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The Third Order Market: The Principles and Governing Laws of the Coming Consumer Driven Renewable Energy Market Producers and Consumers will Embrace

Why Helping Energy Consumers Achieve Transcendent Goals is the Market Opportunity of More Than Just One Lifetime

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The highly regulated U.S. electric sector is a nearly impenetrable market, hostile to outside entrepreneurs, and its isolation from competitive markets, particularly the high tech sector, has prevented nearly all the innovative and cultural high tech cross pollination other sectors’ customers have enjoyed. The electric sector is different from all other sectors of the economy. Significant inherent market efficiencies demand heavy regulatory restrictions and necessitate that parts of the market will remain forever protected and favor utilities with franchised territories (monopolies). However, there is an active and growing sector serving the demand for cleaner, lower environmental impact electrical energy options, and it is one segment of the electric market that is open to competition although it is still in its infancy. The products and services offered by this market segment are less than compelling, and an opportunity exists for a revolutionary transformation, the ability to offer newly developed products and services that consumers will embrace. In order to create the architecture of this market it is necessary to understand the existing electric market, what research tells us about human behavioral motivations that influence individual decisions to voluntarily engage in such a market and thoroughly conceptualize the principles and laws of this new market eco system. The first entrepreneurs to create this architecture and commit to commercializing these ideas will create a market leadership position that will be all but impossible to challenge by followers.

The core function of the electric sector is to maximize reliability, safety and economic efficiency of electrical power generation, delivery and supporting operational and financial transactional systems and can be characterized as a **First Order Market**. The focus of the First Order Market is extremely narrow and with a limited focus to produce and deliver two commodities: electrical energy and capacity. The electric sector’s **Second Order Market** addresses electric energy externalities, specifically efforts intended to mitigate negative environmental impacts resulting from the First Order Market. The Second Order Market can be further divided into two subgroups: the mandatory Second Order Markets (mSOM) and voluntary Second Order Markets (vSOM). The mSOM is driven by federal and state laws and regulates power plant emissions and mandates the increased use of renewable energy, energy efficiency and demand side management. The vSOM focuses primarily on serving demand for voluntary financial support of the expansion of renewable energy but with a strong underlying drive to decrease power plant emissions such as NOx, SOx, mercury, particulate and CO2, the predominant greenhouse (GHG) gas in the atmosphere many scientists believe to contribute to anthropogenic climate change.

By definition, both mSOM and vSOM commodity offerings demand cost premiums compared to the energy and capacity commodities available in the conventional First Order Market; otherwise, the products, e.g. renewable energy, would fall within the First Order Market domain. One might reason that the mSOM represents the upper boundary condition at which legislative and regulatory bodies can act as reasonable proxies for electric energy consumers, as a group, in achieving wide-ranging, but nonspecific, externality-based goals and objectives relating to environmental protection. Such limits of the mSOM give rise to the need for a vSOM. However, electrical energy and capacity, and even the environmental externalities associated with the mSOM and vSOM, offer only utility-type value propositions to consumers. In accordance with accepted economic principles, utility values are limited to their usefulness in satisfying human wants. The idea of utility is fundamentally psychological because the idea of utility value is dependent on a consumer’s assessment of a product or service’s power to satisfy his or her wants which also makes utility
value determination relative to each individual. Theoretically, utility possesses no ethical or moral significance nor does its consumption necessarily result in a salubrious outcome (there are both negative and positive utilities). This fact notwithstanding, First and Second Order Markets exemplify pure utilitarianism which is generally defined as an attempt to bring about the greatest good for the greatest number of people – not the greatest good for each individual.

While the federal and state regulated First Order Market and mSOM are resigned to operate within the paradigm of utilitarianism under strict regulation, i.e. limited to providing the greatest good for the greatest number of people rather than a focus on creating the greatest good for each individual, the vSOM is not subject to such restriction. Nonetheless, the vSOM market offerings today offer only the lowest possible purchase involvement with utility-type value propositions. The result is conformance to market principles restricted to utilitarianism where supply-side agents fail to tailor their products and services to help individuals who participate, or otherwise would participate in the vSOM, succeed in achieving their true higher-level goals and objectives. The truest and deepest level concern of such individuals is the protection of biota (human beings, flora and fauna) inhabiting the earth’s ecosystems not the pursuit of the means to achieve these ends such as increasing energy efficiency, reducing emissions or installing more renewable energy.

This failure to both understand and construct a market in harmonic resonance with the true motivational forces of individuals who are engaged, or who would otherwise be engaged, in the vSOM if not for the mundane value propositions of its product and service offerings, are complicit in contributing to what is commonly referred to as the “value-action gap”. The value-action gap refers to the perceived enigma whereby while many individuals express strong attitudes regarding the need to minimize impacts to the environment and espouse values consistent with this belief, there is an asymmetry between the actions individuals take and their stated values and attitudes about environmental preservation. However, drawing upon scholarly research, including Shalom Schwartz’s (1977) Norm Activation Theory and many other sources of information and research, it is hypothesized that what may appear to be a value-action gap is instead a “responsibility-value” gap. Taking personal responsibility for actions which negatively impact others is closely aligned with the “golden rule” which is a large plank in the platform of most individuals’ value systems.

A lack of ability to quantifiably determine personal responsibility for contribution towards energy-related environmental impact threats is a major factor in why individuals resist allocating financial resources towards voluntary mitigation actions to address environmental threats. This gives the illusion of a contradiction with their stated value systems. In reality, underlying motivations and factors influencing action are much more complicated. It is necessary to understand that that all such voluntary actions are motivated by what Abraham Maslow (Maslow 1972) characterized as self-transcendent needs, and it is hypothesized that financial resource allocations to mitigate threats are subject to a number of underlying behavioral motivation domains of which personal responsibility, while extremely important and the influence of which varies across multiple behavioral domains, is only one piece of a much larger puzzle.
Drawing heavily on Abraham Maslow’s later and lesser known work on his hierarchy of needs, it is hypothesized that it is primarily the base (physiological and safety (P/S) related motivated needs) and the peak (self-transcendence motivated needs) of Maslow’s hierarchy that map to underlying transcendent and non-transcendent P/S-level motivational domains. These domains exert influence over an individual’s decisions on how they will rationally allocate financial resources to mitigate threats across these domains. Between these two domains exists a strong prepotency of hierarchical need bridging the base of Maslow’s hierarchy (P/S need motivation) and its peak (self-transcendency needs), and it is further hypothesized drawing from the work of some of the world’s most renowned economists and economic philosophers, including those of Mises, Hume, Ramsey and Little, that under the influence of these domains, three independent variables: Personal Responsibility for contributing to environmental impact threat, R; the Time Until an Environmental Threat is Expected to Manifest, \(t_T\); the Tribal Affiliation to the biota of interest at risk from the threat, \(T_A\), and two constants (one of which represents an individual’s level of self-transcendency, PE) form the basis of the theoretical unified equation of the Third Order Market or “\(M(T)_R\)”. 

\[ M(T)_R[R, T_A, t_T(EI)] \]

Financial Resource Range

Financial Resource Limit

\[ M(T)_R = 100\% @ PE = 0 \]

Theoretical Voluntary Allocation of Personal Resources (%)

M(T)R

\(-100\%\)

\(+100\%\)

\(-99\%\)

\(+99\%\)

Non-Transcendent Physiological / Safety Motivational Domain

Transcendent Behavior Motivated Domain

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Maslow’s Base

Maslow’s Peak

Incident Energy in the Transcendent Domain

Knowledge Gap of Req’d Information (R, TA, EI, and \(t_T\)) to Rationally Allocate Financial Resources in Consideration of Lower Level Needs

(Spend Limited to Socialized Costs in 2nd Order Market, e.g. RPS Compliance)

Sub-Transcendent Behavior Motivated Domain

Willingness to Institute “Leverage”

Highly-To-Mildly Transcendent

Super Transcendent Domain

Super Transcendent

Financial Resource Limit

\[ K = 1; KG = 0 \]

M(T)R = 100\% @ PE = 0

\[ GATR (T_A x t_T) \]
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\[ \lim_{M(T) \to RL} M(T)_R = (T_A \times t_T)^Z + R \times (T_A \times t_T)^{PE} \]

*Where RL represents an individual's financial resource limit*

The Third Order Market is a commerce ecosystem that connects product manufacturers, service providers and consumers to the electric markets and natural environment by providing real-time information to all market participants to help facilitate the social learning required to:

1) Quantitatively determine Personal Responsibility for measurable threats to biota (or "bioreceptors") of individual interest directly resulting from manufacturing, consumption and purchase decisions which influence electric generation and delivery outcomes contributing to negative environmental externalities and;

2) Facilitate continual socialized learning to create, pursue, monitor progress and attain personalized transcendent goals associated with bioreceptor protection by offering a wide-range of consumer purchase alternatives and information communication technology (ICT) evaluation tools to aid in decision-making and;

3) Determine a rational allocation of financial resources to achieve measurable transcendent goals associated with bioreceptor protection by the ability to determine Personal Responsibility, evaluate present value costs of available options, assess future financial risks and risk hedging opportunities associated with transcendent decisions.

Due to the significant barriers to entry into an electric market rife with inherent inefficiencies that regulation seeks to manage, regulators and the electric utility monopolies create a formidable force set against any attempt at transformation by new market entrants. Focused on perfecting the First Order Market by consolidating their market power within the central station power model with no experience in transcendent aims and lacking any motivation to advance a transformation agenda, investor owned utilities remain ensconced safely behind a formidable triangle of barriers represented by economic (in)efficiency (giving rise to regulation), economic scalability advantages and privileged access to electric transmission/distribution relative to emergent entrepreneurial threats. The two most common strategies new market entrants pursue in transformation attempts: direct assault upon or direct collaboration with investor-owned utilities (often collaborating only as a result of regulatory or legislative requirement) are ineffective, rarely successful and inherently flawed. Even when successful, these strategies can take decades to execute.

The path to successful electric market transformation is not through the high voltage electric transmission and distribution wires but rather through the low voltage wires of internet-based e-commerce carrying information. Only by leveraging the power of ICT and curating the information transcendent individuals require to cross the Knowledge Gap by facilitating social learning within a newly created social network of shared rule-making of sufficient density to develop an understanding about their relationship with the natural environment can individuals reach Incident Energy, i.e. the point at which rational decisions can be made about the allocation of financial resources to mitigate longer-term environmental threats. The Third Order Market will be revolutionary, powered by entrepreneurial forces exogenous to the regulated electric market and its walls erected to keep “disrupters” at bay. However, the Third Order Market’s value will not be created as a result of disruption but rather by transformation through leveraging ICT, and its
products and services are complimentary to and in better alignment with the true goals of most supply and demand side stakeholders.

Evolutionary change for First and Second Order Market stakeholders equates to risk; therefore, in the absence of competitive treats that the protection of state and federal regulation affords, it is inevitable that transformational forces must be exerted by libertarian, competitive market principles in an open commercial market that envelops all of consumer activities rather than just those of the electric market. The Third Order Market is characterized by transcendent utilitarianism, one that surpasses the commodity-centric utilitarianism of today's First and Second Order market. It is tailored to consumer product and service providers and consumers of those products and services – sub-transcendent and transcendent alike - addressing a myriad of strategic shortcomings and inherent value proposition weaknesses plaguing the vSOM.

These deficiencies in the vSOM, which are legion, contribute to the perceived value-action gap which the Third Order Market is designed to abolish, which will, in turn, make obsolete the majority of the vSOM market or cause the extant market to be converted into Third Order Market products and services. The problems with the vSOM the Third Order Market will solve include, but are not limited to the following:

- Ongoing failed market transformation attempts resulting from flawed strategy and tactics which assert non-transcendent, P/S level threats to elicit self-transcendent responses from the consumer market when threats do not approach the non-transcendent, P/S level domain.

- Failure to address the perception of an infinite carrying capacity of global environmental resources and create meaningful Personal Responsibility resolution

- Failure to recognize that social distance is not an unalloyed function of time and masks the variable of Personal Responsibility

- Failure to honor the line between self-transcendence and societal responsibility

- Failure to provide a hedge against consumer over-allocation of financial resources for transcendent consumer decisions (i.e. voluntary funding of environmental threat mitigation)

- Failure to provide opportunities for consumer economic returns and both financial and transcendent level ownership positions in consideration of voluntary funding contributions to mitigate environmental threats

Because there exists a relatively robust vSOM market today, there is no question of whether serving a market predicated, at least partly, on transcendent motivations can be profitable. Moreover, the value propositions of a Third Order Market for the consumers are demonstrably superior, and the costs to mine dormant information and develop this information into an emerging market by leveraging today's ICT will result in product and services at cost parity with those offered today.
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The Third Order Market is infinitely scalable. It will expand the market by offering financial returns for both producers and consumers alike. It will remove existing vSOM barriers that preclude mildly-transcendent individuals from acting by supplying information to quantify Personal Responsibility and estimate environmental threat levels to determine rational financial allocations predicted on these forces. It will benefit in the long-term from what research indicates is an ongoing inter-generational shift from material to non-material shifts in value systems of Western culture.

Lastly, because research indicates that individuals do not require, nor do they want, detailed scientific information to take action but rather a simple and better understanding of their relationship with the environment and how their actions disturb (or benefit) that relationship, the first entrepreneurs to provide this service and establish the market are unlikely to be upended as a result of more, newer or increasingly complex information. The first entrepreneurs to create market architecture, commercialize the market and begin orchestrating transactions of this inter-generational market will establish a monopoly position. Although the Third Order Market will heavily leverage ICT, those early entrepreneurs who establish and begin management of the market eco system enterprise will not be subject to technological obsolescence because the value proposition is timeless. The Third Order Market is “antifragile”, and unlike the failed Chicago Climate Exchange, the success of the Third Order Market does not rely on socio-political factors or any action by governments to initiate new legislatively mandated environmental compliance markets; rather, it will likely only benefit from future stagnation and is inoculated from negative impacts of simple utilitarianism characterized by mSOM activity.¹

Because it is difficult for governments to act outside of the non-transcendent/PS safety motivated domain and act transcendently on behalf of their constituents, it is unlikely that nation states will take aggressive action (as evidenced by the limited action of the U.S and China related to the Paris Agreement) to curb GHG emissions. This inures to the benefit of the ability to establish, grow and sustain a Third Order Market and possibly utilize these same governing principles and laws of the market to expand outside of the electric sector. A deconstruction and thorough examination of today’s First and Second Order Markets married with extensive research into behavioral motivations as they apply to the perceived value-action gap suggests there is an extensive opportunity for creative, ICT-centric entrepreneurs to transform a significant portion of the electric market sector. The defining characteristics and 6 universal laws of this Third Order Market eco system are as follows:

Definition of the Third Order Market

The Third Order Market is a commerce ecosystem that connects product manufacturers, service providers and consumers to the electric markets and natural environment by providing real-time information to all market participants to help achieve and sustain the social knowledge required to:

1) Quantitatively determine personal responsibility for measurable threats to bioreceptors of individual interest directly resulting from manufacturing, consumption and purchase

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decisions which influence electric generation and delivery outcomes contributing to negative environmental externalities and;

2) Facilitate continual socialized learning to create, pursue, monitor progress and attain personalized transcendent goals associated with bioreceptor protection by offering a wide-range of consumer purchase alternatives and ICT evaluation tools to aid in decision-making and;

3) Determine a rational allocation of financial resources to achieve measurable transcendent goals associated with bioreceptor protection by the ability to determine personal responsibility, evaluate present value costs of available options, assess future financial risks and risk hedging opportunities associated with transcendent decisions.

The 6 Universal Laws of the Third Order Market and the Complimentary Market Ecosystem Framework

1. The true and deepest level concern of a self-transcendent individual (IMV) who considers a voluntary environmental impact mitigation action (VMA) is the protection of bioreceptors (i.e. biota: human beings, flora and fauna) inhabiting the earth’s ecosystems.

   • Every bioreceptor represents a unique affiliated relationship to an IMV. At the very root of an IMV’s motivation is an underlying self-transcendent goal which is the protection of bioreceptors of interest, rather than the means to achieve these ends such as increasing energy efficiency, reducing emissions or installing more renewable energy. Transcendent goals are virtuous aims derived from a sense of meta responsibility (self-transcendence), and a deep connection to other biological species and the earth’s ecosystems and is the source of goal attainment motivation.

2. There exist three primary behavior domains which influence an IMV’s motivations to engage in VMA to mitigate the risk of environmental impacts to bioreceptors of interest and the earth’s ecosystems.

   • These domains are the sub-transcendent, non-transcendent (P/S level) and transcendent domains. Demand for product and services within the Third Order Market ecosystem are subject to the behavioral influences of one or more of these behavioral domains, often, simultaneously, and theoretically predictable based on an IMV’s positioning on the domain map and in accordance with the unifying equation of the Third Order Market, $M(T)_{R}$.

   • The purpose and primary value proposition of the Third Order Market is to enable consumers to achieve transcendent goals related to energy-related environmental impacts. Any VMA that is not in direct response to mitigate a non-transcendent, P/S level risk to oneself or a close tribal affiliate is a self-transcendent action and represents the pursuit of a self-transcendent goal.
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3. There are three primary forces in the Third Order Market which describe the variation in the allocation of an individual's financial resource allocation towards mitigation of environmental impact threats.

- Financial resource allocation response to environmental impact threats across the three primary behavioral domains can be explained by three primary forces represented by three independent variables: Tribal Affiliation to a bioreceptor of interest at risk, TA; Time for Environmental Threat to Manifest affecting the bioreceptor(s) at risk, tT and Personal Responsibility, R, for contributing to the threat affecting the bioreceptor at risk.

4. M(T)R is the unifying equation of the Third Order Market.

- M(T)R approximates, quantitatively, a rational allocation of an individual's financial resources as a response to mitigate environmental impact threats in consideration of the three primary forces in combination of the inherited traits and the sociocultural and experiential history unique to each IMV explained by two constants. They are the Price Elasticity of Transcendence, PE; and the Elasticity of Financial Resource Allocation to Affiliation-Adjusted Threat Response, Z.

5. The Third Order Market must function outside the constraints of utilitarianism of the First and Second Order Markets, separate and as a distinct but an integral part of both supply and demand side activities of daily commerce which result in anthropogenic environmental impacts.

- The influence of Third Order Market activities must expand beyond the reach, restrictions and associated barriers of electric market and represent an expansive, scalable, sociocultural network with significant density, interconnectedness and rule sharing. To the extent possible the systems should be predicated on the use of vernacular science, relatable and intellectually accessible to a wide range of market participants.

- At its highest functioning level, the Third Order Market must offer consumers both financial and meta ownership opportunities to participate in meaningful ways in the protection of the bioreceptors and the earth’s ecosystems. Wherever possible, and in accordance with supply side product manufacturer and service provider’s financial wherewithal, IMV’s should be reasonably hedged against future, non-transcendent, P/S level risks borne by engaging in a VMA.

6. Third Order Market transactions must be supported by real-time (or near real-time) information consistent with both how human beings prioritize and react to short-term, peripersonal threats and planning for long-term, extrapersonal resource acquisition based on prepotency of need.
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Due to the prepotency forces of the non-transcendent, P/S level domain and contemporary financial decision-making required for daily commercial activities, an IMV must be provided real-time information for evaluation of P/S level risks set against self-transcendent goals to make rational financial resource allocation decisions. Real-time information pertaining to $T_A$, $r_T$ an $R$ is requisite to the ability for an IMV to bridge the Knowledge Gap, attain Incident Energy and orient themselves on the behavioral domain map to plot the safest and most efficient route to personalized transcendent goal attainment.