



Q4 2008 Quarterly Report: WilderHill Clean Energy Index[®], December 31, 2008

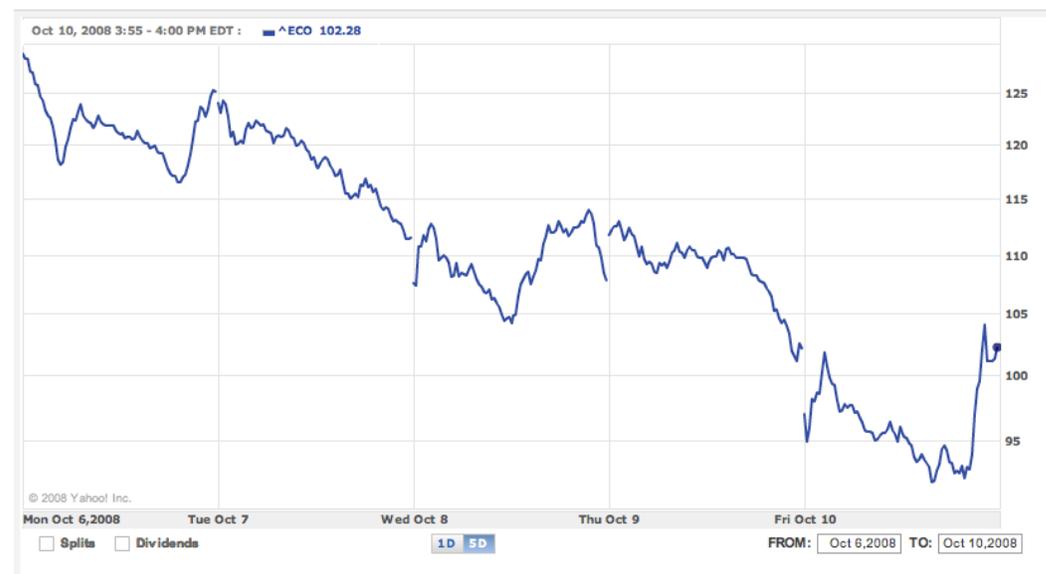
The Fourth Quarter of 2008 opened with the Clean Energy Index[®] ([ECO](#)) at 150.43, and closed at 86.36 for a remarkable & negative return of -42.6%. Intra-Quarter gyrations too were even greater than this notable end-of-Quarter figure implies; while robust volatility is normal within clean energy, mainly downsides volatility was far beyond the norm in Q4.

Awful, ugly, prolonged-yet-must be expected-bear-markets occur from time to time and we are clearly in one now. It may require feeling very dramatic, gut-wrenching broader markets declines – with the sheer drops often here amplified too by clean energy’s sharper moves; these can mean just terrible falls before this sector begins to bottom.

Some are worse than others and the very bad ones hugely painful. Nor is experience salve; *they’re always highly vexing to live through!* ... unlike just cozily looking back after. Being in this field for 20+years the frightening 1987 crash, 1997-1998 Asian crisis, a 2001 dotcom bubble, and now this meltdown are seared memories. Crises mean huge declines, falls far lower than seemed possible – and potentially too they may mean opportunity.

Whether Q4 has put in, or is near some bottoming process is a question of keen interest. Are recent strong declines in stocks particularly within clean energy, mainly over? That’s utterly unknowable today. In a ‘diary of a bear’ below, we’ll revisit classic bear traps/false bottoms seen in Q4, each one ending on a Friday and visible in hindsight before giving way down again. A first came Friday, Oct. 10th, when from a 125 on Monday, ECO plummeted to <95 by Friday mid day, declining over -25% in a memorable 5 days.

Interestingly a climax selling pushing ECO so far down one week, *might*, based on recent history, *conceivably* have triggered entry into a fund tracker on that Friday. If the entry signal were, say, the Index dropping <100, not in the live data since it had begun in 2004, then the first selling wave to Friday was *perhaps* notable. Here’s a chart for that fairly remarkable 5-day period and Index (ECO) that early week in Q4:



As it soon turned out, it was a false signal and thus ‘bear trap’ (false signal implying rising trend—when in fact things will soon resume heading down again). Look at this same week in \$ terms for the tracker fund (PBW): by 3 pm on Friday Oct. 10 the tracker had dropped to \$9.10. Yet just one hour later, the tracking fund would close up to \$9.90, a change in the last hour by +8.7%. (Highlighting Intraday aspects of ETFs, the fund earlier dipped to \$8.96 that day, so even buying <\$9.00 that Friday was in theory also possible).

Capturing gains in ultra-active intra-day moves is pretty close to impossible. Anyway the chimera gains soon vanished; after an Oct. 10 move and briefly after, the tracker was heading soon down again to <\$10.00, next plumbing much lower depths. The point is bear traps abounded in Q4; while crises may potentially mean opportunity, it’s also nearly impossible to ‘catch a falling knife’. Also human nature is to Sell! Sell! Sell(!) – and not buy(!) so it’s a brave soul who ventures in at lower levels, even though risk & reward *may* go hand in hand. (Parenthetically while the tracker would soon move <\$9, and the Index ECO too go below 90 – an Index “90” seeming to match “\$9” is just coincidence. A tracker might aim to broadly mimic an Index, but these two do not match up 10:1).

Exactly two weeks later on Friday Oct. 24 as seen in a Chart below, there was again a 2nd possible, *potential* Friday opportunity after another week of sharp selling. Here a notable threshold was the tracker going from >\$11, to below <\$9 over a week. ‘Scary’? Absolutely! Declines seemed to be going on and on without end, yet it soon proved a bear trap; on the other hand it was impossible to know that at the time. Paraphrasing Warren Buffet, ‘be greedy when others are scared, and scared when others are greedy’ and here clearly was a time of real fear, as the tracker marched forcefully next to below \$9:



Bottoming was again not to be; the next week selling resumed without pause: perhaps a next Q4 threshold might be the tracker breaking <\$8.00(?): could ECO’s tracker touch below such remarkable figure, and/or go down into the \$7s? Yes indeed, this move to below \$8 would next happen by end of a remarkable October: the tracker intra-day traded at a notable \$7.98/share with the Index (ECO) also near 80. This was a lowest level seen so far then to date. Arguably it may have suggested possibly BIG declines ahead (or perhaps some possible bottoming process might begin in the next weeks/months??)

Recalling Intra-day aspects of ETFs that can be sold/bought through the day, we just note a brief floor came again Friday. (Yet the tracker next moved up to \$8.62 that afternoon, a gain of +8% within a day once more showing volatility – though mainly all to downside). To be sure we'd emphasize an entry at true bottom is practically-speaking, pretty much mortally impossible. It's identifiable ONLY in hindsight, anyway in the next few weeks ECO would drop dramatically again, leaving another bear trap. While yes, moving into this sector now might helpfully be a low entry point by historical standards, the volatility downside was presenting gut-wrenching risks – albeit maybe possible reward in future.

Soon resuming a downward march and after just brief respite, on Nov. 13th the tracking fund re-passed below a prior nadir. The tracker dropped next below \$7.0: the trend too made it feel rather possible that this tracker might soon be trading into mid/low 6s(!)

Finally a 3rd and notable Friday (below) exhibited the strongest yet intra-day lows. After a week of declines, on Friday the 21st of November this tracking fund achieved an intra-day record low of just \$6.18. Like previous Friday lows, this too moved swiftly back up in the last hour. Similarly the Index (ECO) reached down to a remarkable 63.41 late that Friday.

It would after rapidly jump back up to close at 86 by the next Wednesday (a day before Thanksgiving) – a significant rebound from bottom of +35% over 3 ½ days. Since markets would then be closed on Thursday for Thanksgiving Holiday, and then open only part-day Friday, this 3 ½ day week and 35% 'Thanksgiving Rally' across Clean Energy and hence ECO seemed to put in perhaps a floor, just before several days' break. It importantly served at least to arrest the (Q4 and) 2008 freefall. Perhaps it helped too to restore at least some bit, the single most important factor missing the past months... Confidence.

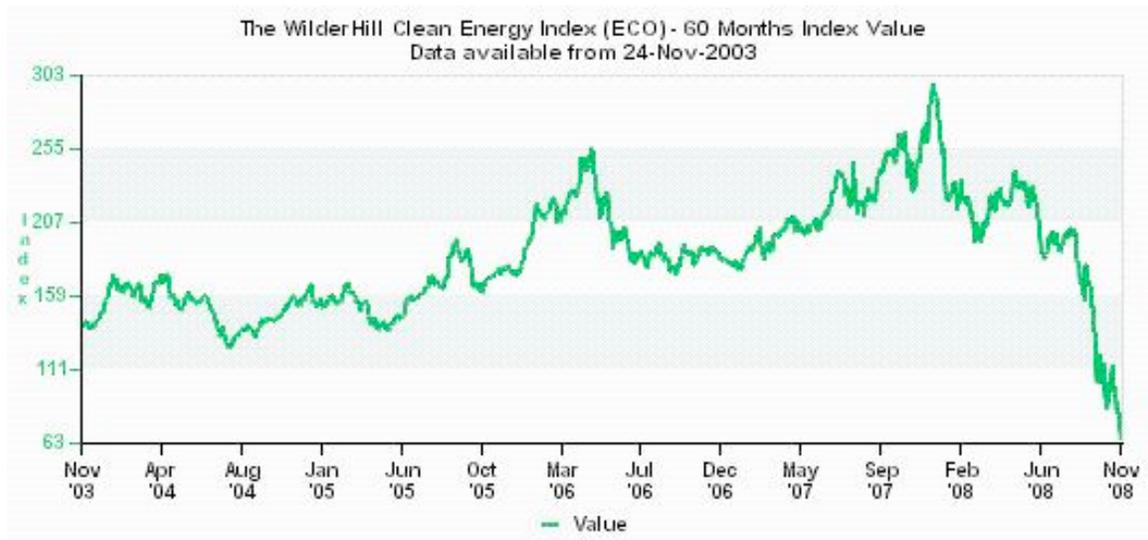
If instead of intra-day hourly values, one looks in this 'diary' at coarser daily closings when a fund might be entered into at more leisurely pace, the tracker's Q4 closing low came @\$6.23 on Nov. 20, 2008. To be sure it would take real courage to move into the fund at such eye-popping lows on that evening - but as we've noted, risk & reward *might* go hand in hand. The following Chart (PBW) reflects queasiness of trading that week down to around \$6.2, recalling rather throat-tightening emotions then being felt:



In the 'Thanksgiving Rally', ECO & tracker unsustainably yet notably sprang off a Nov. 21 bottom in a V-shaped rebound over a few days. (Again by coincidence, the tracker hit a bottom around \$6.2, and the Index (ECO) also hit bottom by intra-day values at roughly 63, which just happens to be nearly @10:1). Importantly however, a sharp +35% move cannot be sustained; it must first be digested. To visualize, this Chart shows ECO after the bottoming, ascending the *unsustainable* +35% to over 85 in the next 3 days:



We'd expect after climbing remarkably in three days, there'd next be a period of consolidation, as gains can need to be 'digested' over a period of time (and it here where by coincidence ECO ended the year). In a snapshot just to capture that bounce we've posted the individual gains off their 1-year bottoms (many were set on Nov 20 and 21) in Appendix III below, just to show that bounce to December 14th. But more broadly since we like to step back and put ECO in truer context of many years – those much, much larger declines beginning from near 280 on January 1, and moving nearly straight downwards are prominently seen at below over 5 years. (Shown here only to declines/ lows reached *before* this bounce, reaching a noted low of 63 in late-November):



Possible entry <\$7 was not a level considered likely one year ago. And yet consider consequences of entering the tracker at say \$8 (since it was here longer than a briefer bottom); that means the tracker doubling before re-attaining initial 2005 levels. From say, \$9 it rises three-fold(!) it if is to re-reach \$27 at beginning 2008 (coincidentally near a high). Although it may take a long time (if ever) to re-top a prior \$28 – to start from say \$18 or less still allows room upwards with regression. With some regression to mean and despite enormous volatility, some bottoming and non-negligible ascent *might* be seen *albeit with severe drops along the way*. Of course the opposite may be seen ahead too: that tracker may yet dip far down again, move down into low \$5s or go lower still(!). There's always great risk here, no way to know if it ever is going back up, and difference of opinion is what makes a market. Hence first half of 2009 shall be of keen interest.

Tax Implication in a Down 2008: Tax Efficiency of ETFs vs. Mutual Funds

Differing Tax implications of ETFs (Exchange Traded Funds) vs Mutual Funds deserves perhaps brief mention, given dramatic stock market losses in 2008. Generally speaking unlike an ETF that typically does not present tax obligations when there's no redemptions, with a Mutual Fund, one might instead see year-end capital-gains distributions and so a 15% tax bill on those – despite no redemptions. This may apply to investments in Mutual Funds even if an investor does nothing, and doesn't sell any of their Fund(!).

To be sure down the line one might recoup taxes, if the Mutual Fund is sold higher – or increase losses for tax purposes if sold eventually lower. But having to pay taxes sooner and especially if one sees a Mutual Fund drop in value, can arguably sting. That surprise may cause new attention to be paid the keener tax efficiency broadly of ETFs, as opposed to Mutual Funds. This was recently noted in the Wall Street Journal of 12/1/2008:

“‘It's going to be the January surprise for a lot of people,’....

Still, there's a potential benefit from the unwelcome tax news: It may prompt investors to think more about fund-related taxes at a time when the topic is likely to increase in importance. *That may include pursuing a smarter tax strategy or seeking out more tax-efficient funds, such as index funds, exchange traded funds and tax managed funds.*” [Italics added].

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Tax efficiency is also a feature of many exchange traded funds. ETFs are generally similar to index-linked mutual funds in that most passively follow indexes. But they can be even more efficient because unlike mutual funds, ETFs are traded on an exchange. When investors pull out of a fund, they just sell their shares, rather than forcing the fund manager to raise cash to pay them out.

....

It's just another feather in the cap of ETFs',”

One recent Lipper study found in 2007, mutual funds paid out around 3% of their market share in capital gains to shareholders, and that may be expected to increase in 2008, as redemptions forced many fund managers to liquidate positions, creating cap gains.

A Brief Return to our old friend, the VIX

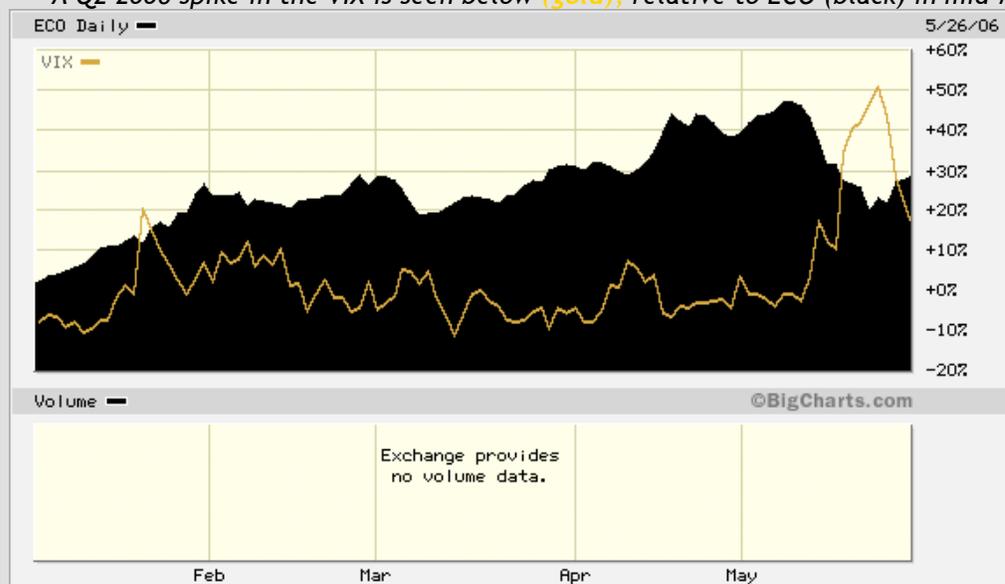
Consider our ECO Report back from Q2 2006; we'd looked at a period then too when a VIX inversely rose dramatically, while ECO fell considerably. We'll reprise that 2006 text below, glancing at it – then how VIX has also acted in dramatic fashion in Q4 2008. (VIX is a CBOE Volatility Index, often called 'fear Index' due to rising in anxious times):

Noteworthy Events in 2006 Q2

'Volatility' was a watchword for the whole clean energy sector in Q2 [2006]. Look back to over six years of data and there's a history of 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 [2006] – given that it first had increased by over 40% since January [2006]. 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 in starting May [of 2006] saw ECO sharply fall 4% or more 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.

A Q2 2006 spike in the VIX is seen below (gold), relative to ECO (black) in mid-May:



After hovering near an historically low figure of 11 from earliest 2006 through April, the VIX jumped to near 20 in mid-May and June.

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Two last points are that 1) some traders find inherent volatility of the clean energy sector and hence these strong Index movements to be attractive: the fact that the Index (ECO) doesn't shy away from the genuine volatility of this sector may be useful some ways.

And 2) End of Quarter [Q2 2006] 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 has just moved off 5-year charts. Hence those deep 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 still be remembered: it reflects the truth of what was. The current normal correction of Q2 may arguably also 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.

Returning to late 2008, in some ways markets are now a bit reminiscent of a 2000-2002 'crash' - not a mere 2006 dip. Yet in other ways though they're arguably worse today. (Certainly in ways much worse... however one thing to keep in mind is while it was also terribly panic-inducing in 1987, 1973-74, and in 2000-02 - markets came out of it each time ... as Michael Lewis writes, "How many times does the end of the world as we know it need to arrive before we realize it's not the end of the world as we know it?").

Fears in the present meltdown are seen in a little-short-of-amazing rise of VIX since start of Q4. In context of the VIX as neither forward-looking predictor, nor lagging indicator of the past - but rather contemporaneous (fear) gauge - it has reflected a recent 12 weeks more upsetting than any in recent memory. We recall how VIX near 20 was considered high in Q2 2006 - and how it had hovered not far from 20-30 earlier in 2008. Yet look now and after rocketing up end-of-September, we observe with a recent spike in Q4 2008 the VIX actually reached a nosebleed-high 80+(!) before dropping back to 40 on Dec. 31.

So the volatility & fear in markets were exceptional in Q4, surpassing handily the prior 2006 rise and (far smaller) spike in VIX then. The past three months of Q4 it was perched near 40-70, gut-wrenching high by historical standards. Again its not predictive, but shows fear & volatility recently at much higher levels than before. Indeed a Wall Street Journal headline proclaiming "For the Vix, 40 Looks Like It's the New 20" (12/1/08) seemed decidedly spot on, just so. A VIX rising >30 on 9/15/2008 seemed to usher in a new regime of sentiment for Q4; since then it would not fall to <60 over 5 straight days during Q4 until mid-December. However, it happily has very lately fallen a lot, closing out 2008 at 40.

The question thus presents itself: when might things ahead turn back to the less-fear-filled days capable of small downs, or even ups(?). There's many metrics by which people try to spot a bottom ... one persistent metric is 'capitulation'; only when all seems beyond redemption a stage might be set for rebound. Certainly then if VIX is a gauge, we reached rather unprecedented fear in Q4. On November 20th, VIX reached up to 80, and we can observe this date was very close temporally to a closing low on the ECO tracker of \$6.23, also on Nov. 20th. Part coincidence (shared by others) but non-negligible match on the 20th creates at least a presumption some bottoming *might* have *possibly* begun.

Another metric is a psychological switch from where (even good) news is the catalyst to sell as was seen through late-November - to where even bad news like an ugly jobs report is sloughed off or a catalyst for buying. Arguably, early December saw some switch in sentiment, and late December came a key rate cut by the Fed. Yet at the end of day, this is all about confidence and appetite for risk: first restore that and 'animal spirits', and markets become a different place. Of course there's an important possibility too we've seen only the latest, biggest bear trap of 2008: rebound from November may just be another 'head fake'; its conceivable 1H 2009 could deliver a fresh set of new lows.

Whether that's the case or not this recession is already uncharacteristically long and deep by historic standards. And a volatile 2008 has perhaps seen more days with 4% or greater moves down, or up, than perhaps in years. Yet one might still take a bit of solace in a notion depth of downturns can help shape quality of an eventual rebound. To be sure, there's been hollowing of credit/capital globally and willingness to lend that may retard any future snap back - perhaps for a long time. Yet once it arrives ... no matter how very, very long it takes to get to a true bottoming process ... deep declines may presage a move smartly back to upside. As noted, the year 2009 shall be of keen interest.

How did an ECO Index/Tracker Compare to Active Fund & 2 Narrower ETFs in 2008?

Having just gone through a 2008 dominated by declines, one might ask: how did the Clean Energy Index® (ECO) being a passive Index – compare to an active-managed fund the past year? Back 12 months ago at end of 2007, we'd looked at a new active mutual fund focusing on alternative energy that had just completed its first full calendar year. For 2007 that mutual fund had a positive return of roughly +42%: by comparison an ETF for our WilderHill Clean Energy Index (ECO) had a positive return that year of roughly +58%.

But that was just for one, very-up year. The broader is that active funds will also have a tough time beating passive Indexes over long periods; yet we imagined some advantage *may* go to active funds just during strong declines. While a cash cushion mutual funds can normally have may hold back their ascent in rising markets – perhaps it can help mitigate their falls in declining years. Moreover they can 'short stocks', unlike fully-invested passive Indexes, and 'aim to beat Indexes' via managers who foretell advances or declines and move money accordingly. (To be sure in practice that's all very difficult to do, plus active mutual funds have higher fees and are less tax-efficient than ETFs. Most do fail to outperform Indexes over time, but outperforming is at least is a goal of mutual funds).

Look then to the past especially declining year. Returning to the active mutual fund, one of the earliest mutual funds in this space and just completing two calendar years, we see for 2008 that mutual fund had a negative return of roughly -68%. By comparison the tracker ETF for WilderHill Clean Energy Index (ECO) had a negative return of roughly the same, -69%. For two calendar years 2007-08, that mutual had a negative return of roughly -55%: by comparison the tracker for ECO had a lesser negative return of roughly -50%.

It's maybe worth an end-of-year glance at 2 other Indexes/ETFs for solar-only, recently launched in 2008. We observe those 2 other Indexes/ETFs started at different times in Q2; they are unrelated to us, are more narrowly-tailored than our own Indexing approaches, and both those are for solar-alone. Due to the nature of ECO that can rotate over the clean energy sectors, for instance ECO can capture gains or losses in say new advanced batteries for electric cars, LEDs, energy efficiency, wind power, demand-reduction, and geothermal etc – unlike in solar alone – there may be a growing difference over time in the respective performances between ECO – and those two solar-only Indexes.

Since Q4 marks a full two Quarter's performance for those narrower products, how did they compare to ECO over the past half-year (their first two full Quarters since their inception)? The chart below on p.14 shows ECO has outperformed both those.

A new **Wilder Nasdaq OMX® Energy Efficient Transport Index (HAUL)** – and a **WilderHill Progressive Energy Index (WHPRO)** also rebalance for start of Q1 2009.

Besides this **WilderHill Clean Energy Index® (ECO)**, we just note an independent yet relevant **Wilder Nasdaq OMX® Energy Efficient Transport Index (HAUL)** is a new "Energy Efficient Transport Index"™, <http://www.greentransportation.com> - also we just note **WilderHill Progressive Energy Index® (WHPRO)** is the first to capture opportunities found in improving efficiency and reducing CO2 from dominant sources of energy today, <http://www.whprogressive.com>. Both are in the Appendixes below just for anyone interested in themes beyond clean, renewable energy-alone. Plus **WilderHill New Energy Global Innovation Index (NEX)** may be of interest. Their 3 trackers are PTRP, PUW, PBD.

Stock Markets Have Lately Plummeted: the human response

Lest we be accused of being entirely too gloomy throughout this Report, here's just a bit on some *possible* attractiveness of securities after tremendous declines of 2008, no matter whether for bonds, mutual funds, ETFs broadly, (or sector ETFs etc). Put aside for a moment our typically highlighting downsides volatility in a sector as likely to 'drop like a rock' as clean energy; we can at least note here, that unlike our past fears that any regression to mean would bring mainly sharp declines in ECO, it is much different today.

As this passage is written in early December 2008, a great degree of market unwinding is decidedly behind us especially just now. While to step in at present, fresh, *after* a plummet is always very, *very hard(!)* – we at least note that human nature might otherwise lead us astray as investors. As described by The Economist (12/06/2008),

If savers treated financial assets as they do other goods, they would sell them when they are expensive and buy them when they are cheap. Actually, they do the opposite. They piled into the market in 1999-2000, at the peak, and are piling out of it now [late November 2008]. They should, of course, have got out in 2000, when the global price-earnings ratio was 35; shares look relatively much more attractive now, since the ratio is down to ten. A recent analysis shows that, when American price-earnings ratios are low, returns on equities over the next decade average 8%; when they are high, returns average 3%.

But people's recent losses have made them cautious. They are putting their money cash or money-market funds, rather than equities or corporate bonds. The returns they are getting on their savings look increasingly pitiful. Interest rates are falling sharply with more central banks announcing cuts this week. Savers may be initially shielded from the full impact of those reductions, because commercial banks are competing for retail deposits. But rates in many big economies are heading for, or have already reached, 1-2%.

Caution is understandable, after the trauma of this year. Equity and corporate bond markets could yet fall further, especially as the news on the economy seems to get worse every week. But it is still perverse that investors were happy to buy shares nine years ago, when the ratio of share prices to profits was three times what it is today, and are determined to keep their money in cash and bonds.

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For so many people and markets of all kinds then, 2008 simply couldn't end soon enough. To be sure 2008's declines may resume in 2009 or grow much worse soon ... or things *may* turn ahead, creating some opportunity out of remarkable levels reached in 2008. But it's a situation almost Shakespearean in nature today, that tests fortitude among all investors.

Looking Forward to 2009

How did we do in predictions made just over one year ago in late 2007, of what would come in 2008? We made one doosey of an error not seeing severity of collapse that came in 2008 as stocks globally plummeted. While we're maybe in good company for not having foreseen a crash (we expected a moderate downturn, more modest credit crunch and a somewhat dampened demand for energy in 2008), we'll reprise here main excerpts in order to see where we predicted accurately – and surely where we did not:

Contemplating Possibilities that Might Impact Clean Energy in 2008

Looking forward, 2 factors are different in this December 2007, from last year. One is that 1) the risks of recession and/or higher inflation appear at this point to be modestly higher going into 2008, than they were in December 2006 and going into 2007. Either a slowdown in the world economy (dampening the demand for oil & energy in the first place) or higher costs of money such as a credit crunch in 2008 could certainly have dramatically negative impacts on clean energy.

A second factor is 2) with oil prices today, in late 2007, being much greater at some \$95/barrel, or 50% higher than last December 2006 @\$61, the prospects for a swift-rise in prices ahead in 2008 that will in turn also buoy clean energy seems reduced compared to December 2006. It is now more likely too we'll see major new oil finds such as in the South Atlantic deep-water, or Arctic and elsewhere as dearer oil makes previously uneconomic exploration worthwhile. Yet that said, geophysical realities still constrain (think of Cantarell, Mexico) and Peak Oil still raises the very hard work of merely keeping up with new demand, as China, India etc come online.

Nations too as in the Middle East and elsewhere that were once far and away oil exporters only, may begin to see a significant shift in 2008; a demographic combining young populations with new domestic industries may make their own oil key to their desired growth at home. Or, as oil or gas supply becomes more constrained and so energy portraits brittle, it can alternatively strengthen the possibility oil or gas exports are used as a political tool by diverse yet strategic suppliers such as Iran, Russia, Venezuela, Nigeria and others.

That said we also are aware of the recent forecasts by others that oil demand is instead about to crash in 2008 due to a looming supply glut and that we'll again soon revisit oil in a \$30 range in 2008. We do not agree with that assessment, but there clearly does seem greater range of possibilities now with oil perched at once-very-high sounding prices near \$95/barrel, than we saw last December at \$61. And excess oil can dampen demand for clean energy.

Drill down on the issue of clean energy specifically, and there are some factors that point to possibility of some robust sector growth in 2008. One to be sure is the political front. The Congress was able to pass legislation late in 2007 that the President signed, elevating fuel efficiency standards for cars (in rather distant future) and mandating more biofuels including new cellulosic ethanol other than from corn. But is any more possible in 2008?

It might be argued much more was possible in 2007 and a recent vote in Congress on subsidies for key renewables solar and wind power lost by only 1 vote in the Senate, thus nearly passing in Congress. But that view overlooks the fact the White House made it clear there would be a veto of any bill to reverse the subsidies for oil and instead put that roughly \$20+ billion instead into advancing clean energy. Lacking a veto-proof majority in the Senate (or 60 votes for Cloture to avoid certain filibuster), there was probably little chance for proponents in 2007 given a 'pay-go' that requires covering new spending.

What about the political front ahead in 2008? There's an absolute need to renew the production tax credit for wind power and given that plus growing influence (and wide support for) the solar industry in the House, some attention likely will be paid again to national energy legislation in 2008, despite diversions of a Presidential-election. But absent major unforeseen events there seems to be only moderate probability for creating some \$20 billion+ worth of new incentives in 2008. The following year, 2009, however, appears dramatically different: an assuredly new President in the White House and potentially different Congress (including the Senate) indicates that 2009 should be interesting.

Indeed it might be that an election in November 2008 of a new U.S. President from either party who is noticeably pro-action on both U.S. energy security and global climate change, could bring considerable attention to clean energy in very-late-2008. That may potentially even catalyze a brief anticipatory rally of attention to renewable energy in Fall 2008.

Consider however that at the level of States in 2008, it can be expected new incentives and activities will accelerate. Despite a not surprising decision in late December 2007 by EPA (after two years) that still favors the status quo ante and holds California hasn't the authority to take action on CO2 emissions, that's likely to be only a temporary-obstacle: California's Governor and those of other coastal States will again likely sue the federal government for jurisdiction to act on climate change. Whether States win yet again in Courts or a new President translates to a new EPA, it appears State-action is only growing.

Similarly at the City and local level, action is increasingly taken in innumerable ways. Around the world, cities are not waiting for national leadership especially where it lags. This is pointedly so in the United States as great opportunities lately become uncovered locally, wherein addressing both climate and energy security are seen to unleash vast new human potential and unlock fresh paths to profits, jobs and sound economic growth. Benefits and profits moreover are snowballing, meaning there's no reason to turn back.

More is anticipated over 2008 on many fronts outside of politics too. In philanthropy for instance, more funding is increasingly going intentionally to early-stage development of 'green technologies' that may offer possible 'solutions' on both the climate and energy security fronts – which had previous difficulty attracting early funding. These include e.g. concentrating solar power and lower-grade-heat geothermal that may allow essential baseload electrical power to be generated without CO2. An innovative quasi-charitable action combines the goal of giving in the public-interest with new venture capitalism.

As we'd noted a year ago, there's now doubt now that clean energy is going mainstream. We easily recall how different things were just one decade ago when the entire sector was regarded as more 'do-gooder' than real capitalism, and so largely disregarded as a viable sector for investment. The change of the last few years is little short of breathtaking.

But at a global level, action is most lugubrious of all since consensus is held up by slowest-actors such as the U.S. (Treaties to which the U.S. is signatory must be approved by the Senate). A recent summit in Bali laid out a two-year map post-Kyoto; that plus U.S. plans for a side-approach beginning January for 'major economies' ensures some talks happen in 2008. Doubtless some participants in these global discussions are waiting more for the robust U.S. participation that might come after January 2009. Too, some of the other industrialized nations may choose to move ahead in meantime with carbon trading. Now that one past opponent (Australia) has made its about-face and China too is revising its position as it sees the benefits, there seems to be an evolution towards clean energy.

Interestingly as the previous key leaders Germany and Japan move to more mature solar and wind installed base and so towards cessation or dramatically paring back their past subsidies for renewables, a fresh assortment of nations is entering the scene. They come from around the world, China, Spain, and North Africa for instance – and each one sees the many advantages they can gain as early movers in this field: it is certainly exciting.

Returning to the present, there was much that we did not foresee in 2008. Less off-the-mark we'd felt back in 2007 that oil would likely go higher (than a then \$95) and indeed that happened: oil went to \$140 ... however, while we'd expected demand destruction to then happen at higher prices and oil to drop down again, we did not expect to see prices much below \$61/barrel. It was thus some surprise to see oil drop to just under \$40 late in 2008. Yet we still believe OPEC may now prefer a floor @\$60-\$70, that the Saudi's might target \$75, and so <\$40 price is perhaps a shorter-term phenomenon. (OPEC may uncharacteristically even truly implement robust output cuts ahead if needed).

On the other hand (there's always 'another hand'!), global economies being in such dire straights for extended periods could drain OPEC of ability to prop up prices. Yet growth may eventually resume, so oil can rebound with some vigor and it wouldn't be greatly surprising to see prior highs one day breached. Oil markets today in 'contango' lends support to this, since oil for future delivery is priced (much) higher than spot prices today.

Might oil increase in 2009 -? Just look longer-term. Consider that, as the oil industry likes to point out, 'there's no cure for cheap oil like cheap oil.' Less expenditures for new exploration & development, refining capacity etc may lead to some spasm of oil prices, as supine global economies one day recover and demand resumes in Asia, Americas, Europe etc. A soft chorus warning of peak oil and energy security might too grow if demand then goes unmet – leading to future concerns about both use of oil & its long-term supply.

Yet there's also many valid and good reasons too for great pessimism and bearishness, as that can be forecast for 2009. Look just at a solar subsector and reasons for concern are legion: oversupply silicon cells, modules, panels, etc may need to be digested in a face of unlevel demand; margins may shrink for less-competitive crystalline; the horrific scenario worldwide of an ongoing credit crunch may not end soon; difficulty in forecasting government-subsidy-led PV demand globally; the falling prices & margins in STEG as well, and disruptive technologies such as new thin film and concentrating thermal ahead.

Likewise in wind problems are enormous: there's shortages of critical components like gearboxes, and basic materials like steel may rise in price ahead should global demand resume; difficulty engineering-out failures such as blade breakages that plague certain manufacturers; lack of transmission capacity & antiquated grid; summer windless-days in certain regions dropping output to near zero giving a nascent sector a black-eye; public opposition to wind onshore near built-out regions of Europe, permitting difficulties for new offshore wind such as in the U.S.; and a drying up of government support, etc etc.

It goes on and on, for other aspects of the Index (ECO) as well. Geothermal still has quite an uncertain future and some companies here are very small & speculative; it's uncertain the new electric cars or plug-in hybrid vehicle makers will get large capital infusions they will need to build large factories, and a re/depression, or credit crunch may yet decimate many of these small EV start-ups; advances now hoped-for in better batteries may not happen; materials intensive nature of new batteries despite better chemistries may keep them from coming down fast-enough in cost; the spectre that battery-fires may push back progress in electric cars, in PHEVs, and make 2009 'a lost year' for the industry, etc.

Ocean power may continue to languish as a merely promising, rather than commercialized for sizeable power generation. Or build-out of costly LEDs and other efficient lighting may be put off in 2009 if economies scale back over poor credit; demand-side improvements may be put off too in a credit crunch combined with cheaper power that makes adoption less compelling; new grid infrastructure may be stymied by enormous government deficits, etc etc. There's tremendous reasons, in short, why clean energy may again falter in 2009.

Helping sum up Q4 & all 2008, great drops (even *after* a bounce off Nov 20 lows in Appendix III) are seen in these data below from 12/18. Many there are still down by over -40%, by -60%, even -90% or more(!). Such large declines from 12-month highs may mean further big drops ahead (or room ahead for moves up with some regression to mean). Either way, these data are remarkable for showing a great bear market that was 2008:

Individual stocks in ECO: % Down off 1-year Highs, viewed of December 18, 2008.

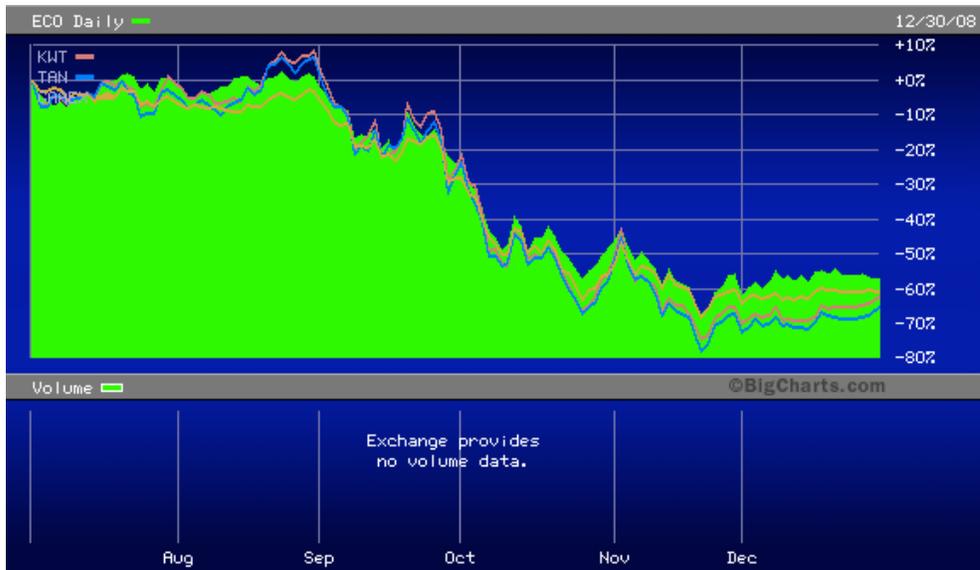
The PowerShares WilderHill Clean Energy Portfolio overall: -70%

Ener1: -26%	Zoltek -82%
Raser Technologies: -75%	Energy Conversion Devices -70%
Idacorp -19%	Sunpower -76%
Ormat Technologies -46%	Maxwell Technologies -64%
Om Group -72%	Cosan Ltd -83%
Sociedad Quimica Chile SA -58%	Gushan Envirntl Energy Ltd -88%
Valence -48%	Trina Solar Ltd -86%
Portland General Electric -34%	Suntech Power Ltd. -88%
American Superconductor -66%	JA Solar Ltd. -87%
CPFL Energia S.A. -48%	Renesola International -96%
Applied Materials -34%	Ocean Power Technologies -54%
Air Products -55%	Emcore -94%
Universal Display -61%	Ultralife Batteries -53%
International Rectifier -63%	Converge -84%
China BAK Battery -68%	Quantum Fuel Sys Tech -69%
Itron -45%	Advanced Battery Tech -57%
Fuel Systems Solutions -49%	Plug Power -72%
Cree -57%	Ascent Solar Technologies -85%
First Solar -57%	Rubicon Technology -88%
FuelCell Energy -73%	Spire -80%
Calpine -66%	Beacon -71%
Ballard Power -70%	Amerigon -85%
MEMC Electronic Materials -85%	--
Evergreen Solar -84%	U.S. Geothermal -89%
Echelon -70%	--
Yingli Green Energy Ltd. -86%	--

Also summing up Q3/Q4 is a chart below for PBW vs. VIX to late December, showing some mild inverse relationship between the two, though not predicting where they're headed:



Finally below is ECO in a Down Q3/Q4 over the past six months, shown in green (down, but less so than two solar ETFs, & an active fund):



Changes for the Clean Energy Index® (ECO) for Q1 2009

There was 1 Addition at the rebalance for start of Q1 2009: PWR. There were 2 Deletions of MDTL & PEIX; also an intra-quarter Deletion during Q4 2008 of VSE on 11/3/2008.

Summary

Fourth Quarter of 2008 opened with the Clean Energy Index® ([ECO](#)) at 150.43, and closed at 86.36 for a remarkable and negative return of about -42.6% in a hugely volatile to the downside Quarter. There were 2 Deletions at the rebalance for a start of Q1 2009: MDTL and PEIX, and one addition of PWR. As always we welcome your thoughts & suggestions.

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 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 December 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.

Appendix I: Index (ECO) Past Q4 2008 Components and Weights, as of 12/14/2008:

Following were the Q4 weightings at about 2 weeks before the rebalance to start Q1 2009; after rebalance, every stock floats according to its share price over the coming Quarter.

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

Company Name	Symbol	% Weighting
Ener1	HEV	5.22%
Raser Technologies	RZ	4.08%
Idacorp	IDA	3.97%
Ormat Technologies	ORA	3.60%
Om Group	OMG	3.54%
Sociedad Quimica y Minera de Chile SA	SQM	3.39%
Valence	VLNC	3.19%
Portland General Electric	POR	3.15%
American Superconductor	AMSC	3.05%
CPFL Energia S.A.	CPL	3.01%
Applied Materials	AMAT	2.97%
Air Products	APD	2.86%
Universal Display	PANL	2.83%
International Rectifier	IRF	2.75%
China BAK Battery	CBAK	2.71%
Itron	ITRI	2.66%
Fuel Systems Solutions	FSYS	2.66%
Cree	CREE	2.64%
First Solar.	FSLR	2.63%
FuelCell Energy	FCEL	2.49%
Calpine	CPN	2.39%
Ballard Power	BLDP	2.28%
MEMC Electronic Materials	WFR	2.26%
Evergreen Solar	ESLR	2.19%
Echelon	ELON	1.99%
Yingli Green Energy Holding Ltd.	YGE	1.99%
Zoltek	ZOLT	1.89%
Energy Conversion Devices	ENER	1.76%
Sunpower	SPWRA	1.73%
Maxwell Technologies	MXWL	1.57%
Cosan Ltd	CZZ	1.57%
Gushan Environmental Energy Ltd	GU	1.53%
Trina Solar Ltd	TSL	1.31%
Suntech Power Holdings Co Ltd	STP	1.10%
JA Solar Holdings Co Ltd	JASO	1.07%
SOLA International	SOL	1.03%
Ocean Power Technologies	OPTT	1.01%
Emcore	EMKR	0.91%
Ultralife Batteries	ULBI	0.90%
Comverge	COMV	0.84%
Quantum Fuel Sys Tech	QTWW	0.75%
Advanced Battery Tech	ABAT	0.67%
Plug Power	PLUG	0.58%
Ascent Solar Technologies	ASTI	0.51%
Rubicon Technology	RBCN	0.46%
Spire	SPIR	0.45%
Beacon	BCON	0.44%
Amerigon	ARGN	0.41%
Pacific Ethanol	PEIX	0.39%
U.S. Geothermal	HTM	0.27%
Verenium	VRNM	0.24%
Medis Technologies Ltd	MDTL	0.10%

Appendix II: Index (ECO) Components & Weights at the latest Rebalance: **INDEX (ECO) SECTOR & STOCK WEIGHTS FOR THE START OF Q1 2009. 51 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 (10 stocks @3.00% each; +4 banded stocks)

**Ascent Solar*, ASTI. Solar, early-development stages for thin film CIGS flexible PV.

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

Energy Conversion, ENER. Thin film, amorphous flexible PV panels; also batteries.

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

First Solar, FSLR. Thin film, CdTe solar panels reduce silicon need, and costs.

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

**Ocean Power Technologies*, OPTT. Wave power, in speculative very early-stage.

Ormat, ORA. Geothermal power, works too in areas of recovered heat energy.

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

SunTech Power, STP. Solar, major producer of PV and is based in China.

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

**U.S. Geothermal*, HTM. Geothermal, site acquisition, PPAs, development-stage.

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 - 29% sector weight (11 stocks @2.50% each; +3 banded stocks)

Applied Materials, AMAT. Upstream PV fabrication, manufacture thin film & crystalline.

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

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

Cree, CREE. LEDs for efficient lighting, manufacturer for power-saving lights.

Echelon, ELON. Networking, better management of whole energy systems.

International Rectifier, IRF. Efficiency-enabling electronics producer.

Itron, ITRI. Energy monitoring, new measurement and management systems.

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

Quanta Services, PWR. Infrastructure, modernized grid, smarter power transmission.

Raser, RZ. Speculative small licensing firm, small geothermal & electric motors.

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

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

**Spire*, SPIR. Upstream PV fabrication equipment, also nanotech, semiconductors.

Universal Display, PANL. Organic light emitting diodes, OLED panel displays.

Energy Storage - 16% sector weight (5 stocks @2.80% each; +4 banded stocks)

**Advanced Battery*, ABAT. Batteries, China based makes Li-ion for diverse applications.

**Beacon*, BCON. Flywheels, non-chemical firm power alternative; also inverters.

**China BAK*, CBAK. Batteries, large China based OEM manufacturer of Li-ion cells.

Ener1, HEV. Batteries, diverse in Li-ion power storage, nanotechnology; fuel cells.

**Maxwell*, MXWL. Ultracapacitors, alternative supplement to batteries, in hybrids, UPS.

OM Group, OMG. Cobalt and other precursors, producer for Li-Ion batteries, FCs.

Sociedad de Chile, SQM. Lithium, major Li supplier for batteries; also STEG storage.

Ultralife, ULBI. Batteries, lithium cells for a variety of mobile and stationary uses.

Valence, VLNC. Batteries, phosphate-based lithium cells address thermal events.

Energy Conversion - 7% sector weight (2 stocks @2.50% each; +4 banded stocks)
**Amerigon*, ARGN. Thermoelectrics, subsidiary is 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.
Fuel Systems Solutions, FSYS. Gaseous fuels integrator for cleaner-fuel vehicles.
**Plug Power*, PLUG. Mid-sized fuel cells for distributed generation, home power.
**Quantum*, QTWW. Alternative fuel vehicles & propulsion systems; also solar nexus.

Cleaner Fuels - 6% sector weight (2 stocks @2.50% 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, vegetable oil, used-cooking oil etc feedstock; China based.
**Verenium*, VRNM. Enzymes, diverse cellulose feedstock; speculative early stages.

Greener Utilities - 10% sector weight (4 stocks @2.50% each)
Calpine, CPN. Geothermal: a major North American producer; low-carbon assets.
CPFL Energia S.A, CPL. Brazil Utility with both large and small hydroelectric.
Idacorp, IDA. Hydroelectric, Utility with sizeable hydroelectric, some small hydro.
Portland General Electric, POR. Utility with hydro & thermal, growing renewables.

Appendix III: Individual stocks' % increase from 1-year Lows: as viewed on 12/14/2008.
For many this is from Nov. 21 lows and so this may indicate gains over 3 weeks.

Stock name: Percentage increase from their 1-year Low, as of 12/18/2008

Ener1: +90% (low set before Nov 20)	Zoltek +63%
Raser Technologies: +88%	Energy Conversion Devices +23%
Idacorp +32%	Sunpower +70%
Ormat Technologies +40%	Maxwell Technologies +25%
Om Group +73%	Cosan Ltd +42%
Sociedad Quimica Chile SA +82%	Gushan Envirntl Energy Ltd +45%
Valence +113%	Trina Solar Ltd +38%
Portland General Electric +18%	Suntech Power Ltd. +77%
American Superconductor +82%	JA Solar Ltd. +96%
CPFL Energia S.A. +19%	Renesola International +55%
Applied Materials +33%	Ocean Power Technologies +66%
Air Products +17%	Emcore +21%
Universal Display +78%	Ultralife Batteries +101%
International Rectifier +29%	Comverge +127%
China BAK Battery +33%	Quantum Fuel Sys Tech +170%
Itron +67%	Advanced Battery Tech +108%
Fuel Systems Solutions +224%	Plug Power +96%
Cree +24%	Ascent Solar Technologies +55%
First Solar +37%	Rubicon Technology +64%
FuelCell Energy +71%	Spire +93%
Calpine +23%	Beacon +14%
Ballard Power +11%	Amerigon +26%
MEMC Electronic Materials +54%	Pacific Ethanol +18%
Evergreen Solar +45%	U.S. Geothermal N/A
Echelon +29%	Verenium +7%
Yingli Green Energy Ltd. +111%	Medis Technologies Ltd +15%

Appendix IV: Q1 2009 Rebalance for an Independent yet relevant, HAUL Index™

Wilder NASDAQ OMX Global Energy Efficient Transport Index (HAUL)

For start of Q1 2009. 39 stocks total.

(a tracker for this Index is PTRP).

Alternative Vehicles. 8 stocks. 25% Sector weight; stocks @3.00% each (plus 2 *banded stocks).

HEV – *Ener1 (U.S.)*. Lithium ion battery maker, for electric cars, plug in hybrid vehicles.

*MXWL – *Maxwell (U.S.)*. Ultracapacitors, rapid energy discharge/storage useful for EVs.

PIA:BIT – *Piaggio SpA (Italy)*. Scooters, mopeds & motorcycles; brands include Vespa.

*QTWW – *Quantum (U.S.)*. Alternative fuel propulsion systems, hybrid electric drive.

SQM – *Sociedad de Chile (Chile)*. Lithium, for electric & plug in hybrid vehicle batteries.

VLNC – *Valence (U.S.)*. Lithium ion EV batteries; phosphate addresses thermal events.

6674:TYO – *GS Yuasa (Japan)*. Mass production of Li-ion batteries for EVs & hybrids.

7309:OSA – *Shimano (Japan)*. Leading manufacturer of bike components, gears, shifters.

9914:TPE – *Merida (Taiwan)*. Bike manufacturer, products in Europe, Americas, Asia.

9921:TPE – *Giant (Taiwan)*. Bike manufacturer, also developing hybrid electric bikes.

Rail & Subway Systems. 10 stocks. 25% Sector weight; stocks @2.50% each.

BBD:B:TSE - *Bombardier (Canada)*. Manufacturer of more efficient locomotives, light rail.

BNI - *Burlington Northern Santa Fe (U.S.)*. Lower-torque bearings, better aerodynamics.

CNR – *Canadian National Railway (Canada)*. Rail can average 3x more efficient than trucks.

CSX - *CSX Corp (U.S.)*. Invests \$1 billion in efficient Tier II locomotives; EPA SmartWay.

NSC - *Norfolk Southern (U.S.)*. Software optimizes rail car movement; SmartWay partner.

UNP - *Union Pacific (U.S.)*. 3,000 fuel-efficient locomotives added to fleet; SmartWay.

VOS:FRA – *Vossloh AG (Germany)*. Makes European diesel-electric, electric locomotives.

7122:TYO – *Kinki Sharyo (Japan)*. Shinkansen Bullet Train; light mass transit vehicles.

9020:TYO – *East Japan Railway (Japan)*. Advanced efficiency railcars, regen braking.

601006:SHA – *Daqin Railway (China)*. Heavy haul freight rail trains, largest in China.

Sea, Land, Air & Intermodal. 9 stocks. 25% Sector weight; stocks @2.72% each (plus 1 *banded stock).

CLNE – *Clean Energy Fuels (U.S.)*. Advancing centralized fleet use of natural gas/CNG.

FGP:LON – *FirstGroup plc (U.K.)*. Public transportation; in buses, rail and logistics.

FSYS – *Fuel System Solutions (U.S.)*. Enabling natural gas, alternate fuels in transport.

HHFA:FRA – *Hamburger Hafen und Logistik AG (Germany)*. Better transport logistics.

*LOGN3:SAO – *Log-In Logistica Intermodal SA (Brazil)*. Intermodal cargo logistics.

MRTN – *Marten (U.S.)*. Modern temperature-sensitive, long-haul truck carriage.

OSG - *Overseas Shipholding (U.S.)*. Bulk shipping, VLCCs, diversifying in LNG, CNG.

SAFT:EPA – *Saft Groupe SA (France)*. Advanced batteries in trains, subways, trams.

SGC:LON - *Stagecoach Group plc (Scotland)*. Trains, buses, trams: in U.S. and U.K.

9101:TYO - *Nippon Yusen KK (Japan)*. Energy efficient marine transport, terminals.

Transport Innovation. 8 stocks. 25% Sector weight; stocks @3.06% each (plus 1 *banded stock).

ALO:EPA – *Alstom SA (France)*. More efficient transport infrastructure, high speed TGV.
 BG:LON – *BG Group (U.K.)*. Natural gas, CNG, LNG used as new transportation fuels.
 LSTR – *Landstar (U.S.)*. Advanced logistics, information technology in hauling goods.
 NFI:TSE – *New Flyer (Canada)*. Hybrid electric buses, alternative fuel drive systems.
 RS – *Reliance Steel & Aluminum (U.S.)*. Aluminum, used to lighten modern vehicles.
 STS:BIT – *Ansaldo STS SpA (Italy)*. New information technology, subways and rail.
 WBC – *Wabco (Belgium)*. Control systems, better electronic automation in vehicles.
 *WPRT/WPT:TSE – *Westport Innovations (Canada)*. Advanced natural gas vehicles.
 1211:HKG - *BYD (Hong Kong)*. Manufacturer of innovative electric cars, new batteries.

Appendix V: Q1 2009 Rebalance for independent: WilderHill Progressive Energy Index.

(for reducing CO2 in the browner, still dominant energy portrait of today).

Sectors & Stock Weightings: WilderHill Progressive Energy Index (WHPRO)

For start of Q1 2009. 45 stocks total.

(A tracker for this Index is PUW).

Alternative Fuel - 25% Sector Weight (8 stocks @3.12% each)

Cameco, CCJ. Uranium fuel, one of the largest producers; also fuel processing.
Chesapeake Energy, CHK. Natural gas, one of largest U.S. independent producers.
Methanex, MEOH. Methanol, liquid fuel may flexibly derive from organic & fossil fuels.
Praxair, PX. Hydrogen, as energy carrier for FCs & ICEs; supplier of industrial gases.
Questar, STR. Natural gas, explores for and produces gas and natural gas liquids.
Range Resources, RRC. Natural gas, produces in Appalachian & Gulf Coast regions.
Southwestern Energy, SWN. Natural gas, produces in U.S. Arkoma Basin, East Texas.
USEC, USU. Uranium fuel, converts Soviet warheads into U.S. nuclear feedstock.

New Energy Activity - 22% Sector weight (9 stocks @2.44% each)

Eaton, ETN. Hybrids, better electric and fluid power for truck and auto applications.
Foster Wheeler, FWLT. Infrastructure, engineering services, LNG, Biomass, WtE, CCS.
GrafTech, GTI. Graphite, advanced electrodes, fuel cells, power generation.
Hexcel, HXL. Lighter composites, advanced structural and reinforcement materials.
Johnson Controls, JCI. Building controls, also advanced hybrid vehicle systems.
McDermott, MDR. Infrastructure, reduces coal emissions, built large WtE facility.
Owens Corning, OC. Materials lightening, better insulation composite materials.
Siemens AG, SI. Conglomerate, highly diversified in energy innovations globally.
United Technologies, UTX. Conglomerate, advancing varied new energy products.

Better Efficiency - 21% Sector Weight (7 stocks @2.85% each + 2 banded stocks)

Badger Meter, BMI. Meter reading & measurement for better power management.
Baldor Electric, BEZ. Better energy-efficiency by advanced technology motors.
Emerson Electric, EMR. Broadening energy efficiency, storage, and climate solutions.
 **EnerNOC*, ENOC. Demand response energy management, smarter grid efficiency.
Esco Technologies, ESE. Power grid, advanced two-way metering & communications.
 **LSB Industries*, LXU. Greater energy efficiency in building end-use, heating, cooling.
Koninklijke Philips Electronics NV, PHG. Efficient LEDs, advanced industrial lighting.
National Grid plc, NGG. Better electric power & natural gas transmission, efficiency.
Woodward Governor, WGOV. Energy controllers, industrial turbines for generation.

Conversion & Storage - 15% Sector weight (4 stocks @3.12% each +5 banded stocks)

**A-Power*, APWR. Distributed power generation, micro grid systems; a China focus.

**Capstone Turbine*, CPST. Microturbines, distributed power, flexible-fuel sources.

**Clean Energy Fuels*, CLNE. Natural gas fleet vehicles, integration and distribution.

Covanta Holding, CVA. Incineration, converts waste to energy (WtE); conglomerate.

Energizer, ENR. Lithium, NiMH, various other battery and charger technologies.

Energy Solutions, ES. Spent nuclear fuel storage, recycling, and management.

EnerSys, ENS. Battery maker, for telecommunications, utilities, motive power.

**Westport Innovations*, WPRT. Enables vehicles to run on natural gas, other fuels.

**Exide Technologies*, XIDE. Lead-acid batteries for motive uses, also in networks.

Emission Reduction - 8% Sector Weight (2 stocks @2.75% each +5 banded stocks)

Corning, GLW. Diverse activity includes emissions reduction, filters, and catalysts.

**Fuel Tech NV*, FTEK. Post-combustion, control systems reducing NOx, pollutants.

**Headwaters*, HW. Emissions reduction from coal, also synfuels, reagents, fly ash.

**Peerless*, PMFG. Pollution reduction, effluents separation & filtration systems.

**Rentech*, RTK. Gas to Liquids, potential for CO2 emissions reduction & sequestration.

Sasol Ltd, SSL. Syngas to synthetic fuels; potential CO2 capture/sequestration (CCS).

**Tenneco*, TEN. Automotive end-of-pipe emissions controls, catalytic converters.

Utility - 9% Sector weight (3 stocks @3.00% each)

Companhia Energetica de Minas Cemig, CIG. Brazilian Utility, large hydroelectric.

Enersis, S.A., ENI. Chile, Argentina, Peru etc. Utility, hydroelectric, Endesa nexus.

FPL Group, FPL. Florida Utility, growing lower-CO2 natural gas, nuclear, also wind.
