



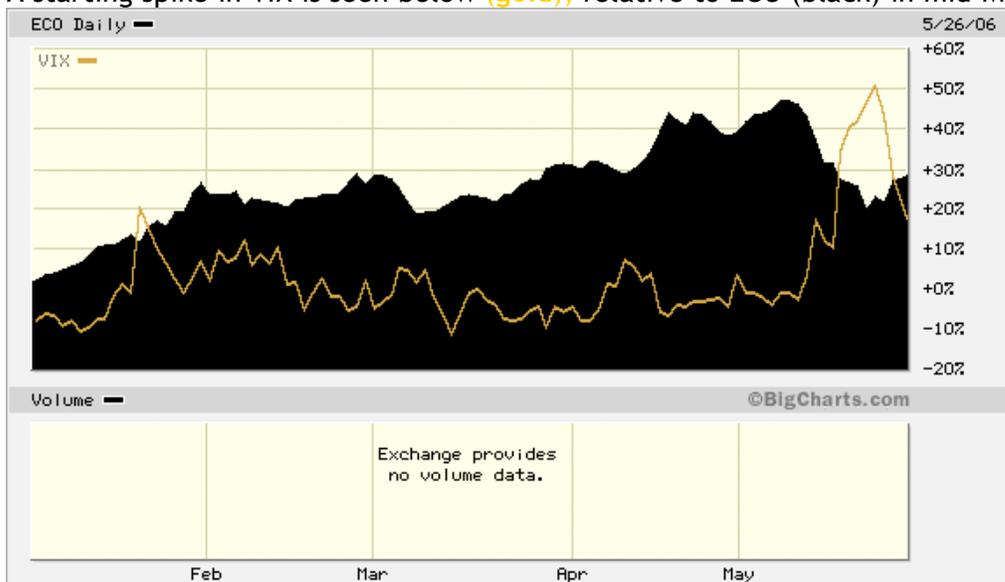
## 2006 Q2 Quarterly Report: WilderHill Index Clean Energy Index. June 30, 2006

The Second Quarter of 2006 opened with the Index (ECO) at 227.14, and ended at 201.25. Q2 thus had a negative return of -11.4%. As expected tracking the notably volatile clean energy sector, the Index had sizable intra-Quarter movement as well.

### Noteworthy Events in 2006 Q2

‘Volatility’ was a watchword for the whole clean energy sector in Q2. Look back to over six years of data and there’s a history of such often-sharp movement downward (as well as up). From that long-term perspective, even the very strong drop in latter Q2 is probably normal movement; it wasn’t greatly surprising to see ECO go down over ~25% in May/June – given that it first increased by over 40% since January. We’d thus repeat here as we so often do that this Index embraces clean energy’s own volatility. It can ever ‘drop like a rock’ and we’re confident the whole sector/Index shall turn very sharply down at times. Plus unlike an active-managed fund that might try to soften downturns, being an Index we don’t ever try to take defensive positions or otherwise to second-guess matters.

Downward-lurching sector movements starting in May saw ECO sharply fall 4% or more in a day – much as there’d been rarer prior days up +4% previously. Even with our sea-legs (as we’ve grown accustomed to years of gyration) that heightened choppiness still always feels non-negligible when it’s happening; yet as noted it’s an expected range for ECO volatility. On the other hand in much broader markets, volatility was moving up sharply too in Q2 and that may be something of a ‘return to normalcy’ there. Volatility in general rose fast across all the broad averages as measured by the VIX (the CBOE Volatility Index). A starting spike in VIX is seen below (gold), relative to ECO (black) in mid-May:



After hovering near the historically low figure of 11 from earliest 2006 through April, the VIX jumped to 20 in mid-May and June. We'd observe however the VIX has marched farther up to 50 in prior eras of anxiety. (And ironically a very low VIX may sometimes give way to bearishness, just as bullishness can sometimes follow a spike in fear/anxiety).

So increasing valuation during Q1 in ECO and broad markets was set against an unusually placid backdrop as measured by VIX. Put in context just of ECO, that low VIX likely helped allow remarkably one-sided upward moves in the WilderHill Index. Clean energy stocks rose in an attention-grabbing way and with elegant sector rotation – but following a brief nadir of anxiety/low VIX in early Q2, there came firm and broadening though still-vague fears globally for inflation, liquidity etc and the VIX increased sharply mid-May. With that turnabout, ECO as well as many investment classes like commodities & stocks globally all began dropping sizably in Q2. Global fears hit many markets as happens at times.

May's low in VIX for broad markets didn't cap a short/recent trend, but was the end of a relative calm in markets that had gone on for some three years. Consider for instance that on only eight days in all early 2006 had the broader S&P 500 Index moved by over 1% per day. That's notably low movement, especially compared to previously volatile eras like the dotcom shake-out of 2001. Back then were gyrations of 12 days per month that the S&P moved >1%, and there have been other similarly volatile peaks of 10 days per month during other sell offs since the 1970s. Indeed the VIX nadir reaching down to just 11 in early 2006 was generally much lower than values typical over the past 50 years.

Compared to the long run, lack of fear the past three years over risks inherent in all equities (as contemplated by VIX) may have ended for now at least. Where VIX goes from here is unknown. But as we noted above, to some extent excessive complacency may itself trigger ironically enough increased volatility. On the other hand this correction in Q2 has arguably been 'orderly & picturesque' and market fundamentals seem quite unlike the dotcom fall-out then from those lofty P/Es, and that's a difference arguably worth noting. In sum the VIX could be an interesting background metric and may be worth watching.

Two last points are 1) some traders find inherent volatility of the clean energy sector and hence these strong Index movements attractive; the fact the Index (ECO) doesn't shy away from the genuine volatility of this sector may be useful some ways. And 2) the end of the Quarter also marks a mathematically coincidental event. A famously steep rise in technology stocks in the 1990s followed by their dramatic fall during 2001 and early 2002 just moved off 5-year charts. Hence declines in clean energy, like in other technology stocks in 2001-2002 largely has disappeared from Index data and ECO five-year history. Importantly while that drop in 2001 and 2002 has mainly disappeared from the past 5-year chart, that decline should be remembered: it reflects the truth of what was. The current normal correction of Q2 may arguably be 'beneficial' in a way by giving real reminder of the sizable sector risks present here. As always, risk and reward go hand in hand.

### **A 'Flood' of New Indexes for Clean / Alternative Energy Appear in 2006 Q2**

It might be fairly said that a flood of newcomer Indexes all aiming to operate in clean, alternative and new energy appeared in Q2. Four new Indexes appeared in May 2006, plus a mutual fund! We welcome all since subtle differences in tracking clean, alternative and new energy stocks can be a big-tent with plenty of space for entrants, and because this

sheer quantity reflects fast-growing interest in clean, alternative and new energy. Useful differences in Index design (albeit only incrementally distinct at bottom) may also provide comparisons with our WilderHill Index (ECO). Because ECO has for so long been a leader and arguably now is the Benchmark for clean, alternative, new energy – and given that we’re passionate about Indexing – we’re delighted by the interest.

We’ll compare below 4 Indexes to the ‘grand-dad’ WilderHill Clean Energy Index (ECO), since the differences are useful. We’ll look briefly at *global* Indexing for clean, alternative and new energy as pioneered by our ‘sister’ global Index: [WilderHill New Energy Global Innovation Index \(NEX\)](#). NEX was launched February 1, 2006: its launch was covered widely in many news stories in Spring and NEX was also addressed at length in the [ECO Q1 Report, from March 31, 2006](#) and is in ongoing [Reports from New Energy Finance](#) (NEF) – plus NEX has its own website: <http://www.nexindex.com> NEX is the first and leading *Global* Index; we’ve seen one newcomer and expect entrants to global Indexing as attention grows.

First we’ll just briefly touch on that actively-managed mutual fund in clean energy, since mutual funds work in fairly different ways from Indexes. Looking ahead we won’t be surprised to see the mutual fund decline less than ECO in downturns, and appreciate less in upturns: in short be less volatile and those seeking less-volatility may find it worth a look. (But that said, modern portfolio theory indicates Indexes are tough for mutual funds to beat; compared to an Index-tracking ETF, the mutual fund must overcome its relative lack of transparency, absence of intra-day trading, and tax-inefficiency. Key are the usually much higher expense ratio/costs compared to an Index-tracking ETF and they add up over time). Yet there’s a potential for a mutual fund to ‘beat an Index’ for some years and it will be interesting to see ECO – and that mutual fund long-term. There’s another mutual fund that has long been in energy and we do regard them as a pioneer/leader.

Turning to comparison of the WilderHill Index (ECO) to new entrants, we look first at one specific Index and that (red, below) is mainly for U.S.-listed stocks and we feel it is very competently done. (It might also be said if “imitation is the sincerest form of flattery”, we feel flattered by that Index). Pretty helpfully it largely overlaps with the stocks in ECO and so has just one major change in that the specific *Index weighting style* they’ve adopted is very noticeably different from ECO, with more on that point below. Since that Index was launched in May it appears to track intra-day closely with our own Index, ECO (blue). Here’s a random sample 5-day chart from the volatile end-of-May:



Obviously these two Indexes above don't appear as a single overlapping line: there's some gaps between that Index, and for ECO in the chart above. What might account for gaps? Because there already are heavy overlap between the specific stocks in ECO – and those put in the Index above (red) – one important factor would be the different *weighting style* and that's likely to be a key variable going forward. There being just one major variable is a good control for observing performance of the 2 Indexes over time. Note too we're satisfied no other Index can completely replicate or imitate ECO precisely, in part because of our stock/sector changes at the rebalancings and special Index design.

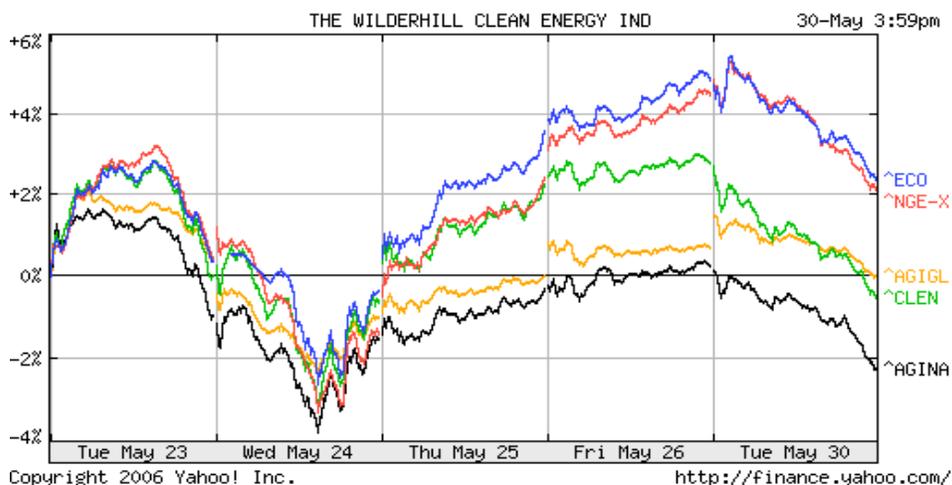
Also we'll expect newcomer Indexes to seek to choose their weighting, stocks or other methodologies in ways different one way or another from ECO, if only to create at least some divergence between their Indexes – and benchmark ECO. For instance while ECO uses a modified equal-weight methodology to account for significant but small-cap clean energy stocks, that above Index above uses a market-cap weight design.

At times the stock selection will differ nicely, adding further differentiation. But in this case above while some stocks in that Index (red) weren't included in ECO, a few of those are stocks we'd felt weren't far off for ECO. In other words some stocks they've used but we didn't indicate they're roughly similar to us in temperament. In sum differences from the first comparison lay mostly in unchangeable Index weight design, and not in stock selection sentiments. Whether ECO continues to outperform may be interesting to see.

A rather different situation is created by two other recent Indexes: one is mainly for North American stocks and one is global. The first seems designed mostly to track companies listed on U.S. exchanges (in red), a bit similar to ECO (in blue). Our WilderHill Index (ECO) so far outperforms that one too, although the data for it are still sparse:



The Indexes noted above are not the only recent entrants. Look next at all four(!) new Indexes below in a random five-day period and compare them to ECO at once: it's interesting to see a close range and similar tracking. We see a) ECO (blue) happens to be still at top but b) another new Index (red) with fewer components tracks pretty closely – that Index like ECO uses modified equal-weight. Then there's c) a global Index launched after NEX and d) an Index noted above, and e) yet another new one (in black) that appears aimed at North American stocks although that has a few 'brownier' stocks':



Despite their all being new energy, what may account for divergences above and for any potentially bigger differences in time on ECO performance relative to other Indexes? At the outset it must be stressed that looking ahead from this briefest comparison time is vexing; the Index comparison data are still very sparse since just over a month has passed since those entrants came out. They each merit gaining a year or more of tracking and experience first. Plus it's impossible today to tell who will come out ahead in a year. That said there are still 1 to 2 fundamental, unalterable differences as between ECO – and recent entries that are useful, immediately clear and they may have real impact over time. First as stated one basic difference is fundamentally different weighting design: that's an early decision in Index construction that once made, cannot be unmade.

A second identifiable way ECO stands out from some above is the WilderHill Clean Energy Index is built for true clean energy stocks. We've steered away from 'brown energy' technologies that may be included in some other Indexes. We don't have highest-carbon coal, oil, nor embrace clean-up thinking. Instead we focus on the clean, renewable, low-carbon energy solutions like solar, wind, biofuels, energy efficiency and conservation, pollution prevention, etc. Sometimes there are close and subjective questions regarding borderline-cleanest technologies, but we very clearly designed a clean energy Index.

This is not to criticize Indexes that may include fossil-fuel-themes, but we are confident those stories don't belong in our Clean Energy Index: our vision focuses on this fast-growing truly clean energy sector. Such may spell opportunity though since others can index a browner story and so be different that way from ECO. For example 'artistic' differences create a style gap in which other Index(es) may legitimately be divergent.

'Lifting the hood' to examine all stocks in an Index, these component stocks can really help define an Index in our view. Here some of the differences as between ECO, and new Indexes can be telling. Consider a few stocks put in another Index (decidedly not ECO) – in so-called 'clean coal'. We'd suggest 'clean coal' as a marketing term is not yet well-defined. Browner examples of it may include even highly-advanced approaches but that still pollute large-scale, or those only now able to sizably reduce a pollutant like sulfur – while mercury and importantly CO<sub>2</sub> are still released in very significant amounts.

As a clean energy Index we're quite skeptical of coal. We are mindful of the vast domestic reserves in America and China, and we strongly support growing U.S. energy security. Interestingly too if CO2 is taken more seriously ahead, true 'clean coal' may well become a real part of the energy portrait since renewables alone can't meet all needs for years. With that in mind new thinking *may, potentially*, grow technologies that can remove CO2 from the coal equation. Carbon capture & sequestration might be on the horizon to remove all CO2 and other pollutants, and those more advanced technologies may one day be debated by us for their appropriateness for the Index. We will watch for the so-called 'clean-coal' technologies that can *safely* prevent carbon/other pollutants from entering, in the first place, either air or sea (we note ocean acidification now looms as a recently-discovered issue). If capturing CO2 for thousands of years is feasible, then arguably it may perhaps be considered an important although at-best-second-choice index technology.

We'd emphasize that coal today is not yet clean energy, from mining operations aspects to even advanced coal-fired plants that emit massive CO2, mercury, etc. Robust future sequestration might be different, but 'clean coal' as seen today is not yet well in line for clean energy. Compared say to renewables like solar, wind, geothermal or wave power – coal at present is much different and simply not desirable for an Index here. In short we seek clean technologies that prevent pollution in the first place. When that cannot be met, we may consider technologies delivering far better than incremental gains in reducing pollutants. Our approach is also notably beneficial for indexing here: because we omit the fossil fuels like coal, the WilderHill Index (ECO) can provide smarter and stronger non-correlation with fossil fuels stocks than an index that includes coal stories.

As the first Index on Wall Street having low-carbon solutions as a core theme and still the [only clean energy Index tracked by a live Fund](#), we're bound to pursue smart low-carbon technologies that generally prevent pollution in the first place. Hence the fact another Index currently has coal technology today provides helpful divergence from ECO. Going forward, the returns of any Indexes with browner energy stories can provide interesting comparative performance data relative to the cleaner WilderHill Index (ECO). It may be interesting to see this unfold; we'll look at comparative returns one-year out.

### Index Weight Methodology

A key point stemming from ECO's modified equal-weight is no stock is weighted very differently from another at each rebalance since they're all generally capped at 3%. Our own Index is thus intently designed to give all component stocks real weighting, and weight by sector. Consider on the other hand, an Index using instead the *market-cap(italization)* weighting style. There just the top 3 stocks alone might easily make up 30% of an Index if the three are relatively large companies. And just the top 7 stocks could be half the Index by weight(!) which may introduce momentum bias. Conversely the bottom 10 stocks may together total less than 5% of the Index, even if they're very technologically significant. That weighting style is an artistic choice and there's a very good case for that market-cap style, especially Indexing for exclusively big companies.

We subscribe to modern portfolio theory and believe for the clean energy sector with important small-caps, the advantages of modified equal weight indexing are persuasive. Ultimately our choice for Index weighting like our preference for the cleaner – vs.

'browner' stocks is an important one and it should be interesting in years ahead to compare performance of ECO vs. differently constructed Indexes. WilderHill Index was informed by over five years' experience indexing and that time solidly indicated giving real weight to the many small but technologically-core pure plays such as in solar, wind, biofuels, energy efficiency, conservation, etc can have considerable positive impact.

Weighting differences should in theory lead to consequences in performance. Hence we give a relevant passage from the literature below. This is an interesting excerpt from the 2005 article in Institutional Investor, *2005 Investor's Guide to ETFs and Indexing Innovations*, by David Cohen and G. Raghuram, entitled "ETFs and Semi-Active Index Strategies: Creating Indexing Strategies Familiar to Investors." The following text and 2 charts (reprinted with permission) address the issue of Index weighting and highlight reasons for creating a (modified) equal-weight Index, over cap-weight Index:

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WEIGHTING METHODOLOGY "A major factor in index performance is the weighting methodology chosen by the index provider. In a similarly conducted, randomly generated portfolio comparison (Chart A), equally weighted versions of a portfolio out-performed cap-weighted versions in 7 out of 10 of the portfolios evaluated. While this may speak more to the time period measured, longer-term studies have reached similar conclusions (consider the long-term out-performance presented by the equal-weight version of the S&P 500). More often than not equal weight portfolios outperform cap-weighted portfolios.

BUT WHY? An evaluation of position concentration in the cap weight portfolios may give some insight. In the randomly selected cap-weighted portfolios presented in Chart A, on average the top 5% of stocks accounted for 43% of the performance. Similarly, in the S&P 500, the top 5% account for about 37% of the index composition. This means that the performance of a cap-weighted index returns are most significantly influenced by just 5% of the stocks comprising the index, invariably a riskier proposition than allocating no more than 0.5% to 1.5% to any one company. [ECO cap generally 3% at rebalance. RW].

#### WEIGHTING METHODOLOGY AND THE S&P 500

According to Standard and Poor's the most widely used benchmark today is the S&P 500. This Index is regarded as the standard for measuring large-cap U.S. stock market performance. In total, more than \$1 trillion is indexed to the S&P 500. The S&P 500 is a good representation of the average domestic large cap stock. The index includes a representative sample of premier companies in leading industries and is used by 97% of U.S. money managers and pension plan sponsors as a benchmark.

Until recently, S&P used a market-cap weighting for the 500. (Footnote: recently S&P adopted a float-weighting methodology, a variant of cap weighting that that uses the float to enhance index liquidity). While often presented to investors as a core portfolio component, a high-priced stock bias is clearly adopted by this index; it is simply a symptom of the cap-weighted methodology. Market cap weightings are a function of both size (measured in the number of shares) and price. More expensive companies enjoy a disproportionate weighting at the expense of cheaper, perhaps under-priced stocks. When this preference is systematically applied to the selection of constituents, the result is a biased index. Recent history demonstrated that during periods of speculation, over-valuation increases the index's allocation to speculative sectors at exactly the wrong time. As growth valuations inflate, these cap-weighted problems can grow to dangerous proportions. For example, in December 1990, technology sector companies represented 6.5% of the value of the S&P500. Ten years later, tech had grown to over 34% of the

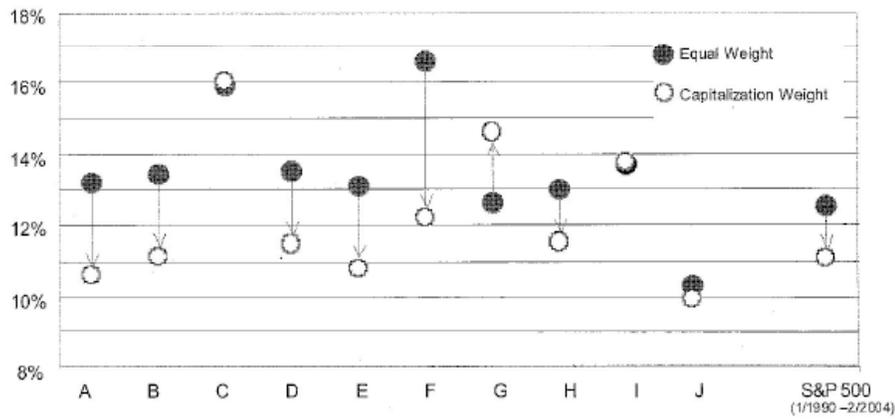
index's composition. Clearly the upside price explosion impacted the index's market weightings at the expense of other sectors. And, by definition of the term 'market cap,' the point of maximum over-allocation coincides with the moment of peak valuation! ...[It remains to be seen however whether the modified equal-weight by sector design in ECO, can overcome this issue better than does market-cap weight. RW].

An additional problem that arises with the cap-weighted index is its impact on implied diversification. Although 500 companies are represented in the S&P500, 25% of the index is concentrated in just 11 positions, 5% of the companies account for about 40% of the index, and 90% of the index is comprised of just slightly over one-half of the stated 500 stock portfolio [!]. In a cap-weighted index, an opportunity bias is also imposed. These weightings emphasize relative size as the preferred method for weighting opportunity.

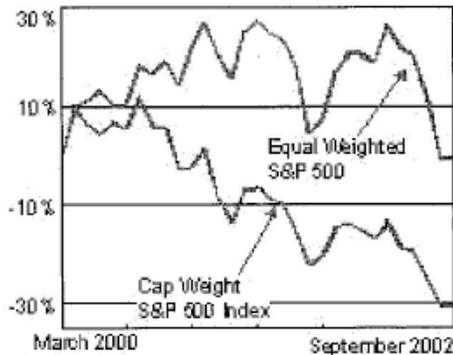
[End quote. The ECO modified equal-weight design avoids this sizable concentration].

**Chart A**

**Weighting/Return Comparison of Random Portfolios**  
(February 2000–January 2004)



**Cap Weight Versus Equal Weight**  
(S&P 500 March 2000–September 2002)



**Chart B**

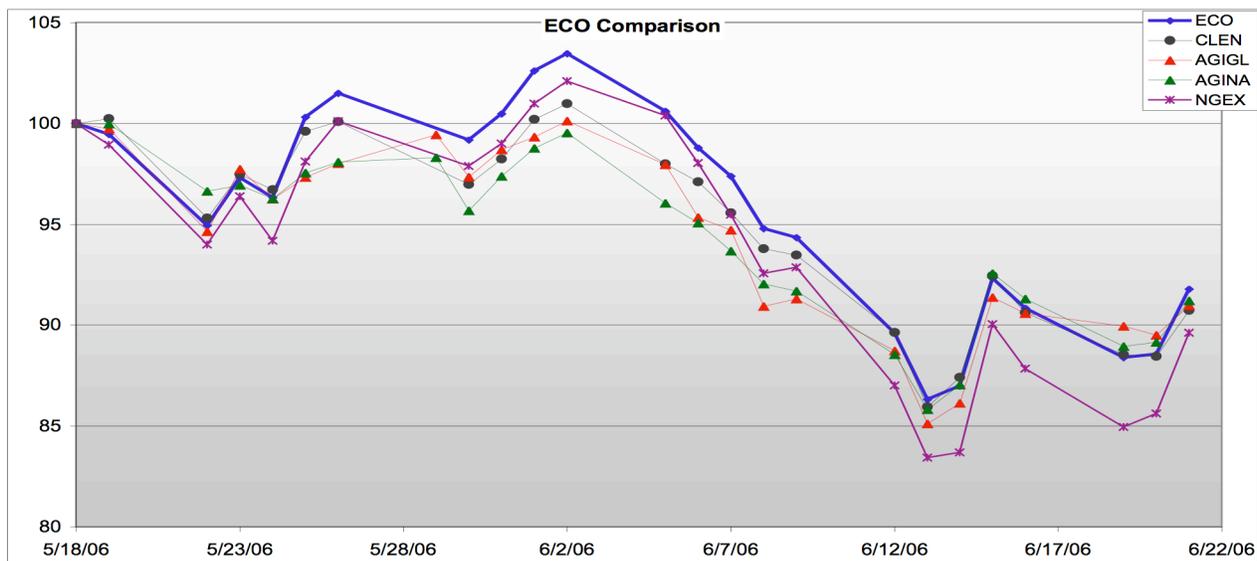
The above 2 charts (reproduced with permission) from the excerpted article above show diverging performance in equal-weight vs. cap-weight Indexing.

A problem then is the straight cap-weight Indexes may overweight overvalued stocks, even while they underweight undervalued ones. And a strong version of an efficient-markets thesis assuming securities are priced perfectly, may instill unfortunate bias towards momentum Indexing. When Indexing a theme with the small and inefficiently-priced pure-play stocks found in clean energy, we believe trying to capture their performance can be thorny without some modified or straight equal-weighting. The cap-weight might allow for greatest assets under management to flow to a tracking fund, but that benefit confers mainly to an Index/Fund company, and not to the investors seeking the best Index.

We're deep believers in Indexing overall, and strongly feel that "capitalization-weighted Indexation has been one of the great innovations of the last quarter-century" as noted by Dr. Jeremy Siegel in the Wall Street Journal (June 14, 2006, A14). We'd agree and feel innovative metrics can indeed make fundamental sense; in our case it's not highlighting dividends – but renewable energy, CO2, and pollution prevention that we single out.

How does this relate specifically to tracking clean, alternative and new energy? A one-month ECO comparison Chart below starts on May 18, 2006 when the other Indexes had debuted and compares an initial performance of WilderHill Index (ECO) to newcomers.

While the below Chart does still mainly show ECO as best performing Index, this time period is far too short to draw robust conclusions; we look forward to over a year of data:



Following the February 1, 2006 launch of the [WilderHill New Energy Global Innovation Index \(NEX\)](#) as the first-ever *Global* Index for clean, alternative and new energy, there have been entrants there too. As with ECO we welcome all the newcomer global indexes as well and feel ways they'll differ from NEX can provide helpfully divergent data ahead. In sum we'll be interested to see both *how well* pioneering ECO and global NEX Indexes continue to perform compared to all new Indexes over the long-term, and *why*.

In a different matter, when clean energy stocks are all rising we're sometimes asked in a friendly way why we highlight downsides of the clean energy sector and stress that stocks in ECO can and do 'drop like a rock'. Our amiable response simply is it's a fact and lesson

we learned from six+ years indexing stocks in clean & renewable energy. Plus it's also during (perhaps unsurprisingly) sharp drops in ECO that we feel it appropriate like last Quarter in stressing an inexorable potential for sharp reversals, and regression to the mean especially during just those times when the index is rising extraordinarily fast.

Lastly we'd note that all those 4 new Indexes all appear nicely to independently confirm that we're tracking the clean energy sector well. Those indexes interestingly started to calculate live at the beginning of this recent decline in clean energy stocks, and they're since dropping very much in line with the benchmark WilderHill Index, or even a bit more so. That arguably helps only validate our pioneering methodology decisions.

### Index Sector Weighting Changes for Q3

A benefit of dynamic design in the WilderHill Clean Energy Index (ECO) is we can incrementally right-size Sector weights as clean energy matures and evolves. For instance there's been a remarkable increase lately in U.S. and global importance of ethanol; capital inflows there are growing more significantly relative to other areas. In response we incrementally increased now weighting for this 'Cleaner Fuels' Sector so that it is 14%. Other Sectors have changed incrementally too and reflect as usual the changing growth rates of various parts of the clean energy sector. Sector weights now are as follows: Renewable Energy Harvesting, 33%; Power Delivery & Conservation, 20%; Cleaner Fuels, 14%; Energy Conversion, 14%; Energy Storage, 13%; Greener Utilities, 6%.

### Five Additions to the Index: ANDE, AMAT, CLRK, PSD, VSE

For Q3 we've added the following 5: **Andersons** (ANDE) is a producer of ethanol & biofuels that's highly-diversified across relevant agricultural businesses; **Applied Materials** (AMAT) is the world's largest semiconductor equipment firm that's also fast growing its solar PV efforts; **Color Kinetics** (CLRK) sells color and more notably to us White, Light Emitting Diode systems; **Puget Energy** (PSD) is a Utility ramping wind-power installed base and energy efficiency programs and we note they don't own or control nuclear plants; and **VeraSun Energy** (VSE) is a pure-play and second largest ethanol producer in the U.S.

### Deletions: BOX, IMGC, MAG

Last Quarter we reported that a friendly offer had been made to buy out industrial-gases component BOC Group (BOX) and that initially moved the Index component stock sharply higher in January. The first offer was rejected as too low but as noted, a follow-up offer made in Q1 was accepted with the purchase of BOC to be consummated in latter 2006. That process since moved forward in orderly fashion. Because BOX is going to be soon bought and subsumed in another group, it is deleted at end of Q2 from the Index (ECO). There usefully remain two industrial hydrogen-makers still in the Index (ECO) for the Cleaner Fuels Sector, though BOX was interesting in part for being one foreign-based (non-U.S.) component in the Index. In pretty similar manner, Intermagnetics (IMGC) was also sold during Q2 and so they've been removed with this rebalance too. We thus have lost the superconductor aspect from that stock, but we note that the Index (ECO) still has a superconductor component that's also nicely a pure-play.

The one decision we did find difficult was deleting Magnetek (MAG) at end of Q2. The company's nascent power delivery technology have been like 'an old friend' to us and MAG was in early predecessor Indexes. But their stock was impacted by issues not-well-related to clean energy and they've for too long been hovering just above the forced-deletion floor; unlike some company plunging to near the floor in a brief fall, they've also gone in and out of Index eligibility in the past. After some discussion they were removed, but will be monitored for possible company growth and relevance ahead.

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## Ongoing Website Development

Our website at <http://www.wildershares.com> is in continuous refinement and we monitor for glitches as this website grows. We love tech, and our years of experience on data-rich public-interest websites taught us glitches happen, given software issues that inevitably arise. It's thus worth repeating the WilderHill Clean Energy Index (ECO) is always actually calculated independently, and totally apart from our own website by the American Stock Exchange. And of course the [exchange traded fund \(PBW\)](#) tracking the Index is calculated robustly and totally independently from our website. Data on the Index (ECO) and tracking Fund (PBW) are on the website for the American Stock Exchange, <http://www.amex.com>. Lastly, we continue to upgrade our website with the aim of offering robust uptime and ample information: we welcome your suggestions.

One small glitch that did arise in Q2 was Index component Scottish Power had a temporary symbol change for technical stock market reasons. For a few weeks, its normal pricing didn't appear and so a webpage showing Index components didn't read-out for SPI valuation during those days. But there was no impact on the Index, nor on the tracking fund since those always had the proper temporary symbol. Our webpage for daily stock pricing resumed, although the company name for SPI still remains down on Yahoo.

**Our Facility Solar Upgrades:** During Q2 we added a 2<sup>nd</sup>, polycrystalline solar power PV grid-tie system of 24 panels@120 watts each to an [SMA 2.5 kW Inverter](#). We look forward to comparing polycrystalline efficiency & performance vs. our primary monocrystalline PV. We also upgraded our solar data monitoring to directly measure data for Irradiance, individual & combined power outputs, temps etc. That data are in addition to existing read-outs for building demand and we look forward to even further improvements here.

We also switched in Q2 from a simple bi-directional Utility power meter on our building, to an innovative Time-Of-Use (TOU) meter. With TOU we benefit in two ways. One is we'll produce the most power at the height of day when the TOU charges us (or more often buys back from us) electricity at retail rates. We'll get a sizable credit from this. For instance on remarkably long-summer days we may generate over 26 kWh/day – with most of that during the 12 p.m. to 6 p.m. *peak periods* when we're 'earning the most back'.

Secondly we can readily move our most power-hungry activities off that Noon - 6 p.m. (Monday-Friday) period, and consume power instead during more off-peak periods. For instance powering up a solar/ethanol powered Plug-in Hybrid Electric Vehicle (PHEV) can be done off-peak. That also allows us to generally avoid fossil fuels for a car to boot.

Below are sample live data on our website: <http://www.wildershires.com/solar.php>

**Solar-Power Website, Sample Displayed Data from 7 p.m., June 22, 2006**



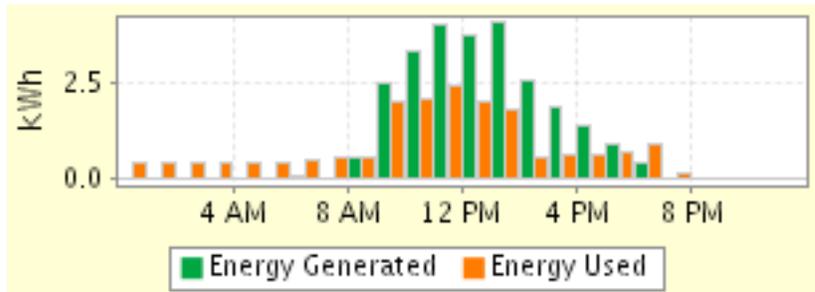
Irradiance  
40 W/M2  
[near sunset]



Cell Temp 64°F



Ambient Temp 66°F

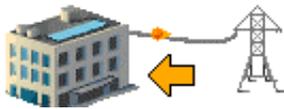


At Present:

**Net Import** 892.0 W

**Generating** 23.0 W

**Using** 915 W [this day saw more on-peak demand than we prefer]



[Currently taking power *from* the grid, since it's now near sunset]

Today's Total:

**Net Exported** 8.0 kWh

**Generated** 25.7 kWh

**Used** 18.2 kWh

**Greenhouse Gases Avoided CO2 9,109lbs.**

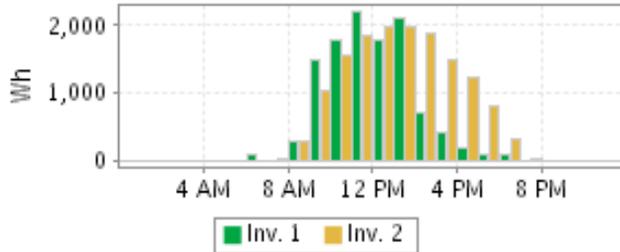


The energy to power 146 homes for one day.



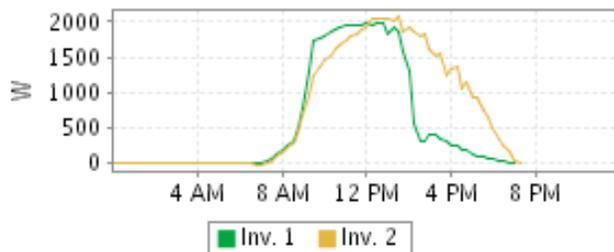
The energy to make 268,200 cups of coffee.

## Energy Today



[Our new 2.5kW Panels/Inverter is [Inv. 1](#) above, and shading from trees is seen at 2 p.m; that shading will soon be removed. Our larger 3.8kW Inverter system is [Inv. 2](#), and these 1-day readings at Summer Solstice reflect a notable 26 kWh total generated today].

## AC Power



[Even hand-sized tree shade wrecks power-production as seen in [Inv. 1](#) above at 2 pm].

## Conclusion

The Second Quarter of 2006 opened with the Index (ECO) at 227.14, and ended at 201.25. Q2 thus had a negative return of -11.4%. Volatility was a watchword for the whole clean energy sector and thus for the Index in Q2. Yet look back at six years of data and there's ample history of sharp movement downwards (as well as up). It might be said from that long-term perspective that even the strong drop in latter Q2 is quite normal; it wasn't surprising to see this sector and thus ECO go sharply down by over -25% during May/June – given the WilderHill Clean Energy Index had first increased by 40%+ since January.

Four newcomer Indexes also appeared in May. We welcome them all since subtle differences tracking clean, alternative and new energy stocks can be a big-tent with plenty of space for entrants, and because the sheer quantity reflects fast-growing interest in clean, alternative and new energy. Useful differences in Index design (albeit only incrementally distinct at bottom) also provide comparisons with WilderHill Index (ECO). Because ECO has long been a leader and is now the Benchmark for clean, alternative energy – and given we're passionate about Indexing – we're delighted by the interest.

Two major areas special to ECO are that it 1) uses a modified equal-weight design, and 2) focuses on genuinely low-carbon clean energy technologies. While the charts mainly show [ECO](#) as being the best performing Index overall so far, this time period is still far too short to draw robust conclusions; we look forward to having over a year of data.

We've long been impressed by writings of John Bogle and Burton Malkiel and found their piece in the Wall Street Journal "Turn on a Paradigm?" (June 21, 2006) wise as usual. Their point that an Index can deliver better performance compared to the typical active-managed equity mutual fund, where the annual operating expense ratio is well over 100 basis points (one percentage point) is pertinent and persuasive. Secondly as academics, we'll also be interested to see respective tracking of our modified equal weight Index vs. market capitalization weight indexes over time and whether we continue to outperform.

Five stocks were added to the Index (ECO) at end of Q2: ANDE, AMAT, CLRK, PSD, VSE. Three stocks were removed. Sector weights were incrementally changed and these now are as follows: Renewable Energy Harvesting, 33%; Power Delivery & Conservation, 20%; Cleaner Fuels, 14%; Energy Conversion, 14%; Energy Storage, 13%; Greener Utilities, 6%.

There was a surge of investing interest in corn ethanol by Wall Street in Q1 & Q2 that in the long run may be neither sustainable nor an especially healthy development. Some fast money pouring in arguably lacked prudent understanding of ethanol, and downsides of a first-generation ethanol that's still corn-based rather than cellulosic. For instance conflicts in ramping a food product as fuel, the difficulties in transport, splash-blending, corrosivity, ambiguous greenhouse gas benefits, necessity for government subsidies and roughly 30% E85 mileage penalty compared to gasoline, may all argue for 2<sup>nd</sup> generation cellulosic ethanol instead using agricultural waste products, fast-growth switchgrass, etc.

In conclusion after rising by more than 30% the previous Quarter, it was hardly a surprise to see the sector and thus Index close down for Q2. As emphasized in our last Report, there is some inexorable tendency towards regression to the mean in security prices. The clean energy sector as a whole moved well down in Q2, and the Index tracked that well. Where the Index goes from here having retrenched is utterly unknown. Lastly, we always seek first hand knowledge too of clean energy and have installed a new polycrystalline solar PV system. As always, we welcome your thoughts and suggestions.

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Sincerely,

*Robert Wilder*

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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 WH Index. 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 June 30, 2006. 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 an exceptionally volatile sector and thus is remarkably volatile too, and always subject to well above-average changes in valuation.

## Appendix I

Following are Index weightings, two trading weeks before Rebalance at end of Q2. After the rebalance every stock floats according to its share price over a Quarter:

### Index Components as of: 06/19/2006

<u>Company Name</u>	<u>Symbol</u>	<u>% Weighting</u>
Impco Technologies	IMCO	5.62%
Zoltek Cos Inc	ZOLT	3.57%
Intermagnetics	IMGC	3.20%
Echelon Corp	ELON	3.10%
Maxwell	MXWL	2.99%
Intl. Rectifier	IRF	2.87%
Plug Power	PLUG	2.81%
MGP Ingredients	MGPI	2.80%
MEMC Electronic	WFR	2.78%
Itron Inc	ITRI	2.68%
Quantum Fuel	QTWW	2.64%
Mechanical Tech.	MKTY	2.64%
Kyocera Corp Adr	KYO	2.63%
Emcore Corp	EMKR	2.61%
Cypress Semi.	CY	2.47%
Amer Power Conv.	APCC	2.47%
Ormat Technologies	ORA	2.42%
Hydrogenics Corp	HYGS	2.42%
Ballard Power	BLDP	2.40%
Scottish Power adr	SPI_W	2.36%
Idacorp Inc	IDA	2.36%
American Super.	AMSC	2.33%
Evergreen Solar	ESLR	2.30%
Uqm Technologies	UQM	2.29%
Medis Technologies	MDTL	2.27%
Ultralife Batteries	ULBI	2.25%
Energy Conversion	ENER	2.24%
Distributed Energy	DESC	2.23%
FuelCell Energy Inc	FCEL	2.22%
Boc Group Ads	BOX	2.17%
Active Power Inc	ACPW	2.15%
Pacific Ethanol Inc	PEIX	2.15%
Sunpower Corp	SPWR	2.13%
Cree Inc	CREE	2.09%
Power Integrations	POWI	2.08%
Suntech Power	STP	1.96%
Praxair Inc	PX	1.90%
Air Products	APD	1.90%
Capstone Turbine	CPST	1.76%
Magnetek Inc	MAG	1.73%