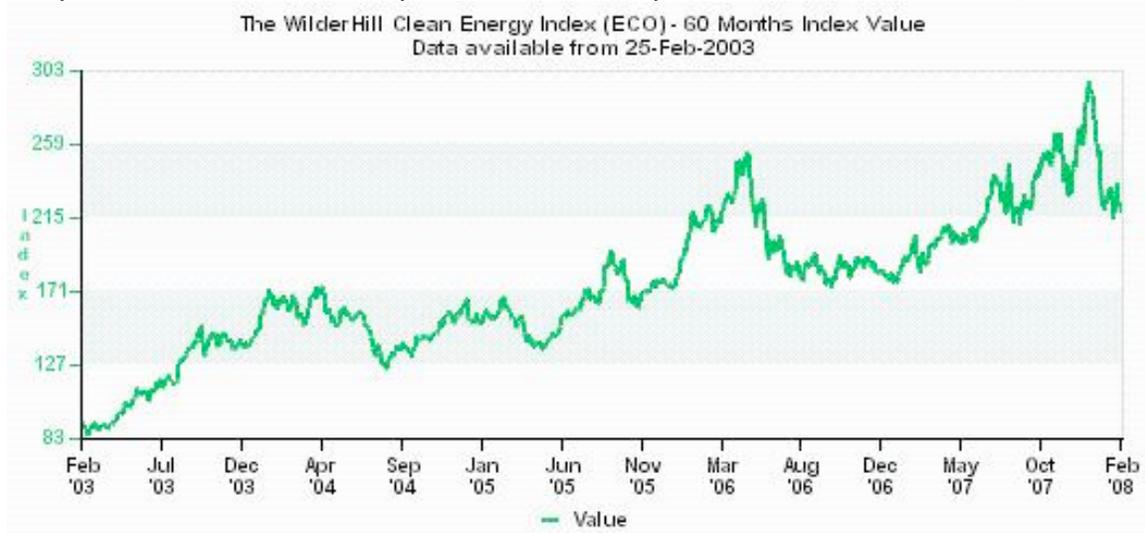




## **Q1 2008 Quarterly Report: WilderHill Clean Energy Index<sup>®</sup>, March 31, 2008**

First Quarter of 2008 opened with the Clean Energy Index<sup>®</sup> (ECO) at 288.21, and it closed at 203.56 for a negative Q1 return of -29.38%. A very robust strength to the downside thus characterized Q1. However, that strong downside performance in Q1 wasn't greatly surprising since it came on the heels of a 'blow-out' Q4 2007 with ECO up +20%, as well as after four consecutive positive Quarters with ECO up +58% for the 2007 year.

Consider then to put it into context that Q1 showed significant retrenchment downward only after sizably-volatile-to-upside Q1 through Q4 2007, when this WilderHill<sup>®</sup> Index (ECO) first gained +8.4% in Q1, then another +9.9% in Q2, further +10.6% in Q3, followed by still larger +20.1% in Q4. The probability then of some sharp spike downwards with regression to mean thus seemed heightened late in 2007, and correction early in '08 arguably was not especially unlikely. Given that recent history even the strong moves over Q1 2008 were perhaps of no great surprise. The following Chart illustrates movement over the past 60 months and so helps to calibrate comparative size of this latest Q1 decline:



To be sure, the acute sharpness of this sell-off across clean energy subsectors and starting almost on January 1<sup>st</sup> creates powerful figures by coincidence for the Year-to-date, and the Q1 performance numbers. That fall likely was pleasing to those 'shorting' the sector from atop Q4 highs; it is a net good too for the long investors patiently waiting to buy yet more here on dips – and so even abrupt downturns can be an event useful to some.

Then on March 10, 2008 the Index achieved a closing low of 193, a nadir at which point it was down strongly by around -33% for Q1, and so for 2008 to that point. (We recall in a bit of a coincidence the markets in the U.S. once rose to crescendo on March 10<sup>th</sup> (of 2000) giving some poignancy to that date as an inflection point). ECO again touched that same low-mark on March 19<sup>th</sup> plumbing once more depths of these serious Q1 bottoms.

Parenthetically Q1 saw sizable daily moves 4% or more down/up in intra-day action too. Our Index captured those nicely too though the End-of-Quarter-only figures alone can't well illuminate those data, due to its insufficient granularity or resolution. Steep declines (or gains) within a day are notable, although generally not seen in Quarterly data.

For the historical (daily) values of the Index (ECO) backtested since the year 2000, see [http://www.amex.com/othProd/prodInf/OpPiChartDet.jsp?monthVal=3&Product\\_Symbol=ECO](http://www.amex.com/othProd/prodInf/OpPiChartDet.jsp?monthVal=3&Product_Symbol=ECO)

### **What Happened in Q1? A look at the January Decline in clean energy globally:**

Analysis seen in a press release from the *WilderHill New Energy Global Innovation Index* (NEX) – an independent and global Index, which stands apart from ECO – can help shed light on this fairly remarkable downturn seen over January of 2008. That release for NEX Index shows that non-negligible declines were felt across every sub-sector in clean energy (globally). While the text is for NEX where most stocks are listed outside the U.S., the NEX data still usefully shed light on January's action, so we excerpt that release here:

Excerpt from BusinessWire.com, February 5, 2008  
<http://www.nex-index.com/pdf/BusinessWire.2.5.08.pdf>

....

LONDON - (BUSINESS WIRE) - Clean energy stocks worldwide as measured by WilderHill New Energy Global Innovation Index (NEX) saw a recent marked decline of -18.2% for January 2008...

...

All sectors of clean energy declined substantially the first three weeks of January 2008 with uncommonly large drops from late 2007 highs. Energy efficiency, and the biofuels & biomass sectors each saw much downwards movement as their constituents fell, as did components in wind, and in solar power.

Week to week declines heightened sharply in middle of January when the NEX Index plunged 16.7% to 347, as a credit crunch continued to make its presence felt and fears of U.S. recession increased.

Among the pool of 86 NEX global constituents, only two stayed in positive territory during those mid-January declines, one a Chinese biodiesel firm, and one a U.S. LED company that made gains of 5.3% & 4.3%, respectively.

The solar sector fell 24.8% at middle of the month, the heaviest sector loss and it accounted for the five worst performances within the NEX Index. A Norwegian PV wafer manufacturer was off 44.2%, while the only U.S. company then in the bottom five, dropped 34.2%. The remaining three, all in Germany, also suffered heavy losses.

Small-hydro and geothermal companies represented in NEX under the 'Renewable – other' heading, dropped 15.2% as two geothermal companies, one in the U.S. and one in the Philippines, shed 18.2% and 17.2%. A large hydro Canadian firm moved down 14.6%, while an Austrian large hydro utility was off 13.1%.

Wind companies also made losses of 15.2%, with one trading in Switzerland losing 30.3% owing in part to a weak preliminary earnings report. Two newly listed wind companies: a Belgian gear box manufacturer and Spanish wind asset owner and developer were down 21.6% and 19.8%, respectively, while a French firm in wind was no different, sliding 20.1%.

Biofuel and biomass-to-waste companies fell 14.3% with one Brasil-based firm down a substantial 25.1%. A U.S. ethanol company followed closely with a loss of 23.1%, and a Japanese biomass and waste-to-energy technology company fell by 21.5%, while two German biogas companies were down 20% and 18.4% respectively.

The irony of these mid-month declines has been despite the jitters in clean energy share prices – reflecting to a large extent what was happening in the wider stock markets – this sector itself has not been short of positive developments.

One estimate for instance is the U.S. has added some 5.2GW of new wind energy capacity in 2007, up an impressive 45% on the previous year. These and other statistics indicate growth in clean energy is increasing – despite recent stock declines.

For example the State of Texas now comes tops in the U.S. with a fast-paced 4.4GW of wind turbines installed, followed distantly by California with 2.4GW. Likewise there is continuing notable global growth in solar, and in energy efficiency.

In the last full week of January, the down trend then sharply turned around and the NEX closed up 6.1% for that final week; the wind sector was best performing with a positive 9.3%, solar gained 6%, and energy efficiency bounced back, up 5%.

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Returning to this Index (ECO), there was in sum a broad downturn in both the broader U.S. markets and clean energy stocks over January extending through almost all Q1. Consider then what are some implications of a downturn for WilderHill Clean Energy Index® (ECO) – as opposed to an active-managed fund? That question becomes an interesting one, given three mutual funds (not Indexes) have lately entered this space. We first turn some attention to ways an Index (with tracker), generally differs from an active mutual fund.

## An Index Delivers *Beta*; What's the Impact of *Alpha* in Active Management?

During any market downturn an item that may garner some thought is to compare the *Beta* delivered by a benchmark Index, with the *Alpha* that's in theory found in a mutual fund where an active management is added to the mix. In short *Beta* is the return one gets efficiently from the market – or by tracking a particular sector theme such as clean energy stocks. We note this Clean Energy Index® (ECO) is oft called 'the grandfather' of clean energy indexes and believe it is often seen as a benchmark; the *Beta* it arguably delivers and efficiently then, is the sector movement of clean energy stocks.

Consider thus one can 1) follow such a passive Index benchmark (or tracking ETF that allows actual investment); or one could instead 2) seek *Alpha* through the idea of finding value from 'active management'; there a mutual fund manager makes decisions aiming to 'beat the market' or outperform an Index (despite difficulty and added costs of doing so).

True, academic theory generally predicts active-management has a hard time beating benchmark indexes and in fact that prediction is generally born out in practice. Most active-managed mutual funds may underperform, over time, passive indexes; some studies have shown two-thirds+ of funds may underperform the market in a typical year (see below). However some active funds clearly *greatly* outperform Indexes, and given enough funds out there, there's always hope one can pick a winning fund ahead of time.

In the case of clean energy one *might* expect we *may* see passive, efficient Indexes outperforming (that is rising higher than) active funds when the sector itself is rising. Conversely an Index should be expected to likely *underperform* (to fall more steeply than) a mutual fund during periods of sector decline... in short it should be more volatile.

Why? Passive indexes have lower costs, regularly are fully invested, have no cash cushion, and also are not as susceptible to 'stock-selection risk' (sub-optimal 'stock picking'); Indexes *may* appreciate more sharply than a mutual fund when the sector turns upward.

However when broader markets or the particular sector turns downward, an Index being fully invested captures all that decline, unlike a mutual fund that may have a built-in cash cushion. An Index again being so transparent has no defensive positions/cash, no underweighting, nor shorting of stocks a manager deems 'overvalued', it can fall more sharply. In sum an Index often shows stronger action up, and similarly falls much further down.

This is indeed what's oft seen in practice where a market sector includes benchmarking Index (with ETF tracker) – and active mutual funds focusing there as well. In those cases the passive Index often is more volatile perhaps scaling higher summits and 'dropping like a rock' to lower lows compared to a mutual fund in the same sector. A mutual fund could well be preferred for those who are concerned about volatility; in part for this reason we think it useful there's now an option of three recent mutual funds in alternative energy.

Interestingly too it can be intriguing from an academic perspective to briefly see how the 3 active funds move alongside the Index (ECO). Last Quarter we touched on the first fund; the chart below from inception of the second of these 3 mutual funds compares the three –plus NASDAQ – to ECO's tracker (PBW, **in green**) showing these differences:



The Chart above shows perhaps expectedly, that the ECO tracker for this Index (PBW in green) generally seems to reach the greater highs during upturns. Conversely during the sector downturns we can observe those 3 mutual funds do not drop as far, nor as fast.

As noted then an alternative energy mutual fund could well be a preferable vehicle for those concerned about volatility of this Index (ECO), or downturns. On the other hand a mutual fund may face its own problems of higher costs, a lack of transparency, no intra-day trading, and tax-inefficiency compared to the fairly efficient Index/ETF tracker. So there is no clear 'winner': each has its traits with an Index (and ETF) generally most efficient. Plus ECO is a purer vehicle more specific to clean—not “alternative”—energy.

A pertinent question perhaps becomes: When may we see an upturn again in the clean energy sector, given a current marked downturn? To glean just bits of possible historical relevance from past declines, we observe a previous sizeable run-up had occurred in Q1 of 2006 and that it gave way to a downturn that lasted for the subsequent two Quarters.

In that case First Quarter of 2006 started with the Index (ECO) coincidentally and yet interestingly closing up each day well into January: the first day down didn't come until January 20, 2006. Thereafter there were only two days that ECO closed down over the whole month. Though one might have thought upwards-volatility in January could prompt subsequent strong declines in February or in March, that First Quarter of 2006 nonetheless still closed up at a remarkably sizeable +31% for those first 3 months.

Starting Second Quarter 2006 from 227, a decline began and the Index closed Q2 down at 201 for a negative return of -11%. Third Quarter 2006 closed down strongly again on September 30 at 176, for a negative return of -14% and so notably extending a downwards trend over two consecutive Quarters. Fourth Quarter 2006 closed with the Index at 182, a small positive Q4 return of +3%. Hence in 2006 and after upwards-volatility from the start, there was a period of two Quarters before upwards movement returned. Past results do not indicate future returns of course, they merely provide some interesting data for what has been. In our present case of 2008 the downturn was noticeably more compressed, and that may impact the ultimate duration of the downturn seen in Q1.

Either direction what one does notably get in ECO is some significant non-correlation with broad markets. Yet what can be done in downmarkets? Academic research indicates there is generally no safe way to avoid all downturns; indeed it's hard for active funds to 'beat the market'! Weathering downturns may be simply one path, if one accepts the difficulty of consistently guessing both rightly & ahead of time, which way markets will next turn.

Seen this way even the strong correction to clean energy in early 2008 may be expectedly part and parcel of this volatile arena. Corrections can arguably even be seen as healthy(!) for the clean energy sector, over the long term, by correcting excesses, exuberant returns and high P/E ratios that may creep in after long run-ups. Whether a mutual fund will outperform an Index here, over time, is also an interesting topic; it's one that we'll return to in future. We move next to 2 further excerpts regarding Indexes & active funds.

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**“The \$100 billion question: Can you beat the Market?”**

By Mark Hulbert  
New York Times

Investors collectively spend about \$100 billion a year trying to beat the stock market. That's the finding of a rigorous effort to measure the total cost of Americans' efforts to surpass the return they would have received by simply holding a stock index fund. The huge price tag helps explain why beating a buy and hold strategy is so difficult.

The study, “The Cost of Active Investing,” began circulating earlier this year as an academic working paper. Its author is Kenneth French, a finance professor at Dartmouth College; he is know for his collaboration with Eugene Fama, a finance professor at the University of Chicago, in creating the Fama-French model that is widely used to calculate risk-adjusted performance.

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What are the investment implications of his findings? One is that typical investors can increase their annual return by switching to an index fund and eliminating the expenses involved in trying to beat the market. French emphasizes that this typical investor is an average of everyone trying to outperform the market, including the supposedly best and brightest who run hedge funds.

French's study also can be used to show how different the investment arena is from a so-called zero sum game. In such a game, any one individual's gains must be matched by equal losses by other players, and visa versa. Investing would be a zero sum game if no costs were associated with trying to beat the market. But with the costs of that effort totaling about \$100 billion a year, active investing is a significantly negative-sum game. The very act of playing reduces the size of the pie that is divided among the players.

Even that, however, underestimates the difficulties of beating an index fund. French notes that while the total cost of trying to beat the market has grown over the

years, the percentage of individuals bearing this cost has declined – precisely because of the growing popularity of index funds.

From 1986 to 2006, according to his calculations, the proportion of the aggregate market cap that is invested in index funds more than doubled to 17.9 percent. As a result, the negative sum game played by active investors grown ever more negative.

The bottom line is this: The best course for the average investor is to buy and hold an index fund for the long term. Even if you think you have compelling reasons to believe a particular trade could beat the market, the odds are probably against you.” (San Diego Union Tribune, March 9, 2008)

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### **“Money for Old Hope: A Special Report on Asset Management**

The Economist

March 1, 2008

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Hence the clients get engaged in a costly game of chasing the best performers, even though by definition they are bound, on average, to lose it; after costs the average manager inevitably underperforms the market. Figures from John Bogle of Vanguard, an American fund-management group, neatly illustrate the point. Over the 25 years from 1980 to 2005, the S&P 500 index returned an average of 12.3% a year. Over the same period, the average equity mutual fund returned 10% and the average mutual fund investor (thanks to his regrettable tendency to buy the hottest funds at the top of the market) earned just 7.3%, five percentage points below the index.

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So far, fund managers have been remarkably successful in maintaining their high fees, even in the face of lower investment returns in recent years. For more than three decades they have been fighting the challenge from “passive” rivals, which simply track the market through an index such as the S&P 500 or FTSE 100. But now there are passive versions of other fund-management styles too, even high-charging hedge funds. Asset managers, for so long the Bloomingdales and Harrods of finance, are facing competition from the sector’s Wal-Mart in the form of exchange traded funds (ETFs) a flexible vehicle that gives investors exposure to almost any asset class as low cost.

....

But since the development of index-tracking funds in the 1970s, the business of diversification has become commoditized. Clients can get access to a broad portfolio such as the shares in the S&P 500 index, for fees of a fraction of a percentage point of the assets a year. Indeed, the widespread use of indices has dramatically changed the fund-management business.

Originally, indices were devised (often by newspapers) as a means of assessing the stockmarket’s mood. Then it occurred to investors that they could use the indices as a means of judging whether their fund manager was doing a good job. As they

became more sophisticated, they realized that fund managers would be able to beat the index, in the long run, by taking more risks, and started to move to risk-adjusted performance measures that combined returns with volatility. These led to the development of alpha, a measure of a fund manager's skill, defined as the ability to produce superior risk-adjusted returns.

### It's all Greek

In recent years, there has been a move to separate the effect of alpha from that of beta, which is the portion of an investor's return that comes straight from the market. Thus if the S&P 500 index rises 8% and an American equity-fund manager delivers a 10% return, the investor gets eight percentage points of beta and two of alpha. Arguably, the client should pay top dollar only for the two additional points, not the eight he could have received even from a low-cost index-tracking fund.

But alpha is quite hard to define. As Andrew Lo of the Massachusetts Institute of Technology points out, to primitive people, everyday technology like cars and televisions can seem like magic. Alpha is a bit like that: it is the part of the Investment returns that we do not understand.

....

But betting on alpha really puts the onus on the fund manager to do better than the market. ....

Unfortunately for clients, the alpha delivered by the average fund manager is negative. That is because the performance of the average investor mirrors that of a broadly based index, before allowing for costs. Since costs are often sizeable, the average fund manager is doomed to underperformance.

Even when a fund a manager can beat the index, his problems are not over. Just as beta has been commoditized, so in a way, has alpha as academics have started to break down its components. Most stock market indices are dominated by larger companies, which means that active managers' best chance of outperforming lies in buying the shares of smaller companies. Another tried-and-trusted route to outperformance is to take a "value" approach; buying the shares of companies that look cheap on some valuation measure, such as the ratio of share price to profits. The rationale is that investors can become over-pessimistic about the prospects of struggling companies.

The increased sophistication of indices means that investors can get access to factors like value and smallcap stocks at low cost; they become betas. So fund managers who outperform with the benefit of these factors are not really demonstrating alpha at all.

Indeed, there are now very few markets that investors cannot access cheaply thanks to the explosive growth of a vehicle known as exchange traded funds (ETFs). These are quoted stockmarket vehicles that hold baskets of shares designed to track a benchmark. The first one was launched in 1993, By 2000, ETFs had just \$74 billion

in assets. But by June last year there were more than 1,000 products with just over \$700 billion in assets, estimates Morgan Stanley, an investment bank. By 2011, the bank forecasts, the sector will have \$2 trillion under its belt.

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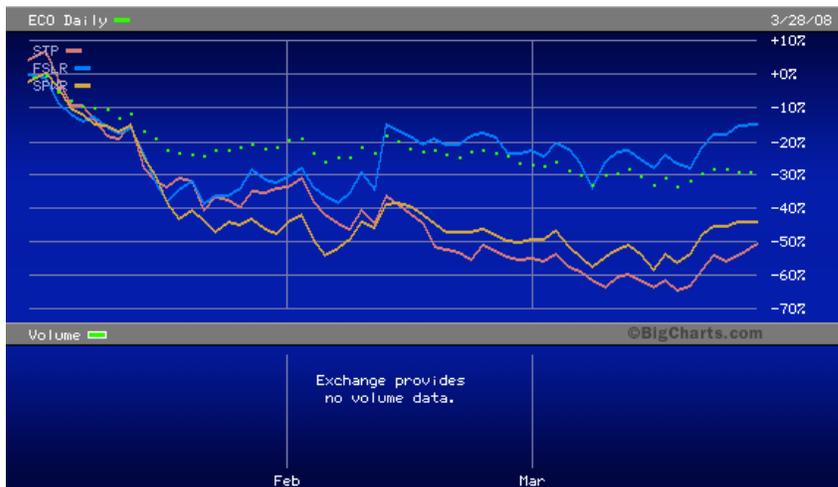
But ETFs have also been bought by institutional investors such as pension funds and even by those modern-day masters of the universe, hedge-fund managers. One reason is that an ETF represents a quick and easy way for investors to take a view on an asset class. Say a hedge fund manager believes that the Japanese market is set to surge. If he were to assemble a portfolio of stocks, he would have to do a lot of research and might choose the wrong ones. Instead he can simply buy an ETF linked to a broadly-based benchmark such as the MSCI Japan index.

So ETFs could be viewed as a set of Lego bricks from which an investor can assemble a do-it-yourself portfolio. They can also be used to replicate the style biases that, some would argue, have often been mistaken for fund-manager alpha.”

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Assuming the volatile clean energy sector and hence WilderHill® Index (ECO) makes a bottom ahead, observable in retrospect and *after* the move up, what sort of form may it take? Sharply rising up after just a brief floor is one possibility (visualize a “V” shape), but so too is a protracted period first of just muddling through sideways (picture a “U”), and so too is a double bottom with a sharp rise followed by decline again (“W” shape). Just alphabet soup, but an interesting question ahead in *possibly* reverting to an uptrend.

Consider too during strong volatility downwards that one facet of an Index-based approach is to mitigate for the single-stock risk, by instead capturing an entire sector of stocks. For example when one compares ECO’s move down over say a -30% decline in Q1, that may perhaps still be a mitigated move, relative to say some (not all) of solar stocks in a recent period when solar was especially impacted. So ECO may capture much less sharp upswing than one single-stock; it may also be less volatile downwards than many single equities. Below are 3 sample solar stocks’ moves compared to a less-volatile ECO (in green dots ..):



### The tracker fund (PBW) for the Index (ECO) marks its Third Anniversary

2008 marks completion of the first three years for a tracking fund (PBW) since the March 2005 launch when it was also, we're proud to say, the first ETF+Index for clean energy! Three years thus completed, the Index/PBW seems to have helped spur entry too of a whole host of fairly similar products across both clean & alternative energy. PBW launched at a value of 15.60 on March 3, 2005 and it closed three years later at a value of 20.72 (on Feb. 29, 2008). This represents a positive return of +32.8% over the past three years – or annually about +10.9 per year over that period for three-year performance. For the past one year alone, since closing March 2, 2007 at 17.79, is also a positive return of +16.4%. As noted its performance is typically seen as more volatile, over any short intra-period.

### Additions to the Index (ECO) for Q2, and the Deletions

There were six Additions for Q2, *Calpine* (CPN) as a geothermal power producer with generally low-carbon assets (in Greener Utilities); *Gushan* (GU) biodiesel in China uses vegetable oil and used-cooking oil etc as feedstock (in Cleaner Fuels); *Rubicon* (RBCN) a maker of substrates used in the production of LEDs (in Power Delivery and Conservation); *Raser* (RZ) a speculative small licensing firm in electric motors, and now geothermal (Power Delivery and Conservation); *ReneSola* (SOL) makes wafers for silicon PV and is in China (Power Delivery and Conservation); *Spire* (SPIR) solar PV fab equipment including in nano (Power Delivery and Conservation; a banded stock at rebalance for being <\$200M). There was one Deletion of UQM from the Power Delivery and Conservation sector.

### Looking Ahead to Spring & Summer months

Over Q1, ECO showed strong downward movement and in March repeatedly touched down near a low of 193 (with movement back upward the last week of Q1). What points might drive on further volatility down/up ahead? There are a few topics in clean energy that present interesting questions for the months to come and they include: will the production tax credit (PTC) and investment credit be renewed in the Springtime possibly spurring demand for wind and solar beyond 2008; shall hot windless days of summer cause gigawatt-sized wind producing regions to decline to producing just a few hundred megawatts in ways that overly stress grids; will new start-up polysilicon producers be able to match the low costs achieved by incumbents; can concentrating solar thermal plants prove technical feasibility so they're subsequently ramped; any progress towards a commercial viability of cellulosic biofuels; and might energy efficiency gain traction as costs of oil, natural gas and coal make saving a gallon/watt rather more desirable?

Look ahead and the 2008 political race too poses the notion that change is afoot, as does concern for energy security. Finally of course the political debate over climate change rages on, often acutely in hot months of summer. To be sure the issue of climate risk adds an element of uncertainty to this stock sector, though regardless of how one views probabilities of human-induced climate change, it seems importantly clear that some clean energy technologies are just simply better than the status quo. Those making sense in their own right are increasingly compelling from a strictly-business-point of view no matter whether one is conservative or liberal and drivers for clean energy are many.

## Summary

First Quarter of 2008 opened with the Clean Energy Index® (ECO) at 288.21, and it closed at 203.56 for a negative Q1 return of -29.38%. A very robust strength on the downside thus characterized Q1. However, that strong downside performance in Q1 wasn't greatly surprising since it came on the heels of a 'blow-out' Q4 2007 with ECO up +20%, as well as the four consecutive positive Quarters with ECO up +58% for the 2007 year.

To be sure the acute sharpness of this sell-off across clean energy subsectors and starting almost on January 1<sup>st</sup>, creates powerful figures by coincidence for the Year-to-date, and the Q1 performance numbers. That drop was however likely pleasing to those short the sector from atop Q4 highs; it is a net good too for the long investors patiently waiting to buy yet more on dips – and so even abrupt downturns can be an event useful to some.

Either direction what one does notably get in ECO is some significant non-correlation with broad markets. Yet what can be done in downmarkets? Academic research indicates there is generally no safe way to avoid all downturns; indeed it's hard for active funds to 'beat the market'! Weathering downturns may be simply one path, if one accepts the difficulty of consistently guessing both rightly & ahead of time, which way markets will next turn.

Seen this way even the strong correction to clean energy of early 2008 may be expectedly part and parcel of this volatile arena. Corrections can arguably even be seen too as healthy(!) for the clean energy sector, over the long term, by correcting excesses, exuberant returns and high P/E ratios that might creep in after long run-ups. Finally there were both the 6 new stock additions of CPN, GU, RBCN, RZ, SOL, SPIR to the Index (ECO), and the 1 Deletion of UQM from the Index (ECO) for the rebalance to start Q2 of 2008.

Sincerely,



Dr. Rob Wilder  
rwilder@wildershires.com

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Disclaimer: The following is a reminder from the friendly folks at the WH Index who worry about liability. Performance figures quoted represent past performance only, and are no guarantee of future results. The views expressed here are those of just one of the managers of the WilderHill Index (ECO). Views are not meant as investment advice and should not be considered as predictive in nature. Any descriptions of a holding, applies only as of March 31, 2008. Positions within the Index can and do change thereafter. Discussions of historical performance do not guarantee, and are not indicative of future performance. The Index covers a highly volatile sector and thus it is volatile too, and subject to well above-average changes in valuation. WilderHill Clean Energy Index® (ECO) is published and owned by WilderShares, LLC. No financial instruments or products based on this Index are sponsored or sold by WilderShares LLC, and Wildershires LLC makes no representation regarding the advisability of investing in such product(s). "WilderHill"® and "Clean Energy Index"® are registered marks and the property of WilderShares LLC; all rights reserved.

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### Appendix I: Index (ECO), Past Q1 2008 Components and Weights:

The following were Q1 weightings about 2 weeks before rebalance to start Q2 2008; after each rebalance every stock floats according to its share price over the coming Quarter.

#### **Index Components as of: 03/17/2008**

<b>Company Name</b>		
Applied Materials	AMAT	5.02%
Cree Inc	CREE	4.65%
MEMC Electronic Materials Inc	WFR	4.19%
Itron Inc	ITRI	4.05%
Ormat Technologies Inc	ORA	3.38%
Idacorp Inc	IDA	3.37%
American Superconductor Corp	AMSC	3.31%
First Solar Inc.	FSLR	3.30%
Cosan Ltd	CZZ	3.29%
Om Group	OMG	3.26%
Portland General Electric Co	POR	3.09%
Universal Display Corp	PANL	2.85%
Emcore Corp	EMKR	2.82%
JA Solar Holdings Co Ltd	JASO	2.81%
Ballard Power Systems	BLDP	2.81%
International Rectifier Corp	IRF	2.68%
Air Products & Chem	APD	2.63%
Trina Solar Ltd	TSL	2.59%
Echelon Corp	ELON	2.49%
Energy Conversion Devices Inc	ENER	2.46%
Fuel Systems Solutions Inc	FSYS	2.42%
Zoltek Cos Inc	ZOLT	2.42%
China BAK Battery Inc	CBAK	2.37%
Ultralife Batteries Inc	ULBI	2.14%
Plug Power Inc	PLUG	2.11%
Amerigon Inc	ARGN	2.11%
Evergreen Solar Inc	ESLR	1.98%
Nova Biosource Fuels Inc	NBF	1.95%
Sunpower Corp	SPWR	1.86%
Yingli Green Energy Holding Co Ltd	YGE	1.78%
Medis Technologies Ltd	MDTL	1.71%
Comverge Inc	COMV	1.71%
Verenium Corp	VRNM	1.69%
Suntech Power Holdings Co Ltd	STP	1.64%
FuelCell Energy Inc	FCEL	1.63%
Pacific Ethanol Inc	PEIX	1.48%
VeraSun Energy Corp	VSE	1.10%
Maxwell Technologies Inc	MXWL	0.91%
Ocean Power Technologies Inc	OPTT	0.66%
Uqm Technologies	UQM	0.48%
Active Power Inc	ACPW	0.46%
Ascent Solar Technologies Inc	ASTI	0.37%

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## **Appendix II: Index (ECO) Components & Weights at the latest Rebalance:** **INDEX (ECO) SECTOR & STOCK WEIGHTS FOR THE START OF Q2 2008. 47 STOCKS.**

Each stock freely floats according to its share price after rebalance.

\*Stocks below \$200 million in size at rebalance are banded with a 0.5% weight.

**Renewable Energy Harvesting** - 32% sector weight (11 stocks @2.81% each; + 2 banded stocks)

\**Ascent Solar*, ASTI. Solar, early-development of thin film CIGS flexible PV.

*Emcore*, EMKR. Solar, Concentrating PV in CPV terrestrial uses, also satellites.

*Evergreen* ESLR. Solar, builds string-ribbon PV with reduced silicon-demand.

*First Solar*, FSLR. Thin film, CdTe solar panels, greatly reduces silicon need.

*JA Solar*, JASO. Solar, China-based sells PV modules in Asia, Europe, U.S. etc.

*MEMC*, WFR. Producer of polysilicon needed in many crystalline solar PV cells.

\**Ocean Power Technologies*, OPTT. Wave power, speculative early-stages.

*Ormat*, ORA. Geothermal, works as well in areas of recovered energy.

*SunPower*, SPWR. Solar, Efficient PV panels with all-rear-contact cells.

*SunTech Power*, STP. Solar, fast-growing major producer of PV is based in China.

*Trina Solar*, TSL. Solar, produces ingots, wafers, solar PV modules; China-based.

*Yingli Green Energy*, YGE. Vertically-integrated solar PV manufacturer, China.

*Zoltek*, ZOLT. Wind, makes carbon fiber for wind blades, product 'lightening'.

**Power Delivery and Conservation** - 28% sector weight (11 stocks @2.50% each + 1 banded stock)

*Applied Materials*, AMAT. Solar PV fabrication upstream, thin film & crystalline.

*American Superconductor*, AMSC. Wind power, also superconducting 2G HTS.

*Comverge*, COMV. Demand-side energy management for smarter grids.

*Cree*, CREE. LEDs, Efficient lighting, a maker of power-saving electronics.

*Echelon*, ELON. Networking, for management of whole energy systems.

*International Rectifier*, IRF. Efficiency-enabling electronics producer.

*Itron*, ITRI. Monitoring for energy measurement and management systems.

*Raser*, RZ. Speculative, a small licensing firm in electric motors, geothermal.

*ReneSola*, SOL. Wafers for silicon PV; mono and multicrystalline, China-based.

*Rubicon*, RBCN. Maker of the substrates used in production of LEDs, lighting.

\**Spire*, SPIR. Solar PV fabrication equipment including nanotech, semiconductors.

*Universal Display*, PANL. Organic light emitting diode OLED panel displays.

**Cleaner Fuels** - 12% sector weight (5 stocks @2.20% each + 2 banded stocks)

*Air Products & Chemicals*, APD. Hydrogen, is a supplier of industrial gases.

*Cosan*, CZZ. Biofuels, Brazil-based uses sugarcane feedstock, an ethanol exporter.

*Gushan*, GU. Biodiesel, China, vegetable oil, used-cooking oil etc as feedstock.

\**Nova Biosource Fuels*, NBF. Biodiesel, has a wide variety of feedstock, U.S.-based.

\**Pacific Ethanol*, PEIX. Biofuels, aims to be a key ethanol producer in Western U.S.

*VeraSun Energy*, VSE. Biofuels, one of the largest corn-feedstock producers in U.S.

*Verenium*, VRNM. Enzymes for converting diverse cellulosic feedstock to biofuels.

**Energy Storage** - 12% sector weight (5 stocks @2.20% each; +2 banded stocks)

\**Active Power*, ACPW. Flywheel power storage, a firm power alternative to batteries.

*China BAK Battery*, CBAK. China-based large OEM manufacturer, lithium-based cells.

*Energy Conversion Devices*, ENER. Very diversified: in batteries, solar PV, also FCs.

\**Fuel Systems Solutions*, FSYS. Gaseous fuels integrator for cleaner-fueled vehicles.

*Maxwell*, MXWL. Ultracapacitors, battery alternative such as for hybrid vehicles.

*OM Group*, OMG. Produces cobalt & precursors to Li-Ion rechargeable batteries, FCs.

*Ultralife Batteries*, ULBI. Batteries, advanced lithium ion, polymer rechargeable.

**Energy Conversion** - 9% sector weight (5 stocks @1.80% each)

*Amerigon*, ARGN. Thermoelectrics, subsidiary in conversion waste heat to power.  
*Ballard Power*, BLDP. Mid-sized fuel cells R&D, PEM FCs such as for transportation.  
*FuelCell Energy*, FCEL. Large fuel cells as stationary high-temp. flex-fuel MCFCs.  
*Medis*, MDTL. Micro fuel cells, designed for liquid-fuels and a unique electrolyte.  
*Plug Power*, PLUG. Mid-sized fuel cells for distributed generation, home power.

**Greener Utilities** - 7% sector weight (3 stocks @2.33% each)

*Calpine*, CPN. Geothermal: largest North American producer; low-carbon assets.  
*Idacorp*, IDA. Hydroelectric, Utility has significant hydroelectric, some small-hydro.  
*Portland General Electric*, POR. Utility, hydro & thermal, growing renewables use.