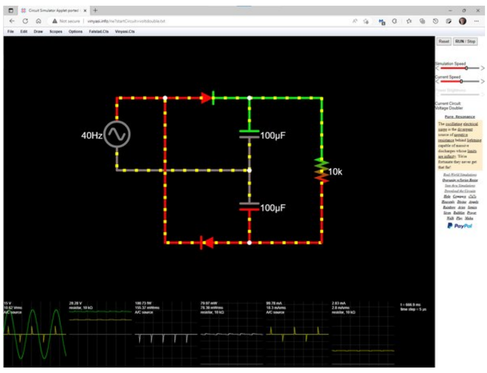
How do voltage multipliers not violate the laws of thermodynamics?

Vin Yasi
Self-taught hobbyist at Electrical Engineering (2013–present) · 16h

In the following example, this voltage multiplier was designed by Paul Falstad.[1] It exhibits a severe reduction of current which pays for its magnification of voltage. The overall result is a reduction of power which is displayed in RMS values. Hence, no violation of thermodynamics has occurred in this example.



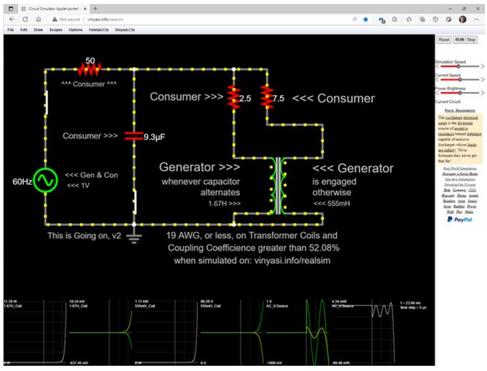
The link for this circuit simulation is ...

> **Circuit Simulator Applet ported to JavaScript by Iain Sharp, from the original in Java by Paul Falstad, Used Here to Promote the Simulation of Surges Arising from the Judicious Use of Negative Resistance.**
>
> http://vinyasi.info/ne?startCircuit=voltdouble.txt

... and the link to its portrait is here.

But that's not to say that thermodynamics tells the whole story since our knowledge of "current reversal" does not explain from where its extra current is coming from whenever the input voltage is severely restricted to either nano or pico watts and no exit terminal is provided. This is to prevent the formation of conventional current exhibiting entropic loss over time due to damping, alone. This specific type of anomaly is not discussed often enough. It would constitute a single-terminal network.[2] [3]

Since time-compression increases electrical reactance per unit of time, and reactive power is translatable into energy and vice versa, then it stands to reason that energy may be a conserved quantity, but it ultimately doesn't matter if we can effectively perform the equivalence of a "quarterback end-run" and, thus, bypass the significance of the Conservation of Energy as constituting a minor restriction in the following example ...



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>
> http://vinyasi.info/realsim?startCircuit=generator2.txt

Time is merely one example of how a change in one parameter of electrical reactance can affect the energy passing through it. A change in capacitance or inductance or phase shifting voltage relative to current are more factors to consider.

By varying the context within which energy occurs — namely: its reactance, its various amplitudes are a trivial affair **even though our lives depend heavily upon the amplitudes of energy!**

The triviality results from the ease with which energetic amplitude can be manipulated by the ingredients of electrical reactance not by the *relevance* which energetic amplitude plays in our lives.

This power by which reactance can have in making it seem as if Conservation of Energy has been violated is the direct result of an analogous situation ...

When we stand too close to a firepit, we can burn ourselves — especially if this is a bonfire and not a candle flame. Nonetheless, proximity to a flame — not its intensity — is more significant in illustrating how energy can be manipulated into *looking like it has altered its amplitude* when, in fact, **it has not!**

Think of electrical reactance this way — *not as a mere method of temporarily storing a portion of energy in the form of its non-energetic equivalency of reactance (enumerated by imaginary square roots of numbers) versus another portion of energy in the form of energetic real numbers, but* — **as an additional method of satisfying whatever energy requirement our loads possess given any quantity of energy at our disposal.** This will make it a lot easier to cope with the concept of "free energy."

Footnotes

[1] Circuit Simulator Applet

[2] Talk:Free Energy does not Exist - Wikiversity

[3] Free Energy does not Exist - Wikiversity

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About the Author

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