

CRISIS & energy markets! *a think tank* - REP[©] Index Summary



ENERGY is the central nervous system of the US economy. Sound energy policy undeniably is essential for a prosperous and dynamic economy. Conversely, dysfunctional energy policy will yield a sluggish and static economy. Energy policy is thus at the center of economic debates in Washington, DC and the states. Because energy policy involves the intersection of so many important societal values, *caem* identified the need for a comprehensive measurement tool that could take into consideration energy's complex impact and be applied consistently across all energy policy plans.

ECOVIERGY is a term created by *caem* to describe the inseparable economic consequences of environmental and energy policies.

RESPONSIBLE ECOVIERGY POLICY OR REP INDEX uses microeconomic principles represented by **10 REP Attributes** to score the ecoviergy efficacy of an energy plan and grade the plan from A through F. A comprehensive description of the methodology used for calculating the **REP Index** is included in a 40 plus page document entitled the **Responsible Ecoviergy Policy Index or REP Methodology: Its Rationale and Explanation**. It explains how the **REP Index** is an indicator of a plan's consistency with microeconomics and defines each **REP Attribute**. It describes how these attributes would be applied to components of an energy plan and can serve to measure its effectiveness and project its impact on energy markets and the economy generally. It includes summaries of microeconomics analysis of policy tools commonly used to address energy issues and misperceived problems in energy that become common themes in energy politics. The **REP Reports** are the more comprehensive application of the **REP Methodology** to individual energy plans that results in the scores for each **REP Attribute** and an overall grade for the energy plan that serves as a quick indicator of how well the plan will support the function of markets and support economic stability and growth within the ecoviergy system. After each component of a plan is analyzed and graded, each plan receives a **REP Index Score** on a scale from 0 to 100 based on the degree of the plan's overall adherence to the **REP Attributes**, with 0 representing a lack of adherence and a departure from the microeconomic principles that have proven to support economic growth, and 100 representing a plan's full adherence to those microeconomic principles.

REP REPORT CARDS will show the score that plans receive for each **REP Attribute** and the overall grade of the plans being reviewed. This **REP Index Summary** is in the same format as the **REP Report Card** so that it might be used as a convenient summary of what each **REP Attribute** means and the microeconomic analysis it provides to help the public understand what scores say about an energy plan and how well a plan adheres to microeconomic principles as represented by its grade. It effectively summarizes the **REP Methodology**.

CRISIS & energy markets! a think tank (*caem; kay-em*) developed the **REP Index** to help inform the public debate on ecoviergy issues and policies addressing those issues. **REP** documents can be found at its website, www.caem.org. The **REP Report Cards** and the **REP Index Summary** are available for free to the public and can be found at *caem*'s website, as well as the **Cumulative REP Index Scores** where the scores of all plans analyzed can be compared by attributes. The comprehensive **REP Methodology and REP Reports Cards** are available for purchase individually or by subscription through *caem*'s website.

The REP Methodology and Microeconomic Principles

Supply and demand are constantly shifting. Price works to bring supply and demand into alignment. Prices for different sources of supply paid by different types of demand will send vital signals about what is the most efficient way to balance production and consumption of a very complex array of different energy forms and different energy uses. The importance of this point is critical in a microeconomic analysis of energy markets. Efficient prices are essential to determining the “efficient use of society’s scarce resources,” which should be the most compelling goal for ecoviergy policy, as well as for any other economic policy affecting markets.

Within the microeconomics’ context, the role of government is to ensure the development of the conditions that result in efficient prices. When efficient prices are driving supply and demand decisions, then the market can be relied upon to allocate different types of fuels to meet certain demands and to drive consumer choice as to whether to conserve or invest in more highly efficient technologies. There are many terms used to express this principle in ecoviergy policy discussions, i.e., neutrality, level playing field, colorblindness, etc.

A corollary to the efficient workings of markets is the role of government in defending their effectiveness. Government should narrowly tailor its actions to address real and measurable market failures, such as environmental externalities, and should avoid overreaching in its market intervention that can complicate price distortions in a competitive market. Severe distortions occur where policy tools are used to advantage one energy source over another and serve to choose winners and losers for political expediency. These principles lead to certain ecoviergy conclusions:

1. *Reliance on Market Forces:* The key role for government policy is to ensure that energy markets operate efficiently by relying on market forces, making appropriate interventions to address major market failures.
2. *Subsidies Are Suspect:* Use of subsidies should be suspect as a tool of energy policy.
3. *Mandates are Suspect:* Use of mandates should be suspect as a tool of energy policy.
4. *High Energy Prices Are Not Per Se a Market Failure:* The appropriate goal of energy policy should be efficient prices rather than low prices if they are achieved artificially.
5. *Reliance on Oil Imports Benefits the Economy:* The U.S. ecoviergy system is benefited from access to the lowest costs energy supplies, notwithstanding their origin. The economic theory of comparative advantage indicates that government should not take actions that interfere with market forces (e.g. ethanol or CAFÉ) for the sake of decreasing oil imports.
6. *U.S. Economy Is Not Dangerously Addicted to Oil:* Oil is finite. Markets can be relied upon to provide the price signal to consumers to consume other substitute energy forms when it becomes efficient to do so. Its price signal will spur innovation in alternative energy resources when required. If there is a perception of over consumption of oil, then oil prices should be evaluated to determine whether externalities need to be internalized via harm charges.
7. *Diversity of Fuel Resources Should Not Be a Goal:* Diversity for diversity sake is not an efficient economic goal. Markets, as stated above, can be relied upon to provide the price signal to consumers to use alternative energy forms when efficient to do so. Gasoline for transport and fossil fuels for electricity are appropriate if that is the markets choice once market failures have been appropriately addressed.
8. *Climate Change and the Carbon Externality Must Be Handled Responsibly:* Governments’ role is to determine whether carbon externalities should be addressed. Policymakers should recognize, however, that: where there may be significant uncertainties in projections as to the level of remedy required, if any, carbon policy must be rigorously market-oriented and meet reasonable cost-benefit tests. Ecoviergy goals would demand that the cost of carbon remediation should be weighed against other social consequences due to this allocation of finite economic resources.

Conclusion

In the almost 40 years since the OPEC Oil Embargo, government intervention into markets has proven unsuccessful in achieving energy goals. The energy market is victim of compounded regulations and often government policies are at cross-purposes, working against the other. Yet, government seems unable to learn from past experience.

Genuinely positive government actions to improve ecoviergy markets are indeed rare. Yet they are possible. Between 1983 and 1992, a series of steps were taken by FERC, DOE, and Congress, largely on a bipartisan basis, which revolutionized reliance on market forces for natural gas. Today, natural gas is the sharpest arrow in our energy quiver. Similarly, oil production, once thought to be on a permanent decline, is poised to become overtake Saudi Arabia as the largest source of global production. Unquestionably, progress has been made in air and water pollution by policies using market tools to cause internalization of pollution externalities. But measured against these few successes are a myriad of governmental failures. *Thus, caution and humility are sound values when considering intervention into energy markets.*

REP Attributes Total 100 Point	Explanation
<p>1. Identification of Symptoms/Crisis <i>Does the Plan properly identify problematic symptoms in the relevant energy market?</i> Maximum Points 5</p>	<p>The first attribute of a coherent ecoviergy policy plan evaluates how well the plan identifies and breaks down the right problem. What are the symptoms of the problem needing redress? This attribute is not meant to be prescriptive; it does not evaluate therapeutic options. Symptoms considered include market barriers, pricing inefficiencies, anticompetitive advantages and/or disadvantages, externalities, environmental impacts/harms. Examples in today's ecoviergy dialogue include carbon emissions, oil consumption, high energy prices, low energy prices, monopoly, overregulation, dysfunctional transmission grid and restrictions on supply options, etc. Determining the norm for ecoviergy is difficult. Identifications might include that the US imports 50% or more of its oil; that fossil fuels release carbon; that renewables are expected to compete against legacy fuels that have been historically subsidized; or that electricity prices are too high in the off-peak.</p>
<p>2. Diagnosis <i>Does the Plan correctly diagnose the disorder causing identified ecoviergy problems, whether caused by market or government failures?</i> Maximum Points 5</p>	<p>Attribute 2 analyzes the symptoms and makes a diagnosis. It asks the question: what is the underlying disease causing the symptoms identified under Attribute 1. The foundation of sound policy is the precept that markets work and should usually be relied on to achieve the most efficient outcome for most commodities. Efficient markets</p> <ul style="list-style-type: none"> • achieve equilibrium of supply and demand, • promote efficient development of new supplies, • encourage efficient consumption and conservation, • ensure the development of innovative technologies to meet new challenges, • include all relevant costs in the price of a good, • drive the allocation of capital to its highest and best use, and • promote rapid adjustments to unexpected circumstances. <p>Pursuant to the REP's microeconomic principles, energy policy should rest on an economic diagnosis of how energy markets are operating and how they are failing. Any symptom that indicates the less efficient operation of energy markets is diagnosed under the REP Methodology as either a market failure or government failure. It is important to distinguish between these two classes before rushing to prescribe a cure.</p> <p>The four dominate market failures that apply particularly to energy are 1.. Externalities; 2. Market Power; 3. Public Goods; 4. Asymmetric Information. Government failures that are particular to energy policy can be attributed to: 1. Fatal Conceit; 2. Iron Triangle; 3. Regulatory Capture; 4. Compounded Regulation; and 5. Crowding Out. Two politically favored policy tools used in an attempt to control outcomes that are subject to the above regulatory deficiencies are: 6. Subsidies 7. Mandates..</p>
<p>3. Cure <i>Does the Plan propose functional solutions to the disorder that has been diagnosed?</i> Maximum Points 20</p>	<p>The REP Methodology evaluates a plan's specific policy tools intended to address the symptoms and cure their cause as identified by the plan. A plan could correctly assess problems and diagnose their underlying cause, but design a therapy that is subject to the deficiencies discussed earlier.</p> <p>Markets are in a constant state of self-correction as supply and demand work to find equilibrium in response to price signals. Market competition is the act of creative destruction. It eliminates the inefficient producer and channels financial resources into more productive areas. Government intervention is not only not required in such situations but is obviously counterproductive to the goals of an efficient market. There are times, however, when government intervention is <i>necessary to rectify an actual market failure</i>. However, the remedy should be appropriate for the diagnosis, tailored to address the cause of market distortions. Often ecoviergy policy includes treatments for the symptom, without considering the underlying cause. The effects of environmental externalities are often treated by using subsidies and mandates to offset the higher production costs of renewable energy so that they can compete with fossil fuel, without correcting the underlying externality. The remedy in such case only adds more price distortions, as the market responds to erroneous price signals, which the economic impact of market failure, in turn, is exacerbated, to which policy makers then respond with more regulation (compounded regulation).</p> <p>Thus, it is absolutely necessary to engage in a thorough analysis of each energy resource to evaluate whether it is subject to (i) market failures that require government intervention narrowly designed to correct the diagnosed failure; or (ii) compounded government regulation. Further, it is important to evaluate proposals through the lens of experience gained from a study of history, including both successes and cyclical failures of government energy policy. Within this context, the REP Methodology, as discussed in Section I above, adopts a First Principles framework by identifying existing regulatory impediments to efficiency before adding potentially new impediments.</p>
<p>4. Proportionality <i>Are the Plan's solutions cost effective and proportional to relevant harm?</i> Maximum Points 10</p>	<p>The Proportionality Attribute measures how well a plan's proposed solutions are tailored to address the problem. Policy is often driven by politics and not economics, which often results in a policy that overreaches or is otherwise misguided. The non-partisanship of the REP Index is seen in the objective measurement of proportionality between diagnosis and cure, consistent with microeconomic principles and blind to a plan's partisan origin. The REP Index will consider not only the overly broad use of policy tools, but also using the wrong tools rather than those tools that would have been more appropriate for the problem diagnosed. This may be a good point to emphasize the issue of political feasibility. The REP Index is never concerned with whether a solution is politically feasible. The sole focus is on the analytical robustness of the proposed solution. Accordingly, many times the REP Index will recommend actions that are not politically possible. Nonetheless, it is useful to have an objective test against which to measure a given proposed solution</p>

REP Attributes	Explanation
<p>5. Daedality <i>Do the solutions effectively address complexity & interconnectedness of the ecoviergy system?</i> Maximum Points 10</p>	<p>The term Daedalian is derived from the story of Daedalus and his construction of the labyrinth for King Minos. The dictionary definition of daedal is “ingenious and complex in design or function; intricate.” Daedalian” can describe the interrelatedness and interconnectedness of markets among varying substitutable goods and is used to indicate the degree to which a policy is designed in recognition of the complexity of the energy system and energy’s interconnectedness with other economic sectors. It is demonstrated in the historical anecdote referenced by Milton Friedman where ink pens increased its market share during the OPEC Embargo. At the margin, some consumers chose wood as a substitute good for heating rather than heating oil, which increased the price of wood used in pencils; which, in turn, increased the price of pencils relative to pens. Another example is the relationship between subsidies for corn ethanol and ensuing impact on food prices demonstrates the daedalian complexity of markets and the fallacy in central planning of any economic sector.</p> <p>Energy is a multifaceted commodity consisting of a complicated infrastructure of exploration, production, delivery, conversion, and consumption. It is analogous to the neural network system in that it feeds into and is integral to every other commodity and service in our economy and is responsible for relaying essential price signals, albeit pleasurable or painful, between supply and demand. There are many supply options to meet energy demands. There are also many different types of demand that can be differentiated, requiring or preferring specific types of energy, all involving an understanding of very technical matters. Consequently, balancing of supply and demand at efficient prices would require comprehension of an indeterminable number of scenarios across these markets.</p>
<p>6. Adaptation <i>Do the solutions accommodate adaptability to changes in facts or technology?</i> Maximum Points 10</p>	<p>Policies should allow rapid adaptation to changing circumstances and not be proscriptive or outcome-driven. Leaps in technology are generally unpredictable. Yet, the design of past energy policy has attempted to advantage politically favored “winners” through subsidies and technological mandates. Proscriptive policies risk the solution becoming institutionalized. They can constrain, if not preclude, the ability of markets to adapt. Often, the objective of politics is to protect the status quo of big business and the retention of political power that overrides the economic interest in functional markets. Markets should be free to accommodate whatever innovation may emerge. Policies addressing externalities should be designed to utilize the market’s capability to adapt and respond to changing emissions levels, new scientific information and technological advances.</p>
<p>7. Innovation <i>Do the Plan’s solutions promote effective innovation to address ecoviergy problems?</i> Maximum Points 10</p>	<p>Innovation will be needed to solve 21st Century energy challenges. Innovation has transformed this century’s digital industries and innovation can do the same for energy. However, the 20th Century regulatory model has created market barriers to innovation. Policy tools such as command-and-control have been prescriptive in mandating technology. Innovation and private investment should not be chilled because government subsidizes different technologies. Technology mandates divert private intellectual and financial capital from investing in research and development that could result in innovation outside the political box.</p> <p>Given the long list of supply options, demand needs and policy challenges, ecoviergy plans should be designed to allow markets to unleash the forces of ingenuity. The rules of creative destruction outlined by Schumpeter provide a firm grounding for the importance of innovation in advancing markets. “The opening up of new markets ... incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism.” Displacement of old technologies promotes a vibrant and sustaining functioning energy market, and, in turn, contributes to a strong economy.</p>
<p>8. Neutrality <i>Does the Plan create a level playing field; address externalities; and is color blind as to market process outcomes?</i> Maximum Points 10</p>	<p>As the Fatal Conceit doctrine cautions, policy makers should be wary of predicting future outcomes. Government has an important, indeed critical, role in helping markets to self-regulate, intervening to mitigate obstacles to efficient competition. However, intervention should be to create a playing field that allows energy resources to compete on the basis of their own efficiencies, which the REP Index refers to as neutral pricing. Neutral pricing exists in a market absent of subsidies, externalities, government regulation, and unequal market access that exceeds the need to address an identified market failure. A tax or harms charge on a fuel to internalize a pollution cost helps to achieve neutral pricing. Neutral pricing is a precondition to effective markets.</p> <p>Each energy player advocates a policy for its own “competitive advantage” which distorts the market and justifies, in turn, increased rent seeking by other players. Thus, microeconomic principles disfavor subsidies, price distortions, and other artificial advantages provided to an energy resource or industry segment, including energy consumers, which are not justified by a rigorous market/government failure analysis. The REP Index will favorably score a plan that moves markets to neutrality.</p>
<p>9. Efficacy <i>Will the Plan’s solutions promote a sound ecoviergy system?</i> Maximum Points 10</p>	<p>An ecoviergy plan is intended to accomplish a set of specified goals. This Attribute weighs the ability of a plan to achieve its intended objectives and its ability to become economically sustainable. A plan’s political correctness or its political feasibility, whether the plan can be enacted, are not factors weighed by this Attribute. While political necessity may argue for a compromise, a REP Report will objectively evaluate such compromises and consider the impact on the plan’s efficacy and economic soundness. California’s electric deregulation bill demonstrates the disconnect between political feasibility and policy rationality. The bill passed unanimously in both the California Senate (39 to 0) and House (77 to 0) and was signed by a Republican Governor (Pete Wilson). However, notwithstanding its 100% political support, its mandates and other intervention in the workings of California’s energy market helped caused the infamous California energy crisis. Political efficacy to placate special interests does not equate to economic sustainability.</p>
<p>10. Black Box <i>Are there aspects of the Plan’s ideas that are not captured?</i> Maximum Points 10</p>	<p>Inevitably, a significant aspect of a plan may not be fully captured or addressed by the first 9 attributes. To the extent that it is unique and non-traditional within energy strategies being discussed to warrant additional attributes, a “black box” attribute allows such characteristics to be considered in a plan’s scoring, either positively or negatively according to their contribution to the efficient workings of the energy market and the efficacy of the plan.</p>

The **REP Index Methodology**, the **REP Report Cards**, and the **REP Cumulative Scores** are available to the public free of charge. The **REP Reports** on individual plans are available for purchase individually or by annual subscription.

Ken Malloy, Executive Director and caem Founder, is the creator of the REP Index. He was named one of the five Energy Innovation Leaders by *Public Utility Fortnightly*, has been involved in energy policy for 30 years. Ken started his career as a law professor teaching in the field of economic regulation. He served as an attorney and policy director with the Federal Energy Regulatory Commission, as Deputy Executive Director and General Counsel with the Illinois Commerce Commission, and then with the US Department of Energy's policy office for over 10 years specializing in natural gas, electric, and oil competition policy. He worked with an international consulting firm developing an index ranking the emergence of competitive natural gas and electric retail markets as part of Project ACCESS. Ken has run non-profit think tanks on energy policy that he founded. While CEO of the *Center for the Advancement of Energy Markets*, he developed the **Retail Electricity Deregulation** or *RED Index* to rank state/national/international policies on electricity competition. The *RED Index* was featured in a full page spread in *USA Today* after the debacle in California. (<http://tinyurl.com/4tev6kx>) Ken's role in the reform of natural gas and electric markets during the 1980s and 1990s underlies his approach to ecoviergy policy.

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