The particular neon-tube driver circuit which Don is using here, has two separate outputs out of phase with each other, so Don connects them together and uses a blocking diode in each line to prevent either of them affecting the other one. Not easily seen in the photograph, the high-voltage output line has a very small, encapsulated, Gas-Discharge Tube spark gap in it and the line is also earthed. The device looks like this:

Please note that when an earth connection is mentioned in connection with Don Smith's devices, we are talking about an actual wire connection to a metal object physically buried in the ground, whether it is a long copper rod driven into the ground, or an old car radiator buried in a hole like Tariel Kapanadze uses. When Thomas Henry Moray performed his requested demonstration deep in the countryside at a location chosen by the sceptics, the light bulbs which formed his demonstration electrical load, glowed more brightly with each hammer stroke as a length of gas pipe was hammered into the ground to form his earth connection.

It should be remarked that since Don purchased his neon-tube driver module that newer designs have generally taken over completely, especially in Europe, and these designs have built in “earth-leakage current” protection which instantly disables the circuit if any current is detected leaking to ground. This feature makes the unit completely unsuitable for use in a Don Smith circuit because there, the transfer

of current to the ground is wholly intentional and vital for the operation of the circuit. However, you can easily make your own Neon Sign Module equivalent with a car ignition coil if you want to:



Anyway, the output of the neon-tube driver circuit is used to drive the primary "L1" winding of a Tesla Coil style transformer. This looks ever so simple and straightforward, but there are some subtle details which need to be considered. Much more detail on that is in www.free-energy-info.com/Chapter3.pdf if you are interested. However, making a high-power device like this is not easy to do and very few people have accomplished it, but there is an easier approach if you are not interested in powering a row of houses.

Ukrainian student, I. M. Solovey, was not satisfied with the many errors in conventional science and he decided to write his PhD dissertation on the lack of information on free-energy. Just like Don Smith, his experimentation was with the Tesla Coil, but he avoided expensive high-voltage components and while his output power was much lower, his objective was to show that free-energy exists.

The translation for his application for a PhD is shown below and thanks is due to Howerd Halay for making this translation:

ELECTRIC POWER GENERATION SYSTEM HIGH FREQUENCY

I. M. Solovey, Candidate Ph.D.

NUBiP of Ukraine "Berezhany Agrotechnical Institute" LS Chervinsky, PhD National University of Life and Environmental Sciences of Ukraine NP Semenov, engineer NUBiP of Ukraine "Berezhany Agrotechnical Institute"

Considered:
Existing scientific views do not have a convincing theoretical basis for the phenomenon of excess energy output. Power supply, Inductance, power, high-frequency measuring range, filter, energy.

Currently, there is a great deal of information about devices, after which "Activation" in whatever working field; in the process of “relaxation” output energy is in excess of input energy used.

For example, in the "production" of thermal energy observed in the oxygen-hydrogen electrolysers for normal and heavy water (Filimonenko V., 1957, S. Jones, 1989), the electric discharger (Chernetskyy A., 1971), vortex heat generators (Potapov Y., 1992).

In the late 1980s Stanley Meyer patents "Water Fuel Cell" (WFC) that allows the conversion of ordinary tap water into hydrogen and oxygen with far less expenditure of energy than would be required by conventional electrolysis, and in much greater quantity than expected with simple electrolysis. His explanation of the results is based on the resonant electric field effects on water molecules [2].

Later Don Smith built a number of devices based on Tesla's experiments, mostly with high output power. In his articles, he notes that he repeated each of the experiments found in the Tesla books, and this gave him an understanding of "ambient background energy “[3].

Objective. Repeat one of the above methods of obtaining energy. To test whether these devices really work. For this we implemented the circuit of the Don Smith device from his patent of 1994, where the generator can achieve an output of 15 kW (Fig. 1).

I.M. Solovey, LS Chervinsky, N. Semenov, 2011

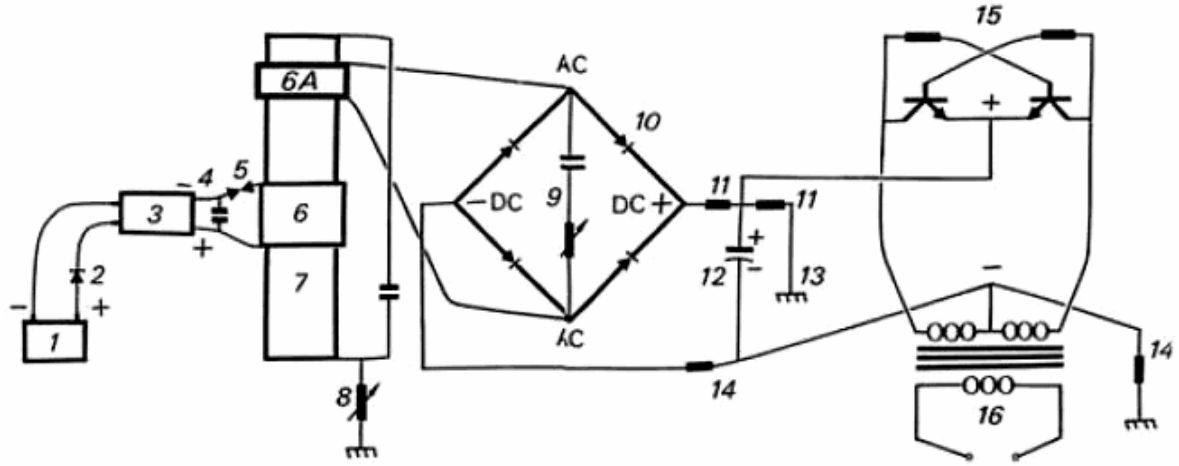


Fig 1. Schematic of electricity generator of Don Smith (according to his patent from 1994)

Basic materials and methods of research.
The main element in the schematic of Fig. 1 is an air-core transformer with the windings numbered 6 (primary), 6A (optional), 7 (secondary). For the study we prepared Primary L1, secondary L2 and an additional L3 coil according to specifications given in the following table:

Coil Specifications

Specification	Primary *L1*	Secondary *L2*	Additional *L3*
Coil length, cm	5,5	32	6
Number of turns	8	463	10
Diameter CM	5,5	5,1	5,6
Active resistance, ohms	0,1	4,2	0,1
Copper wire length per winding, M	1,4	69,1	1,8
Wire diameter, mm	2	0,65	1,2

To calculate the electromagnetic parameters of the secondary coil L2 we used a program named “Flyback Tesla calculator”.

Calculation results: L2
Coil inductance - 1559.9 uH;
self capacity - 4.61 pF;
Wire Length 73.2 m;
number of turns - 457;
quality factor - 8492;
resonance frequency AC - 1.875 MHz; and ¼ resonance frequency – 1.024 MHz
(Actual Experiment - 1.1 MHz).

The study was conducted according to the schematic in Fig. 2.

Placing of coil windings - as a Tesla transformer: primary at the base of the secondary.

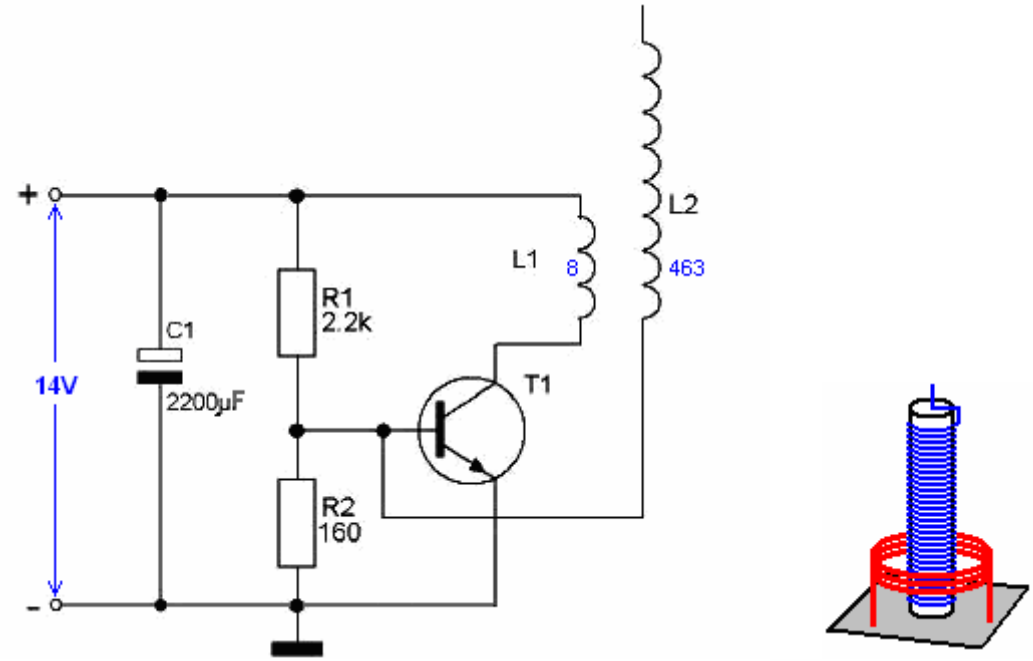


Fig. 2. Schematic of windings L1 and L2

Measurement of current was carried out by a DC ammeter on the PSU. Current consumption in the above schematic is 0.3 A. The value of voltage U2 at the output ends of the winding L2 is calculated by the formula: $U2 = Um/N1.N2 = 14/8.463 = 810.25$ V
where
Um is the voltage, 14 V;
N1 is the number of primary turns and
N2 is the number of secondary turns (see Table).

Note. The formula does not take into account the resistance of the transistor’s base-emitter pn junction nor that of the connecting conductors.

Experimentally determined values of voltage - largest breakdown in the air gap between the initial winding ends at L2 point of discharge. The magnitude of the voltage was 500-700 Volts. Frequency: 1.1 MHz measured experimentally by the use of a frequency generator.

When connecting the circuit (see. Fig. 2) to the constant power supply, power consumption was 0.3 x 14 = 4.2 W and this power can be called a complete network power consumption of 4.7VA. On output of the L2 winding we obtain (at the base of the coil) current of about 0.3 A and a voltage between the two ends of the coil of 700 V which calculates to 0.3 x 700 = 210 VAR. The study of high-energy parameters of the generator power circuit was conducted in Figs. 3 - 6 where a bulb was used as an

active load. The magnitude/intensity of lamp brightness determined the output power measurement. Lamps used were various capacities from 0.3 watts to 21 watts.

Under the schematic of Fig. 3 switching in various incandescent lamps, for example 0.3 W, did not lead to lighting, although consumption of the circuit energy was 14 x 0.3 = 4.2 watts.

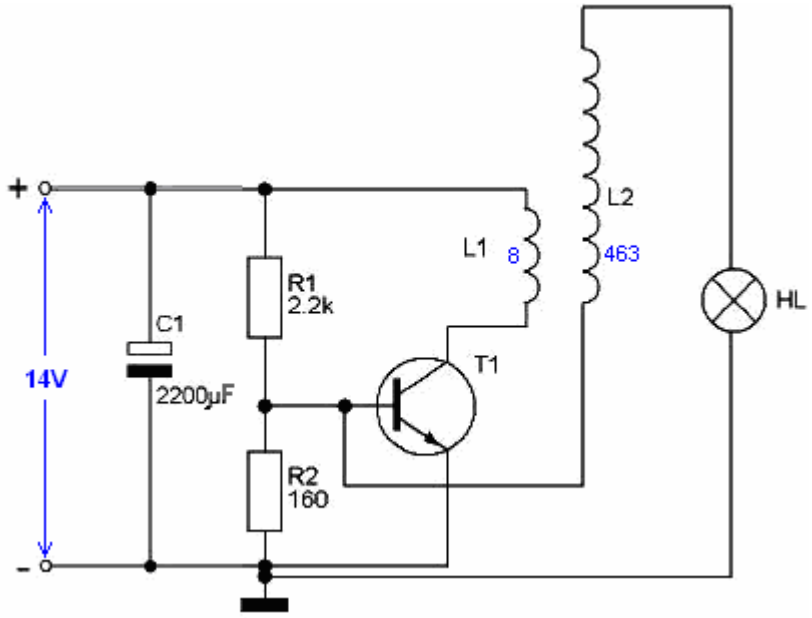


Fig. 3. Circuit of the experiment to determine the active power output of the L2 coil

We placed an extra coil L3, as in Smith's schematic (Fig. 4). Coil L3 was placed in the upper third of the L2 coil. A 6 volt, 3 watt lamp was connected to the additional coil L3 (see Table) and it showed a subtle glow.

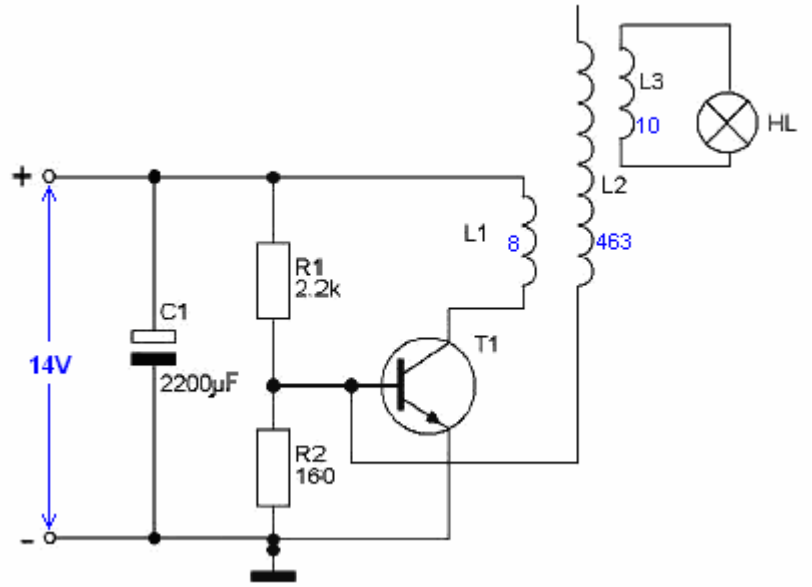


Fig. 4. Inserting various incandescent bulbs through additional winding L3.

When we inserted a capacitor C2 in series with the winding L2 (Fig. 5) We inserted a 12 volt 21 watt lamp to the L3 coil output. The lamp became brightly lit and in 4 to 5 seconds it burned out. The current consumption was a net 1.2 amps.

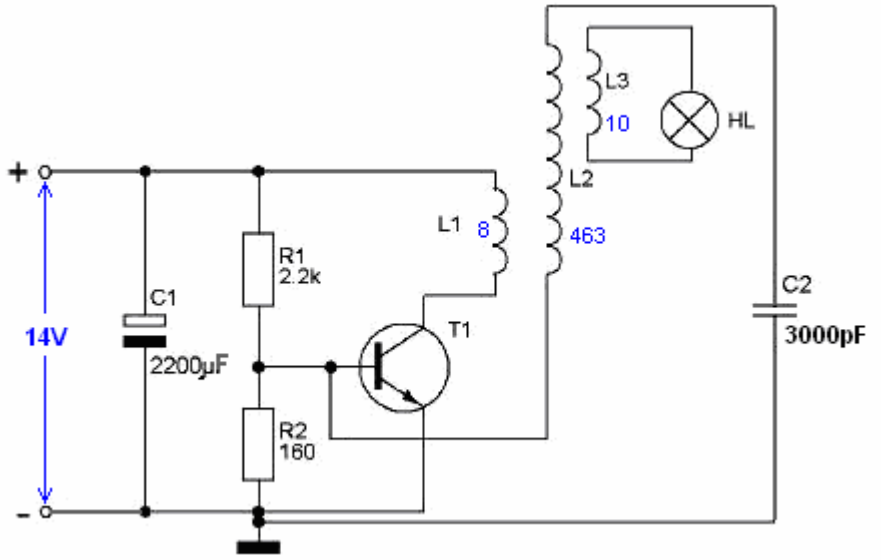


Fig. 5. Switching incandescent bulb(s) through the additional winding L3 when creating L2-C2 path.

An analogous result was obtained when we switched in a tungsten lamp using the schematic in Fig. 6 in a series circuit L2 / C2. A 12 volt 21 watt lamp also burns out in 4 to 5 seconds. The current in the lamp in this configuration was 1.8 - 2.3 Amps.

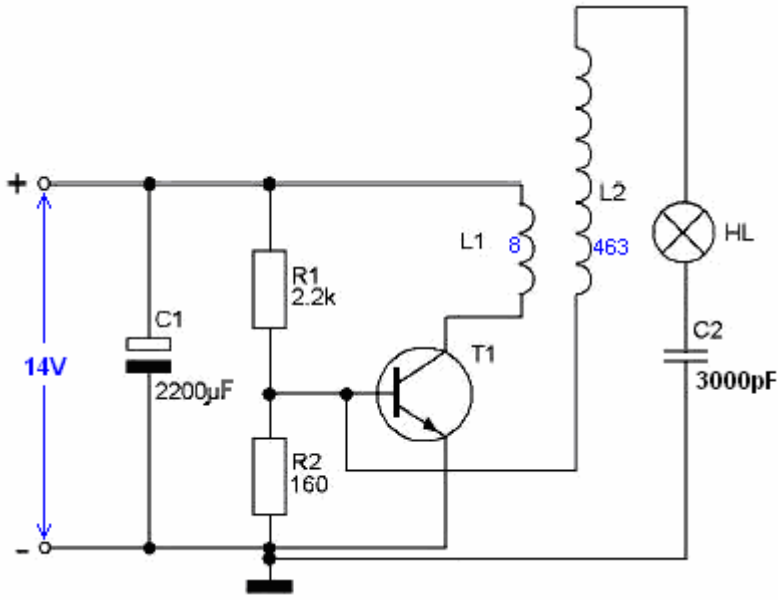


Fig. 6. Schematic: inserting an incandescent lamp in series through L2 and C2.

Conclusions

The results of exploratory studies confirm the existing scientific thought that the processes of input and output routing/transmission of electricity using high-voltage high-frequency electromagnetic field (radiation) phenomena require further deep theoretical and experimental studies.

References

1. Kanarev FM Beginning Phys chemistry microcosm / Kanarev FM [8th ed.]. Krasnodar, 2007. - 750 s.
2. Fominsky LP Rotary generators of free heat. DIY Fominsky LP - Cherkasy: "OKO-Plus". 2003. - 342 s.
3. US Patent No. 08/100074 .

The phenomena of appearance of excess energy effects have not found a convincing theoretical explanation from the standpoint of existing scientific views.

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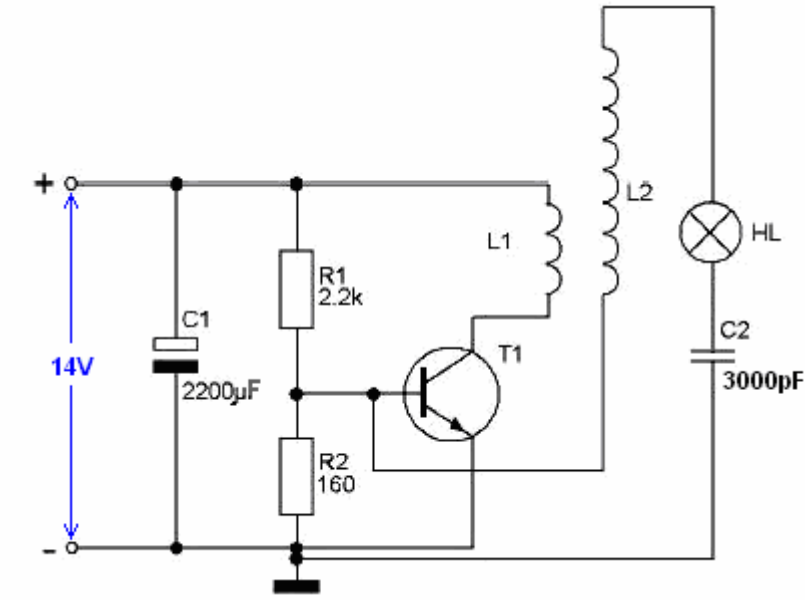
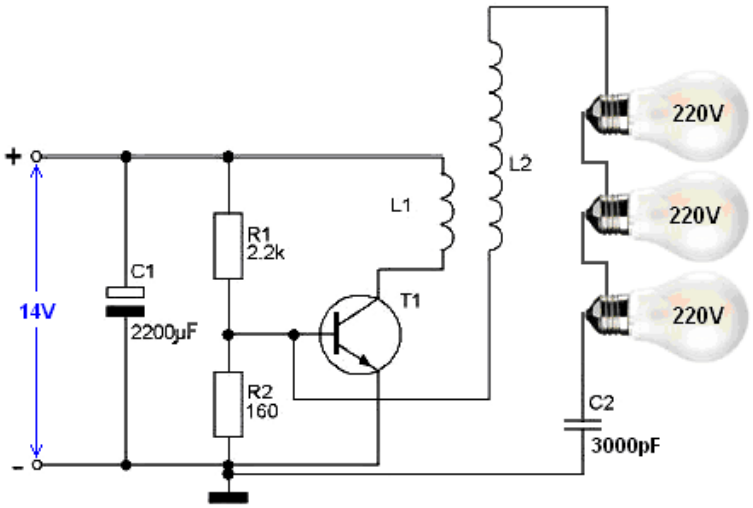
The interesting thing about this paper from Solovey is that the input voltage is so low at a mere 14 volts, although, of course, the output voltage is much higher and is at 1.1 Megahertz. Solovey's final diagram Fig.6 is interesting in that his 21 watt 12 volt bulb was destroyed in just a few seconds.



The measurement of current through the bulb was 2.1 amps while the bulb's design current is 1.75 amps. That difference is not enough to have destroyed the bulb so rapidly, so the problem will have been that the bulb wattage was exceeded severely. Earlier, the voltage across the coil "L2" was measured at 700 volts, so there may have been as much as that applied to the twelve volt bulb. If 700 volts were applied to the bulb and a current of 2.1 amps flowed through the bulb, then the dissipated power in the bulb would have been as much as 700 x 2.1 = 1470 watts which is 70 times the rating for the bulb and more than a kilowatt! Please don't be misled by the 14 volt input voltage, this circuit steps up the voltage and it might kill you. It is said that the high frequency of 1.1 MHz makes the output harmless to humans. I have not tested this and you really need to be careful around any high voltage circuit.

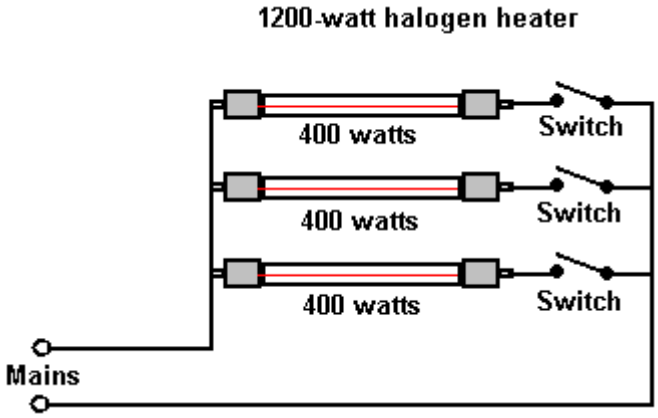
A point which Solovey seems to have missed is the fact that the positioning of the L1 primary coil along the length of the L2 secondary coil has a major effect on the output amperage, so, positioning the L2 coil in the middle of the L1 coil should increase the output power considerably.

The lamp used as the load is essentially a resistive load. I don't know enough about the subject, but putting a simple step-down air-core transformer in place of the bulb should lower the output voltage and increase the available output current considerably. It might be worth testing this simple circuit. If we were to assume that the output voltage is indeed 700 volts and that an inductive load is needed initially, then perhaps it would be worth testing the circuit with three 220-volt 100 watt filament bulbs in series:

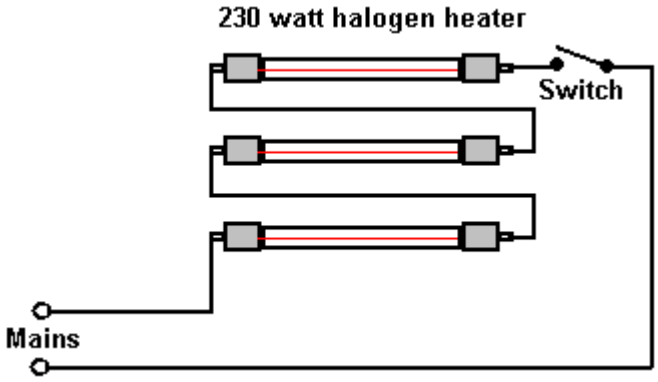


Another possibility would be to take an ordinary halogen heater and re-wire it so that the three 400 watt lamps are in series rather than in parallel.

A standard, low-cost halogen heater consists of three separate 400-watt sections with a switching arrangement which allows one, two or three sections to be powered up:



You can change the wiring inside the heater, so that all three halogen lamps are connected in a chain. As the wires connecting to the lamps often have push-on ‘spade’ connectors to allow for both simple manufacturing and easy replacement of a halogen lamp, this can often be done without any soldering. The new arrangement is like this:



If the halogen heater is now connected across 700 volts, the result is that if the halogen bulbs are similar to each other, then about one third of the 700 volts will be across each bulb. This is only an untested suggestion although a heater of this type works well at low power on 220 volts, but it gives a high voltage resistive load as a starting point for experimenting.

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