Reactance **can** ***Magnify*** **Real Power...**

1. If no more than 10V enters a solid-state “free energy” circuit in the form of a sine wave, or as a precharged capacitor inducing oscillations between itself and other reactive components of mixed reactive types (capacitors plus inductors). A millionth part of a volt would be best; but, certainly no less than 100 femto volts.
2. And if the leading current of capacitive reactance is combined, simultaneously, with the lagging current of inductive reactance.
3. Consequently, whatever scant voltage is fed to this circuit will be enough to induce a reactive force analogous to a torque-induced precession manifesting triangle waves riding piggy-back on top of the input sine waves. And these triangle waves will be the manifestation of a longitudinal wave which will not move (go) anywhere. It will remain in place as a standing wave of zero reactive power and negative one power factor born of point #2. Instead of movement, these triangular waves will expand and contract their amplitude as their only form of movement. So, it won't be a movement so much as a change in state of amplitude. And since this is reactive power masquerading as negative one real power factor, this reactive power cannot dissipate. It must accumulate its amplitude as a lossless form of energy. The frequency of oscillations of these triangular waves will attempt to accelerate in order to absorb some of its excessive accumulation of reactive power. But for the most part, only the amplitude will increase at an exponential rate.
4. What makes it possible for the two parent reactionary forces of leading and lagging current (described in point #2) give birth to a daughter wave of negative one real power factor is the mathematical result (of this reactionary blend) converting the helical sine wave motion of real input power into the reciprocating motion of triangle waves reciprocating in the same direction as the axis of rotation of the sine wave's helical transmission.
5. Since real power is confined by the Conservation of Energy, it cannot change its amplitude without losing something else yielding no net gain. But this circuit topology's reactionary conversion of real power into an oppositional combination of two reactive forces (capacitive and inductive reactance) forms a type of power which is lossless (must accumulate) and real.

Webpages devoted to the description and explanation of the reactive and real portions of apparent

power never state what the consequences of a half-cycle phase shift between current and voltage has upon the real power portion of apparent power. Instead, they focus their consequential description upon what happens to reactive power, alone, (stating that “it cancels to zero VARs”) and, then, they ignore its consequence made upon the real power portion of apparent power.

Well...

I finally discovered a webpage which provided both descriptions, but not by explicitly stating what these consequences were. Instead, it made the common mistake of ignoring the consequence made upon the real power portion of apparent power, yet, provided the math describing both real and reactive portions of apparent power. This was accomplished by using the trigonometric cosine function applied to the four quadrant phase shifts between current and voltage and what their consequences were made upon the real power portion of apparent power while the sine function was applied to the same four quadrant phase shifts, and their consequences, made upon the reactive power portion of apparent power. What I saw, stunned me!

A phase shift of 180° (constituting a half-cycle of separation between current and voltage waveforms within each oscillation) converted reactive power into real power whenever capacitive and inductive reactances equaled each other's absolute value of phase shift while possessing opposing polarities of angular direction of shift between them. This is exhibited by the impact which the sine function has upon the angular measurement of 180° (representing one-half cycle of oscillation), namely: a phase shift of sin(180°) equals a zero power factor *resulting in a zero amplitude* of reactive power. Meanwhile, the cosine function of: cos(180°) = –1, indicates a real power condition of negative watts. According to passive sign convention, a power factor of –1 is functionally equivalent to the generation of power, but without the need for a prime mover to contribute a significant source of external energy to rotate the shaft of an electric generator. Rather, only a mere micro-volt, plus or minus a factored window of opportunity of 10 million, is required to empower this style of circuitry to self-amplify any quantity of reactive power in as little as a few nano-seconds or in as much as several kilo-seconds from this scant input of real power if this reactive composition of capacitive and inductive impedance (of negative real watts) is in parallel to any resistive impedance. This constitutes a conversion of reactive power into real power. Energy Conservation has been upheld, because all we have done is recycle reactive power and performed any one of various conversions to make legitimate use of this useless form of energy.

Reactive power can recycle its amplitude at an escalating percentage of reuse and, thus, magnify itself per unit of time. Yet, a fixed quantity of real power initiated this procedure. And a fixed quantity

of real power results from the conversion of this reactive middle step of power conversions after a sufficiently lengthy duration of warmup has reached a target of satisfying a load. Thus, it may appear that a violation of Energy Conservation has occurred! But, this is a misconception resulting from an over-generalization (and over-simplification) of the processes involved.

If we divide the real power input of this type of circuit by its output and, then, subtract this ratio from unity (positive one), and multiply by 100 for convenience, we'll possess a percentage of reuse to which we have put the initial quantity of real power to by recycling its conversion into reactive power. This constitutes a hyperbolic function since the closer we approach unity (of 100%), we never reach the asymptotic limit (for this function) of infinite Quality Factor. Yet, the closer we are to unity, namely: the less margin of difference lies between our percentage versus unity, the far greater is the ratio of output versus input. And this ratio can become quite huge while the difference between the circuit's percentage versus unity may appear to be anal to worry about it, such as: a percentage of 99.9999999%.

Yet, this reduction of marginal difference from unity is an understatement – by all appearance – and is *not* trivial, because we will want to remain committed to an accurate assessment of what is happening whenever “free energy” is the claim.

So, let's review all four quadrants of sine and cosine function of both real and reactive power to get a broad sense of what is happening in a “free energy” circuit exhibiting a nearly 100% reuse of its real power input recycled as reactive power...

Four Quadrants of Phase Shift within One Cycle of Oscillation	Real Power results from the application of the Trigonometric Cosine Function (made upon the Angle of Phase Shift between Current and Voltage) yields a Power Factor of...	Reactive Power results from the application of the Trigonometric Sine Function (made upon the Angle of Phase Shift between Current and Voltage) yields a Power Factor of...
Synchronicity of Current and Voltage Waveforms yields a Phase Shift of Zero Degrees	Consumption of Real Power at a Power Factor of +1	No Production of Reactive Power at a Power Factor of 0
A Leading Power Factor yields a Phase Shift of +90° between Current and Voltage Waveforms	No Consumption of Real Power at a Power Factor of 0	Production of Reactive Power at a Power Factor of +1 due to Capacitive Reactance
Complete Separation of Current and Voltage Waveforms by a Phase Shift of 180° between them	The Negation of the Consumption of Real Power (due to a Power Factor of –1) making this Functionally Equivalent to the Production of Real Power at a Power Factor of +1	No Production of Reactive Power at a Power Factor of 0
A Lagging Power Factor yields a –90° = 270° Phase Shift between Current and Voltage Waveforms	No Consumption of Real Power at a Power Factor of 0	The Negation of the Production of Reactive Power (due to a Power Factor of –1) making this Functionally Equivalent to the Consumption of Reactive Power at a Power Factor of +1 due to Inductive Reactance

The conversion of the geometry of movement, and the type of movement, is also very interesting whfden studying the conversion of real power into reactive power and back, again, into real power.

A helical sine wave of one micro-volt is transversely generated (by a sine wave generator), but fed – longitudinally – along a single wire connection to a “free energy” circuit. This helps reduce the expenditure of current at the sine wave generator since we won't need any sizable quantity of current to initiate these reactions. And we won't need much voltage, either. All we'll need is sufficient frequency of a sine wave-shape.

The combinatorial reactions of capacitive and inductive reactances will yield a zero amplitude of reactive power due to its conversion into real power of a negative power factor if this combination

occurs at the same time. So, current is both leading and lagging voltage by the same amount of a quarter-cycle phase shift. This may be considered useless from the standpoint of reactive power (since the outcome is zero VARs of reactance), but since it is simultaneously converting into negative watts of real power, it can hardly be said to be useless since there are three ways (that I know of) to render the uselessness of negative watts into useful positive watts. These three methods of utilization are...

1. Passing negative watts through a resistive load, such as: an incandescent light bulb, or a resistive heater element (not to be confused with an inductive heater element found on most electric ranges in all-electric kitchens), or...
2. Passing negative watts through a fully rectified bridge of a square arrangement of four diodes to convert the oscillating portion of reactive power into non-oscillating real power and, thus, add to the preexisting scant quantity of real power which initiated these oscillations in the first place, or...
3. Passing negative watts through a bifilar counter-wound coil so as to induce current in one winding in-sync with the voltage in the other winding and vice versa. Voila! The fields of each winding will unite with its complimentary field in the other winding to create a condition of real power of +1 power factor despite the input of a –1 real power factor through the terminals of each bifilar winding.