



Q3 2011 Quarterly Report: WilderHill Clean Energy Index[®], September 30, 2011

3rd Quarter 2011 opened with the Clean Energy Index[®] (ECO) at 91.38, and closed at 55.48, for an exceptional fall in Q3 of -39.3%(!). For a rather longer view of 2011 Year To Date, clean energy/ECO has so far gone down even more YTD, declining by -47.5%.

Or go further back. After sharp gains over 2004-2007 and rising to near 300 late in 2007, there's been nearly 4 years of declines. ECO is down now by a startling four/fifth's. Volatile Q3 2011 has brought ECO Index[®] nearby and overtaken prior all-time low of 59.

To recap from 2004 @ 125, ECO had moved up strongly for 4 years to end-2007 @ near 300 (296 on 12/26/2007). We next saw a remarkably fast descent across clean energy over 2008 down to a low of 65 later that year. A double bottom soon afterwards formed on a 2nd fall culminating March 2009 down at its noted then-low close of 59, as clean energy along with global markets sank with onset of the 'great Recession.'

Following March 2009 at 59, clean energy and so ECO firmly rebounded. Gains pushed ECO up to 114 some 2 years later by Spring 2011, nearly doubling. Since Spring of 2011 it has dropped hard again by almost exactly ½, to close at 55, erasing that rebound.

Most recently Q3 at first saw repeated bottoms of again 65, revisiting lows of 3 years ago. ECO 4x times in Q3 hit bottoms of 65,65,65,65 – each time bounding off 2 weeks apart on decreasing robustness. Then it pushed through late in Q3 and like in Spring 2009 found seeming 'resistance' again near 59. Independent tracker (PBW) seemed to find resistance around \$5.8 late in Q3. Fresh bottoms were made a last week and then last day of Q3 so it's nearly 100% certain ECO will enter, quite literally, uncharted territory in Q4.

After 7 years live, ECO ended Q3 2011 at new lows just beyond early 2009. A few thoughts may be gleaned from this period since 2009 of repeated falls, bottoms, rebounds & 2011's plunge. One is despite such hard falls ECO has still been over the years very tough for either the narrower Indexes here in clean energy – or active funds – to beat.

Another point is drops in clean energy were fiercest by far, in solar. Wind fell hard too, yet lately it has done relatively 'well'. Overall for 4 years now Indexes steeped in seminal solar (less so for wind) drag, while before there'd been upward volatility as captured by ECO. Here were forceful nearly-all-downwards moves in Q3:



There has been no safe haven within clean energy since 2008. Even active funds here that might go 'short', or try to time markets were crunched: there's been no shelter. Simply a general rule 4 years now has been greater an exposure to solar, greater typically the fall. Alternative theme Indexes - like WHPRO— did do much 'better' this period.

Thus in the Report we'll look at few aspects of this impactful solar space. We then take a look at an interesting occurrence: unusually if viewed (only) from Year to Date start, we can see a short period when ECO 'underperformed' the solar theme (and an active fund) albeit briefly. That's pretty uncommon, given ECO more typically 'outperforms'.

Data show 2 causes for brief 'underperformance' in broad clean energy. One is ECO just before had gone (much) farther up latter 2010 ending that year higher than solar or wind (higher relatively too than an active fund). By coincidence 2011 started with ECO at relatively elevated point impacting early 2011 YTD performance in first ½ of year only. Over a longer period, that lag vs solar vanishes (wind lately has done 'well').

Unusual brief underperformance vs solar seen 2011 YTD, disappeared by Fall.

Moving on last 4 years was arguably partly a 'regression to mean' in solar. In this same time wider clean energy with its more diverse drivers & histories across e.g. efficiency, storage, O/LEDs, key materials, etc etc — have shown markedly less decline.

This notion extends out. In mirror opposite of 2003-07 when solar was 'strongest', since then differing alternative energy themes with fewer clean renewables (esp. little solar) have done comparatively much 'better' these last four years.

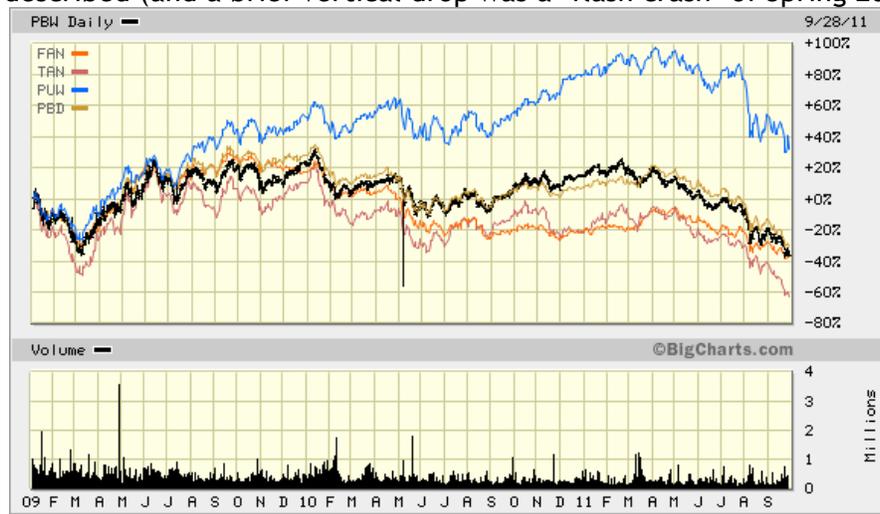
So compare ECO to an Index with sparse solar — or to one exclusively in just solar, or wind — ECO strikes middle ground. Compared to ECO, the less-green alternative energy stories maybe did 'worse' 2003-07, yet 'better' a past 4 years on fewer solar pure-plays. Conversely ECO's theme at first bested less-green in 2003-07, and then lagged last 4 years given its solar & wind that are so seminal to the clean energy theme.

As examples 2 themes that rose strongly and staying higher even in vexed 2009-2011 are WilderHill Progressive Energy Index (WHPRO) for improving today's dominant energy that excludes renewables — and the Wilder Nasdaq Global Energy Efficient Transport Index (HAUL). Both did 'much better' than clean energy, in the US or globally.

In sum for 4 years, renewables (solar especially) sizably trailed broad clean energy. Broad clean energy in turn, trailed the themes with less solar/wind for instance those more in semiconductor tech. It seems entirely plausible solar's 4-year plummet *may* one-day turn-around; solar *might* jump again (like briefly in early 2011) ... but it is impossible to know for certain if & exactly when. Wind may jump too as we've seen to an extent lately. That said both solar & wind, are inarguably core to clean energy's story.

Below is a pretty telling Chart for 2009 - to present. Over nearly 3 years, three WilderHill Indexes (all via trackers) show varying themes — with 2 others for solar & wind. Here is oldest most-widely followed clean energy benchmark ECO, in **black**. We see fairly close to it is leading NEX for Global Clean Energy mainly outside the U.S., in light **brown**. 'Best' by far is Progressive WHPRO Index for improving dominant energy sources of today and it importantly excludes the renewables solar & wind, shown in **blue**.

Plus we include 2 narrow Indexes (via trackers) that aren't 'ours'. They interestingly are an independent Index that usefully tracks a global Solar theme alone, in brownish red. That other usefully is for a global Wind theme only in orange Results reflect this story described (and a brief vertical drop was a 'flash crash' of Spring 2010):



For still longer view, here's past 5 years' performance for all again via trackers. Besides the 5 here too is a 6th line, a sample active managed fund for global alternative energy. This chart tells a similar story. Look at ECO tracker in black, or solar red, or wind orange: moves show there's been no safe haven in clean energy since 2008. That includes an active fund in yellow that may go short, or try to time markets. Only a WHPRO theme (PUW) for alternative energy 'ex solar/wind' has here come back to near even:



In sum relatively 'better' (or less bad) performance came in clean energy broadly, from efficiency, energy storage, LEDs, materials, etc etc. That was enough to ensure ECO Index® didn't fall as far as say solar alone (which jumped up 2003-2007). Lately wind has regained considerable ground; meanwhile solar faces very harsh headwinds.

Issues Confronting Solar

Some very specific & vexed issues confronted the solar sub-sector a past few years such as severe overcapacity, compressed margins, lost pricing power & subsidy cuts.

Much more widely too, there's now great *risk aversion* in global markets. Consider that in years prior clean energy arguably did rather 'better' in times of typical risk appetite when so-called animal spirits were rather nearer common levels. Appetite for risk is important. Note then desire for risk was thrashed starting 2009; investors today seek just return *of* investment -- hardly any return *on* investment. 10 year bond yields <2.0% are in 2011 normal. This is a fantastically bearish climate for risk-laden clean energy.

Yet narrower solar-only issues have cut deepest of all. The very low-cost, China-based PV makers for example have meant new cost challenges & lost pricing power. Mid term it means great price reductions for buyers. But short term it is havoc for profitability; vexing consolidation is now very likely ahead as China leads a way with huge price declines (while its demand pushes up some input prices). This is tremendous pressure on the Tier 1, and worse on Tier 2 & 3 companies throughout the process, as discussed next.

Here are a few spotlighted segments:

Consider for instance a large upstream Tier 1 supplier of polysilicon & also wafers, which in turn make up modules and so panels. Like many firms of a past few years this China-based name trades on U.S. markets. A manufacturer of polysilicon ('poly') for crystalline silicon (c-Si) PV panels it runs complex plant with process expertise and operates in a technological & capital demanding system (not just on brute capex). The firm uses today's more common modified Siemens process and it operates in 4 steps:

1st *Hydrochlorination; this uses a silicon tetrachlorosilane (STC) & hydrogen to make TCS;
2nd *Distilling the TCS (or SiH₄) in high purity feedstock, then applied in deposition of poly;
3rd *Depositing poly by vaporized gas onto rods that cool; and lastly to push down prices,
4th *Recovery of vented gas as mixed chlorosilanes, to be re-used.

Makers of poly/wafers for c-Si PV need costly equipment: that plus complexity was once a barrier to entry. Yet today all are being hit hard by great ramp in China that started near zero. There's fierce competition, dramatic reductions in gross margins & so prices at the factory gate. Tier 1 c-Si panels are becoming a nearly interchangeable commodity for the Tier 1 highest (at least of China) PV quality - less so for Tier 2 and Tier 3.

Solar PV c-Si *modules* selling near \$1.20/watt is good for buyers, hard on sellers' margins. Many makers too are China-based with common access to cheap capital, labor, land, & have government support; they benefit from low taxes & can co-locate. But absence of regulations is a *short-term gain only* (& not real) - it means horrible pollution.

This sample firm helped lead a way in pushing down wafer costs: vertically integrated it makes poly & wafers and wafer prices continue to fall. Early Q3 wafer lows near \$0.50/W are already giving way, down. Yet few profitably make wafers for less -- its costs being so low for poly is hard on all, as costs must be very low to profit. It means consolidation ahead, as smaller names find it hard to compete. Quality issues re-emerge too for Tier 2 & 3 competitors with cheaper scrap poly, again tough on share prices.

Data from many analysts can illuminate (and we gratefully acknowledge J. Pichel, Alternative Energy Research, at Jefferies). For instance that Tier 1 poly-producer may see demand from China grow from tiny numbers of a few years ago, to a GW solar market in 2011 and bigger in 2012/13. In part demand may mean welcome price stabilization ahead, if orders pick-up and excess capacity is better wrung out. Solar projects even may see nearly a 13% IRR in China given its strong local, provincial, and national support.

Hopes would be that if wafer prices stay not far below \$0.50/W for brief stability, it can afford clarity on panel pricing to late 2011, see e.g. <http://pvinsights.com>. Making 5.5GW wafers now, however, their newer 15kMt poly line may take capacity to 46kMt ahead.

On such dynamism, Tier 1 modules early Q3 [\\$1.20/watt](#) (now \$1.13/W) its very hard for poly/module firms etc to show gains in profits/share prices. Stocks all suffer near term.

For example one segment at that firm made some 12,000 MT of poly, up 11% from near 11,000 MT in 2H 2010. Its production costs moved down to just \$22/kg, down -8% from \$24 q/q. Wafer production is growing @ 2GW now, vs a 1.2GW 2H of last year. Processing costs are down at \$0.22/W (-17% q/q, -24% y/y). They expect poly production costs may go down yet towards \$20/kg(!). Again, hardly allows for gains in bottom line *profit*.

Think of a year ago @poly prices near \$60/kg; a question was if this key input could drop to \$50/kg - yet we're now going below that. Yes China today still sources some upstream poly from overseas, but the overcapacity means nobody makes great profit.

Price drops continue. For rapidity of change, 6 years ago poly prices were say \$100/kg. Then 5 years ago on China production puny as a poly shortage emerged, poly rose to near \$300/kg; in 2008 it grew near \$350+(!). Back then near 95% of China poly demand was met by imports. Subsequently it ramped poly supply with great alacrity; prices plummeted and production growth has been remarkable, priced now near \$50/kg (or less).

This is just for one (big) firm in a poly space. Among China-based firms cost reductions are relentless, with modules selling for near 20% less than U.S.-built – on razor thin margins. Its quality too is continuously being addressed in formidable Tier 1 competition.

Thus profitability is hammered at poly/wafers upstream, modules/PV downstream. China firms, like those globally, have been *all very hard hit* in share price the past 4 years.

Modules had brief respite at \$1.20/watt. Buyers hope for lower figures yet, manufacturers for stable ones, but the 'buyers are winning'. Q2's growth wasn't robust near 6.5% Q/q, & moved up only some in Q3. That said macroeconomic uncertainty is hammering EPS & likely Q4 demand. With excess capacity the Average Selling Prices (ASPs) <\$1.20 are very painful. To see a de facto ASP floor near say \$1.10 per module in 2012, & \$0.95 in 2013 could be a bit stabilizing – but industry foresees prices may go lower still.

In & out Asia, helpfully, some expansion is being reined in to rationalize capacity a bit. After consolidation excess capacity might perhaps be better sopped up. Yet offsetting all that is weaker European demand, as its PV subsidies grow unaffordable. Perhaps that may be offset somewhat by growth elsewhere. A Feed In Tariff ('FIT' below) in Japan post-Fukushima Daichi, is net positive for solar along with China, U.S., India, Australia growth. To be sure, bad news is now priced into solar equities!

Consider recent P/E ratios in a solar space. Once high here and seen by Wall Street as new growth area, solar had been north of P/Es @ 25x. However they've moved far down. China solars dropped to near 2x in a last 2008 trough and are near some <5x now. (P/B multiple averages in 2011 went from 1.4x to 0.4x, dropping about 2/3rd).

For China c-Si names notably, we saw P/Es in Q3 of 5, 4, & under 3(!). Partly more obtuse nature of China's-firms and past questions over reporting & accounts in general (not necessarily specifically in solar) made for muddier waters. That adds in essence a 'tax' that pushes down valuations, P/Es (and P/B) relative to more transparent equities. Murkier numbers or using reverse takeover shell corps doubtless depress values in times of great-uncertainty like we've seen since a great financial collapse of 2009.

Other items briefly merit mention as solar expands, pressuring selected supply chains. That poly shortage of 2007 is gone. Yet for an example, sourcing lower-iron glass could be an issue next year; transmittance comes into play on high-iron content. Or reducing silver content in PV metallization pastes may be an issue too, in reducing marginal costs. Silver prices (like gold) have jumped of late.

Minor metals have importance including in thin film & related technologies. Indium for instance is similar to gallium; it comes from producing zinc ores, lead, copper, iron ores. Notably it is major in manufacturing thin films like CIGS synthesis of semiconductor copper indium gallium selenium. Indium today is coming in its main supply from ... (wait for it, wait for it ... no surprise!) China. For more on salient statistics see <http://minerals.usgs.gov/minerals/pubs/commodity/indium/mcs-2011-indiu.pdf>

Thin film solar is less efficient than crystalline PV. So with sharply dropping c-Si costs, it is important thin films retain access to cheap materials as its price-lead erodes. Thin film at say \$0.75/watt, has some clear price advantage over silicon PV, but less than a greater than \$.50+ lead of the past. Efficient, durable long-lived silicon PV near \$1.20/watt is increasingly hard on its heels, especially where room for panels is an issue.

Now Indium prices rose significantly in 2011 so it's important to reclaim it and avoid waste in production. As we've seen with Rare Earths, say lanthanoids, it is certainly possible to see strategic metal bottlenecks from China (which determines export levels) on a horizon, even with these rather pervasive materials that aren't truly rare.

Even abundant low-cost materials can present challenges as PV of all types scale to new levels. EVA (ethylene vinyl acetate) in solar panel manufacturing is also used for many other uses; if / when global economies do turn back to growth, there can be much competition for very simple material like it. So as PV makers must strive to push down *all* input costs at margins, every input material warrants attention.

Consider too a clean energy Index – including for solar – may include other relevant sub-themes not mentioned above. Besides upstream poly or downstream modules, there's also the balance of system like Inverters where pain lately has also been severe.

In sum for capturing solar an Index may have poly, modules, panels and include other key core stories including capital equipment makers selling machinery to make it all, the makers of PV encapsulants, those in competing thin film & feedstock etc. Each sub-theme may tell a different story – yet pain here lately has been near ubiquitous.

Some Positive Aspects of U.S. Solar Exports, at least for now...

Not to be solely pessimistic about all in a solar-arena we note that despite sharp drops in stocks in 2010, the U.S. was actually a *Net Exporter in total* in solar products.

Overall value of U.S.-made solar products totaled \$5.6 billion. This was mostly in poly (PV feedstock) at \$2.5 billion, and capital equipment for PV fabrication at \$1.4 billion.

Mainly the exports went to China and to Germany, as one would expect. This is alongside firm domestic PV *installation* growth here in the U.S., growing from 435 megawatts installed in 2009 – to very roughly 1,000 MW (1GW) installed in the U.S. recently.

Our *imports* of solar products in 2010 on the other hand were estimated \$3.7 billion. Much as expected was bringing in \$2.4 billion worth of finished modules. China & Mexico were 2 leading sources of modules assembled overseas. Trade figures come from a recent joint study by GTM Research and Solar Energy Industries Assn.

We thus see net exports mostly were equipment to make the cells, modules - and poly. Interestingly we're a net *Exporter* here to China, with trade *surplus* estimated at roughly 250 million. But whether the U.S. can continue to thrive in such sharp niches of the supply chain – or if lower-cost nations grab most market share there too (say in producing poly as they did in fabricating cells & modules) is yet to be seen.

Certainly in the U.S. our solar installations are by their nature downstream so local only. We can remain 'king' here. But there's so much more value across the solar chain.

For example a bearish sign for U.S. is as installations grow in c-Si PV, it may tip a balance *against* our domestic industry. U.S. still leads in certain *thin film* solar production – but no longer in the common c-Si panels now coming from China etc. Sales can yet flatten upstream for U.S. made poly, & in PV capital machinery (to rationalize supply/ demand) even as Average Sales Price (ASP) goes down <\$1.20 for the China products.

Yes we still produce lots of poly here. But with our panel manufacturers having left, it isn't surprising U.S. is now net exporting poly (not really a good thing). Moreover poly isn't used only in PV; it used to be solar used only a smallish percent of poly mainly made for semiconductors. Growth in poly going to semi manufacturers makes 'solar' numbers look better than they are (as that poly is actually used beyond solar).

How long we stay a exporter of PV machinery too is unknown. Certainly Asia does not lag in ability to replicate fabrication processes that originated here or Europe. There's unique intellectual property especially useful to *thin film* PV, and U.S. firms may there arguably be better able to maintain a present lead with IP. But the Tier 1 c-Si PV is becoming near-commodity, any small technological lead hard to keep unique.

In sum if & when capacity is rationalized, prices stabilize, demand better meets supply, arguably there *might be* potential earnings & share price growth again. Where exactly in the solar chain that will be strongest is unknowable today (thus in part an Index as being a basket of equities). So this situation is in flux. There's today strong installation growth, & also quizzically very strong declines in solar equities globally.

New Japanese Feed In Tariff (FIT); also China's FIT, for Demand-led Growth:

Yes, there could be glimmers of hope in growing solar installs. They may mean sentiment for equities need not only be entirely bearish; it doesn't only have to be ever-greater hits to ever-dwindling margins. Thus possible reason for maybe a bit of hopeful sentiment in future could be Japan's new Feed In Tariff (FIT).

Effective in some 9 months' time, mid-2012, a FIT in Japan can advance installations of renewable solar, wind, & geothermal there. After Fukushima where promises of utmost nuclear safety were clearly not met, public sentiment needs little explanation. Lacking its own domestic fossil fuels, their decision to adopt this FIT makes sense.

Goals include going from near 5GW of solar installed end of this year, to some 28GW solar by 2020. A FIT is key to stimulating installations at a 3GW/year clip (This may help too to wring excess from the PV chain, but beware any 'dumping' margins from China).

Unlike Germany or China with their wind power installs, or say Iceland geothermal power, there's today relatively little present on/offshore wind power – or geothermal systems now in Japan which operates 2 separate grids, one for East and one for West. Those Japan grids are at 50 HZ and 60 HZ, and so do not interchange power.

That renewables' deficit may change. Unlike when Ministry of Economy, Trade & Industry (METI) had a powerful voice directing development of its energy portrait to have much nuclear generation and coal for instance, the future may be different.

Natural gas may figure prominently in future in Japan. So too wind & certainly solar. Land use issues may stymie even greater growth in geothermal, which could be robust baseload power like nuclear, coal, oil, & nat gas. Yet the renewables that lag today in Japan are likely to grow; they could even surpass big rates of installation of say, Italy.

Think (again) of China. Besides its fantastic manufacturing growth in finished c-Si PV for export, there's growing demand to install domestic solar, & wind power. We note China too recently adopted a FIT although unsurprisingly it pays less (maybe 18 cents/kWh for solar, mainly for cheaper domestic PV) than the Japan solar FIT at 50 cents.

Even a temporary China FIT may catalyze growth. And in 2010 China installed near 19GW of wind turbines, about 3 times that installed in the U.S. (growth area too). China's wind stalled some in 2011 but given these 2 new FITs, growth may resume.

For instance Japan's wind FIT may amount to some 25 cents per kWh. That's notably high. Wind produces power more inexpensively than solar (it usefully works instead at day peak demand periods) and so normally wind doesn't get such steep help. Japan's wind (on & offshore) like its solar resources, are so far being little used.

A Japan solar FIT near 50 cents/kWh might ramp up its installs especially steeply.

In sum new FITs in Japan & China may help stimulate demand-led *install* growth. On the other hand sparser short-term hope lays on a horizon for *profits* growth in c-Si solar where great excess capacity still exists along with loss of pricing power.

Back to ECO Index

Back now to ECO Index® and the 3rd Quarter performance in 2011. We'll see that there were first 4 instances where ECO fell & each time hit key 'resistance' at near 65. Each was 2 weeks apart, rebounds with less and less vigor. 4th had the least force of all. Lastly after a 4th smallest bounce the Index plunged down through that resistance level.

Setting up for its 1st bottom, ECO began falling hard start of Q3. Back on July 1 to start, the tracker (PBW) began at just a bit over \$9 (or at \$9.09; ECO then at 91).

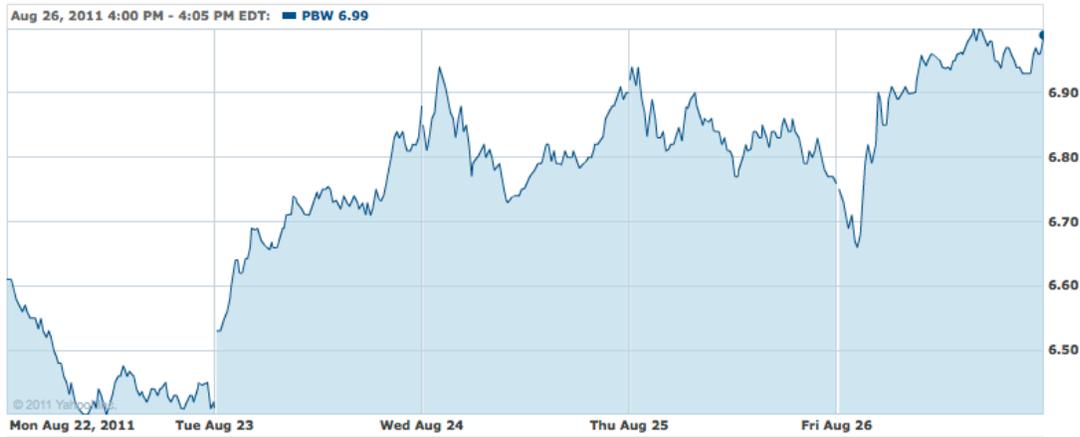
Over July it moved down, then in 1st week of August it accelerated to go strongly negative from \$8.27 on Monday Aug. 1st, down to \$6.47 only one week later, August 8th.

In this 1st Chart we can see ECO tracker (PBW, blue) move up vigorously off a 1st bottom. From Tuesday Aug. 9th at \$6.5 - the underlying ECO Index touching near 65 - the Index and independent tracker (PBW) climb over +12% in a brief 5 trading days. That +12% gain was then roughly double the increase of Nasdaq, in purple.



2 weeks later we can see ECO again drop a 2nd time to 65, below. It & tracker hit a similar \$6.5 and again bounce up a next 5 days from August 23rd. Below are two Charts for ECO, and for a tracker over August 22-26:

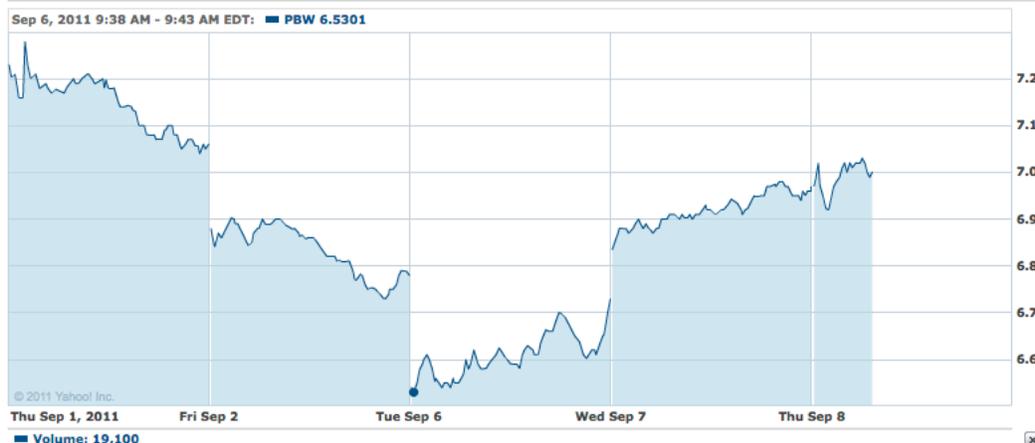




So a 2nd move above was again from 65/ \$6.5 bottom and they bounced up there (only somewhat more firmly than Nasdaq (IXIC, red)). This 2nd bounce was less than the first rebound two weeks prior; from a bottom seen below also measured from a Tuesday, the tracker moved up here +11%; Nasdaq went up some +9%.



Then again 2 weeks later so Sept. 6th ECO drops a 3rd time (here intraday) to a shallower low near 65. It's unlike previous two lows that were closing values. Now it (& tracker) bounce – yet ECO's rebound is weakest yet; they go briefly to 70 / \$7.0. That 3rd bounce is seen in a chart below and soon will peter out ready for yet another fall.



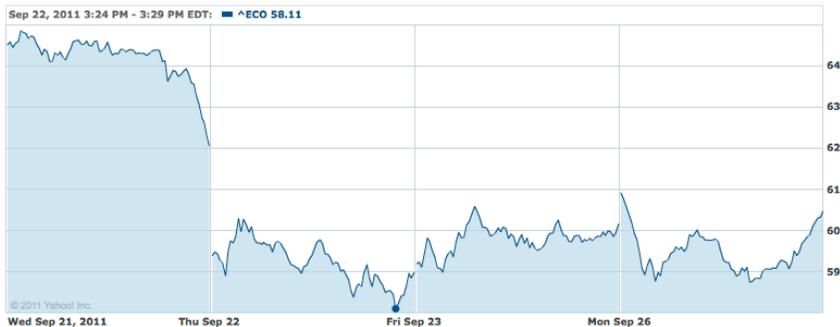
In sum 3 consecutive bottoms at roughly 65, each rebound is weaker & less persistent than a last. This seems to possibly indicate, perhaps (for chart followers) there's some 'resistance level' near 65 and yet one swiftly breaking down ...

Next at 1 week and more clearly at a 2nd week later, ECO falls intraday to 65. The 1st was Monday Sept 12th (at 64.820 to be more exact), then rebounds to just over 68 (68.356) or around +3% that next day. It now is bouncing *less* strongly than Nasdaq. Components here with firm moves upwards were similar to those that had led the prior 3 moves after hitting this point, for some consistency.

Sept. 19th is a clearer 4th bottom again near 65 intraday (here 65.588). Next day after bouncing off 65 a few times, it here falls hard and break through 65 down to 64.344 at the close. It seemed a resistance level was possibly being 'broken'.

Next several days ECO drops strongly in a manner of free fall. Once more and as had seen with its previous all-time-closing low of March 2009, 'resistance' would next come at around 59. (Similarly it would come here at about \$5.8 for Index tracker (PBW)).

Below is a chart for ECO 1st hitting 59 close Sept 23. After bouncing near 65 weeks before, it dropped quickly to 59 & paused a bit. Next to last day of Q3, on Sept. 29th the Index dropped a bit more to close at 57.73 & touched 56.76 intraday. On the very last day it ended at low for the Quarter, 55.526. This is notably a lowest intraday point for the day, for the 3rd Quarter, and it's the lowest ever live to close out a hard-moving Q3.



Below too is Index Tracker (PBW) for at-time low of \$5.78 reached Sept 22; an intraday low reached that day was \$5.70. Next to last day of Q3/Sept. 29th the tracker dropped a bit more to close at \$5.68 & touched \$5.57 intraday. Then on the very last day of Q3 it ended at its low for the Quarter, \$5.45. This is notably lowest intraday point for the day, for 3rd Quarter, and it's lowest ever, to close out a hard-moving Q3.



On a roughly similar 2 days later, here's a 4-day Chart for different themed WilderHill Progressive Energy Index (WHPRO) Sept 22-27th. This captures a then-recent low WHPRO made Sept. 22, 2011 at 184.59, a point not seen since 2009. Like ECO above, the final day of Q3 marked a 2011 low for WHPRO: 184.01. Unlike ECO that is not lowest ever (it was lower in 2009), but this does close out a hard-moving Q3.



Over a 5-day period here's WHPRO tracker (PUW) for Sept 21-27th. It's intraday floor made Sept 22 touched \$20.07, closing that day was \$20.31. There arguably has been some 'resistance' seen near \$20.0. Indeed like ECO above and by tracking WHPRO, this final day of Q3 marked a 2011 (PUW) low: \$20.00. Unlike ECO that's notably not lowest ever (it was lower in 2009) but this \$20.00 does close out a hard-moving Q3.



Here's a Chart for Global clean energy NEX tracker (PBD) that touched then-recent-low of \$8.85 on Sept. 26 - after arguably some 'resistance' at about \$8.9. Like both ECO, and WHPRO above, final day of Q3 would mark a 2011 low for both NEX tracker and underlying Index: \$8.77 for the tracker (PBD) - and at 133.69 for NEX Index.



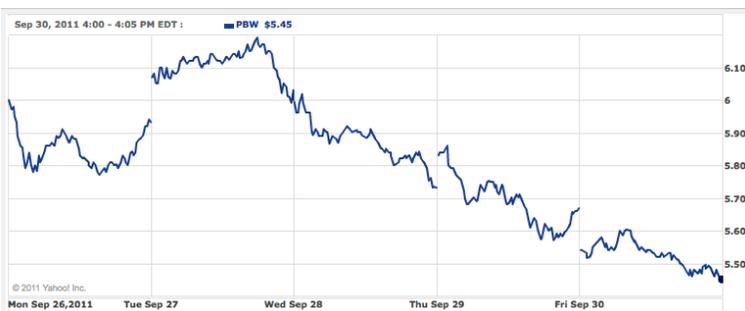
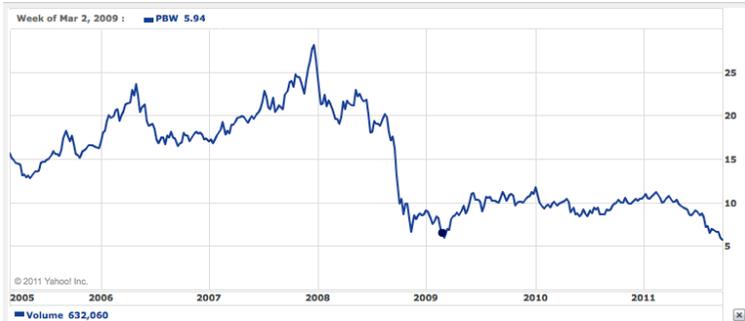
This 133.69 for NEX on the last day of Q3 may not be lowest ever for NEX - but only if one considers the NEX's backtest theoretical data (for before its launch; one can do same for ECO, launched live in 2004). But this is the lowest NEX ever reached *live*. Last day of Q3, NEX fell just below a prior bottom at 134.89 of March 2, 2009. Thus the Q3 finale nearly matched the very same live low point of 2009 – but here it went further.

Below is a Chart for NEX which is a very good proxy for Global clean energy theme, and goes back to start of 2000. One can see since hitting a bottom at 92 in late 2002, and then the 133 last seen in late 2003, the NEX has not since revisited a 133 figure.

Quite literally, as with ECO, it is now ‘uncharted territory’ for live Indexing in this space:



Below is ECO tracker since 2005 inception (note its prior low of \$5.94 in Spring 2009), and then a Chart for final 5 days of Q3 2011 ending at its new all-time low, \$5.45:



With these Indexes reaching new (to this point) all-time lows in the ending week of Q3, indeed on the very last day of that Quarter, it's safe to surmise a near 100% probability they will re-test and can overtake these levels, reaching new depths ahead.

Finally for just a tiny potential positive perspective, we noted time & again in 2011 that solar components in ECO were *not* in the lead with each bounce off of resistance points. And yet, there may come a point where these solar components do come into the lead. At least for some portion of a solar supply chain, that is not impossible to imagine.

Constant drip, drip of overcapacity and bad news only for solar margins *may* in time slow. One can easily recall years ago, when a commodity like copper was strongly out of favor; yet today it is several-fold where it was at that time. Cycles move & change.

We just briefly note then this recent September came some 7 months into a downside earnings revisions cycle – vs 9 months to trough in a prior (late 2008) downturn.

Perhaps there *may* be just a bit of sunlight for solar earnings revisions ahead, if/when the macro-environment improves; if credit flows again for better demand; there is a write-down of excess inventory (reminds one of housing oversupply); poly/wafer/module prices continue to fall but in ways that are notably a bit more stable and predictable; capacity is rationalized to match demand; and expected consolidation proceeds in an orderly fashion (sure sounds like a thorny hope), with uncertainties over subsidy cuts better resolved.

At end of Q3, consolidation of struggling solar firms is likely with price declines ahead. The risk that it may be disorderly appears fairly high. Yet this is something widely foreseen & so expected, which helps, and Tier 1 names may well benefit. In meantime it is far from completion, and so doubtless there's much solar turmoil yet in store...

Having been asked many times over the past few years how & why solar PV installations could be growing around the world so quickly – while solar stocks have yet plummeted – this information above hopefully helps to explain such curious outcome.

Nature too of this solar subtheme changed dramatically the past few years seen for instance in ECO components. From exactly zero China-based solar names within the Index (like this subsector) not so very long ago, there has been a dramatic shift.

To wit in 2010 China's manufacturers of PV grew their global market share to almost half (45%!) from 36% just one year before. U.S. PV makers by contrast dropped from 58% to just 17% the same period. Increasingly it is no longer classic c-Si flat PV, but in thin film where U.S. retains some dominance. Likewise Germany went from 18% to 8%.

For all new PV global products, China has come to dominate almost overwhelmingly.

One response has been to create joint ventures that marry U.S. or European innovation with China capabilities to force down costs of manufacture greatly. JVs however have had mixed results. Last, there's potential for terrible pollution when regulations are extremely lax; plus there's loss of U.S. jobs. In sum, it's a mixed picture.

 As noted we'll next take a look at an interesting Q3 occurrence: unusually and if viewed only from 2011 Year to Date start, there's a short YTD period when ECO 'underperformed' a narrower solar sub-theme albeit briefly. Because it's been uncommon to see, ECO more typically being so 'tough to beat' over longer periods, we'll take a look here.

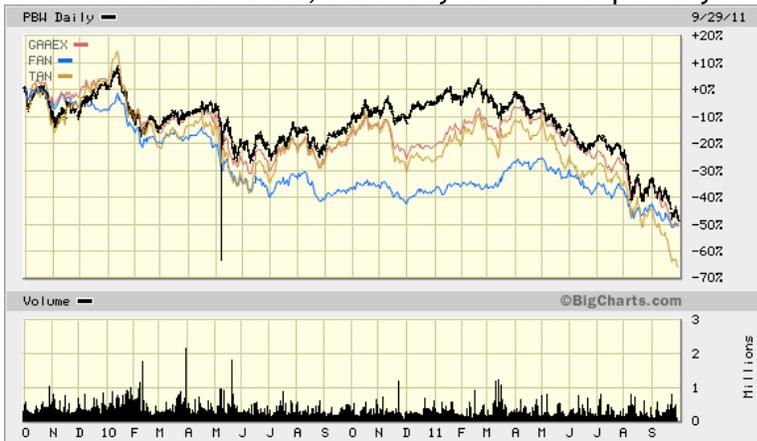
Briefly we see 3 reasons for a brief 'YTD underperformance' by broad clean energy.

One is ECO earlier moved relatively well up in latter 2010. It ended that year much higher than narrower solar (& wind) - higher relatively too than active funds. By coincidence 2011 thus started with ECO at relatively elevated point, impacting early YTD performance but to mid-year only. Over a longer YTD period any lag vs solar vanishes.

Let's take a look. Here for instance is **ECO tracker in black**, a sample **active fund in reddish brown**, and 2 trackers for **solar in gold**, and **wind in blue** a past 4 years. This fairly long period misses the run up to end 2007 (which they mostly missed) but gives a rather useful view since. See solar, wind, and their context within clean energy:



Or for better resolution, here they are for the past 2 years:



As seen above clean energy's broad story (black) has been pretty tough for a narrow solar story, or wind story alone (or even for an active fund) – to beat, even in down years. Now take a look at just clean energy (ECO) with solar & wind only, the past 6 Quarters.

Given more granularity it's worth minor note that ECO was relatively volatile upwards, at somewhat strong clip over latter 2010. Relative 'underperformance' in early 2011 (yet only seen measured from 2011 Year to Date) was arguably set up in part by ECO's 'strong' moves latter 2010 as seen here *in a red circled period*:



Here lastly is 2011 YTD to finish the picture. Wind **in blue** clearly is 'best' (less bad). **Solar in gold** initially 'leads', then falls. End of period clean energy, 'bests' solar by Fall, simply by dropping a bit less(!). This particular time frame overall reflects huge 2011 declines over green energy (no active fund depicted here for simplicity):

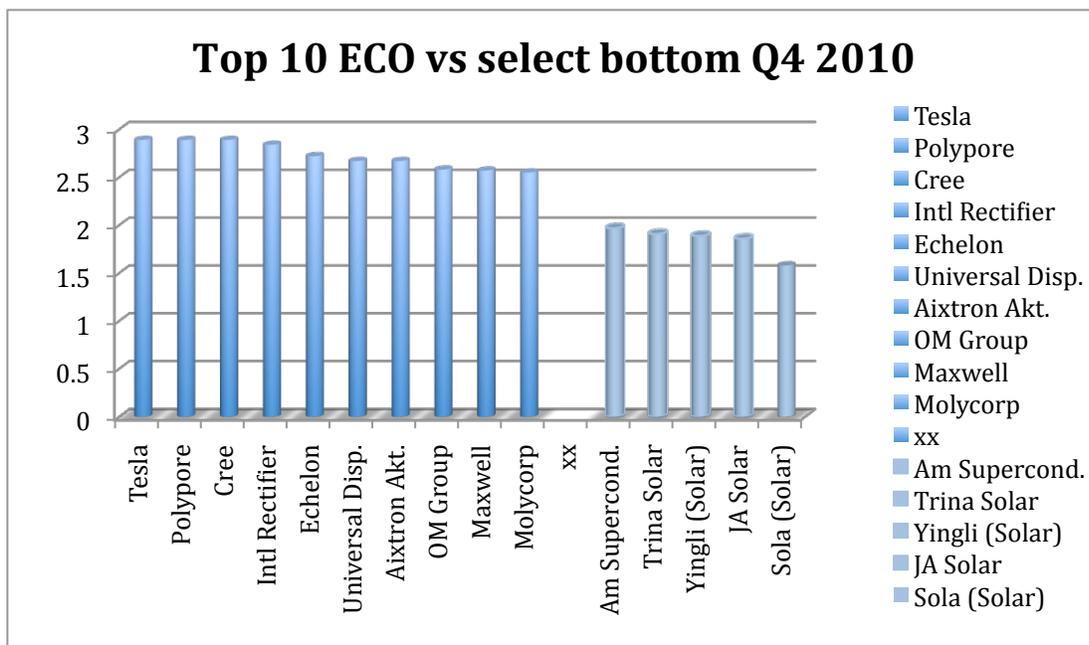


Another impactful reason arguably for a solar jump early in 2011, was a small number of stocks contributed in that Index in outsize way to performance. For a type of market cap weighted Index, 2 or 3 top components can really move returns; arguably that happened in it to provide some remarkable gains first few months of 2011 (and then losses).

There's a 3rd reason too why ECO may have relatively underperformed YTD to Fall. A few select non-solar components in ECO fell very deeply March - June. That soon reversed itself & a more typical pattern reverted, where subsectors outside solar (or wind) might rotate into leadership. But atypically that period stood out early part of 2011.

Let's take a quick look at what 1st drove ECO higher late 2010 – and led it further downwards in March-June 2011. This can be seen to some degree in component weights captured about 2 weeks before end of a relevant Quarter. They reflect 10 weeks worth of moves from co-equal start weights within each Sector of ECO every Quarter.

We'd seen in graphs above that areas of ECO outside of mainly solar plus wind, did (much) 'better' late 2010. Indeed that turns out to be a case when one takes a look below.



At top in Q4 2010 above is a diverse assortment of pure-plays in other areas of clean energy. They include an electric carmaker; maker of advanced Li battery membranes; a maker of LEDs; maker of energy-saving chips; maker of networks for energy savings; maker of organic LEDs; maker of deposition tools for LEDs & efficient displays; producer of cobalt and precursors in Li batteries; maker of ultracapacitors; and producer of rare earths as strategic elements in EV electric motors, wind turbines, lighting etc.

The above mainly represent 3 (of 6) ECO sectors, for Energy Conversion (its names were co-weighted @ 2.17% each to start Q4); Energy Storage (co-weighted @ 2.12%); and Energy Delivery & Conservation (co-weighted @ 2.37% each).

Observe here too the Renewable Energy Harvesting Sector is largely absent from top ECO performers in late 4th Quarter 2010. That is where solar & wind mainly reside.

Interestingly look too at Bottom; skipping weightings under 1.0% (those are *banded stocks <\$50M in market cap and so with minor weighting and these are omitted below), we can there see 5 of 10, or fully half, are either solar or wind. Below is a table for all names that had begun 4th Quarter fully-weighted (being >\$200M), here near the end of Q4:

ECO Index; Past Q4 2010 Components & Weights on 12/15/2010:

| Company Name | Symbol | % Weight |
|----------------------------------|---------------|-----------------|
| Tesla Motors | TSLA | 2.89% |
| Polypore International | PPO | 2.89% |
| Cree | CREE | 2.89% |
| International Rectifier | IRF | 2.84% |
| Echelon | ELON | 2.72% |
| Universal Display | PANL | 2.67% |
| Aixtron Aktiengesellschaft | AIXG | 2.67% |
| Om Group | OMG | 2.58% |
| Maxwell Technologies | MXWL | 2.57% |
| Molycorp | MCP | 2.55% |
| Applied Materials | AMAT | 2.54% |
| Satcon Technology | SATC | 2.45% |
| Ener1 Inc | HEV | 2.34% |
| GT Solar International | SOLR | 2.32% |
| Quanta Services | PWR | 2.31% |
| Zoltek Cos | ZOLT | 2.26% |
| Rubicon Technology | RBCN | 2.24% |
| Sunpower | SPWRA | 2.20% |
| Advanced Battery Tech | ABAT | 2.20% |
| STR Holdings | STRI | 2.19% |
| Ormat Technologies | ORA | 2.17% |
| Sociedad Quimica y Minera SA | SQM | 2.16% |
| Canadian Solar | CSIQ | 2.15% |
| Energy Conversion Devices | ENER | 2.13% |
| MEMC Electronic Materials | WFR | 2.10% |
| Itron | ITRI | 2.09% |
| Amerigon | ARGN | 2.06% |
| First Solar | FSLR | 2.04% |
| Suntech Power Holdings Ltd | STP | 2.04% |
| Cosan Ltd | CZZ | 2.02% |
| Idacorp | IDA | 1.98% |
| CPFL Energia S.A. | CPL | 1.97% |
| American Superconductor | AMSC | 1.97% |
| Air Products & Chem | APD | 1.96% |
| Calpine | CPN | 1.94% |
| A123 Systems | AONE | 1.91% |
| Trina Solar Ltd | TSL | 1.91% |
| Yingli Green Energy Holding Ltd | YGE | 1.89% |
| Green Plains Renewable Energy | GPRE | 1.89% |
| JA Solar Holdings Ltd | JASO | 1.86% |
| <i>(banded stocks not shown)</i> | | |

Two observations may be made from the above. One is that Top 10 had neither the pure play Solar, nor Wind names present. Latter 2011 did not favor those themes.

Secondly, what was favored (electric vehicles, efficiency, advanced batteries & materials etc) are themes included in broad clean energy – but not a single narrow theme.

In sum for anyone interested in potential electric vehicles (EVs) and powering these either from solar PV power, or 'regular Utility power' from the wall, we post this recent PV+EV Report for some data: http://www.wildershires.com/pdf/solarsense_v1.2.pdf

Next let's consider what may have contributed too to Q1/Q2 declines March-June 2011. Falls in ECO relative to purer solar & wind themes, although only to mid-2011 YTD, were notable. A glance at ECO's Bottom 10 components late Q2 2011 is pretty telling.

As seen June 16, 2011 the 5 bottom performers in ECO over April-June in descending order of from Worst/'& absolutely terrible' to 'Not-Quite so Worst' were:

| | | |
|-------------------------|------|-------|
| AMERICAN SUPERCONDUCTOR | AMSC | 0.81% |
| ADVANCED BATTERY | ABAT | 0.81% |
| ENER1 | HEV | 1.12% |
| CHINA MING YANG WIND | MY | 1.30% |
| SATCON INTL. | SATC | 1.34% |

Individual stories reflect what happened to the bottom 5 – each unique to a component, so not pervasive throughout their subsector. First, with equally forceful falls to 0.81%, American Superconductor (AMSC) started Q2 @2.00% in the Energy Conversion Sector, like a battery firm that had started Q2 @2.00% in the Energy Storage Sector.

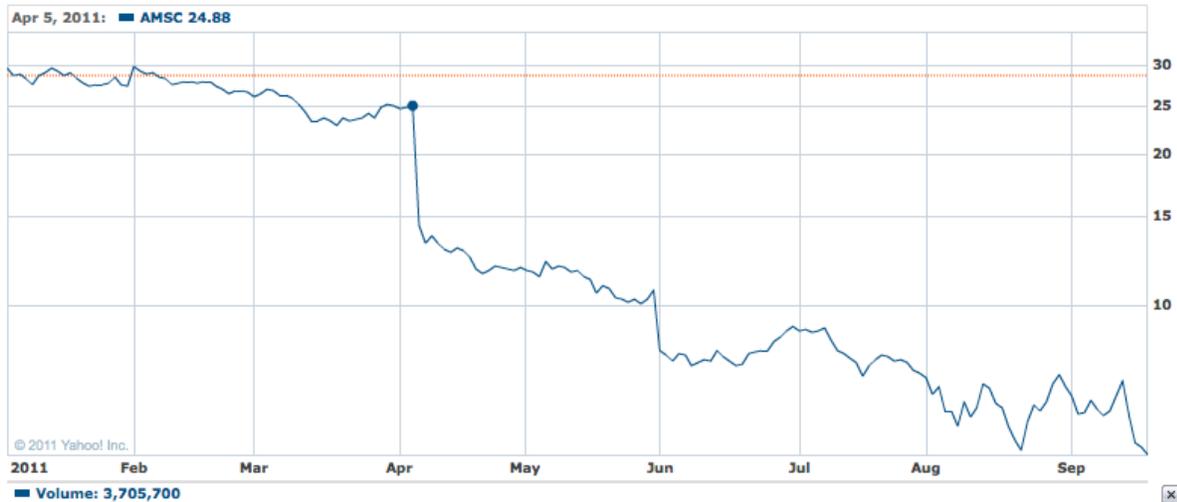
In a nutshell, AMSC had been a prominent high-flyer in wind. In ECO Index from 2003 when it was just at \$5.0, to late 2009 when it reached around \$40/share, it was noticeable. Over 7 years its shares had grown some 8-fold, for robust upside volatility.

AMSC over those years moved increasingly to mainly wind power, more specifically into power converters fundamental in converting variable turbine outputs, adjusting for pitch and yaw, tremendous frequency variability etc. Its unique software (and hardware) became crucial intellectual property, key to preserving value.

Their great problem and case of company-specific risk, was they grew over years yet relied greatly upon a single (and now big) wind turbine builder customer based in China. It became 70-75% of their revenues for any particular Quarter. That China wind company had grown up strongly alongside AMSC and became a global leader in wind.

So when that key customer suddenly started to reject ordered components from AMSC claiming issues of quality control etc, and began to source from a subsidiary (of itself), valuations of AMSC dropped precipitously over April through June of 2011.

From \$25/share in early April their valuations dropped to around \$8 in mid-June as it all began to unfold. Here below is a Chart for this 2011 period when the April-June fall is seen, with a few months past that showing the bleeding did not end there for it:



That fall by component AMSC was one aspect to ECO's decline over this April-June period relative to a Solar / Wind story - but this drop April-June was a larger story and unusually big as noted. It was perhaps due a due to a confluence of factors, including a few other diverse aspects in ECO also unusually falling very hard the same time.

So another example of great fall in April-June was a small, obtuse, highly speculative China based pure play in batteries & electric bikes. At second-worst fall of Q2, it sits outside solar & wind, so would not be included in sub-themed Index there for only either. (It ended Q2 below threshold size and so no longer eligible for ECO in Q3).

It began Q2/April near \$2 - and fell dramatically 2nd Quarter ending < than ½ the value where it began the period. In its case there was not over-reliance on a single customer – rather likely action by 'shorts' that had greatest impact. Lack of transparency made its matters worse. Valuations are difficult for such an obtuse speculative China symbol.

Third down the list for Q2 bottoms was a pure-play within the volatile advanced battery/ emerging electric vehicles aspect of clean energy space. It began 2nd Quarter near \$3.0, amid thin hopes a partner's rehashed car platform previously used in (failed) attempts to launch an EV could this time be maybe made sellable with its batteries.

This small firm notably staked a great deal of its future on success – or failure – of a tiny Norwegian carmaker. When that Norway manufacturer in time failed, it simply decimated the symbol. A bit like in solar as discussed above, there is great over-capacity present among extant and potential battery makers for EVs today, all crushing the crucial margins of potential sellers of batteries for future EVs.

So a select few battery makers *might* do very well, while most will fail. In short there's huge risk, & possibility for great fall (or some gain) in new EV batteries ahead. As this 3rd component was just a bit >\$200M at time of rebalance to start Q2, it began co-equal weighted within its sector and ended Q2 @just above \$1, down some 2/3, below.



4th down the list of bottom Q2 performers, this wind component pure play began Q2 near \$10: it would reach down to near \$5 by mid-June in latter Q2. Why? (We include a Chart of performance into Q3 below, showing that its fall too didn't end at Q2 finish).

In Q1 things had certainly looked rather brighter for it – a-recently listed China-based wind manufacturer IPO. Briefly total revenues had grown 39% from Q1 2010 to \$213M. Net income was up nearly 60% that period; gross margin was up at 26% vs. 21%, and this equity was trading roughly 5.7x its earnings estimated for 2011. But Q1 marked its high-water point and after that matters became more challenging.

Since then increasing competition meant it's been very tough to grow revenues. And like in solar, average sales price of units are declining, so much that low-cost manufacturers including those based in India (unlike with solar PV) have tiny margins. P/E's in this space have also dropped very considerably, especially for China based symbols.

By summer it missed earnings estimates/EPS by a rather large amount, coming in at \$217M in revenues. Though with rather significant market share at near 9% and no tiny player in the wind story, it was gaining only some orders and that alone was not enough.

Wind turbine makers face tough price competition, margins dropping despite new orders. So demand is there (although patchy such as in offshore wind) but share price growth has been elusive for several names here. That said a far better relative story is seen in a wider sub-sector Wind Index. Here, below, that 1 component suffers April-June (then longer into 2011 as declines continued) in blue. It along with AMSC, described above (green) -- and a much 'better' wind sub-sector in red, are seen into later Q3:



A conclusion for 2011 YTD is solar was a huge laggard. ECO for broad clean energy performed better by end of Q3 – while dragged ironically by of its two wind components. Better still has been a whole wind theme subsector over 2011 YTD, although it is only catching up now to where ECO is when seen over a two year time frame.

Out of curiosity let’s take a look at what ‘well-performing’ wind names were in mid-2011 as seen in international WilderHill New Energy Global Innovation Index (NEX): it has many wind components (mainly based outside the U.S.). Looking at its strong Wind Sector(RWD) performers Q2 when wind did well (especially vs solar) - yet AMSC & MY did poorly, we see wind names in the NEX top ½ in middle part of June included:

| NEX Wind components, in top ½ on 6/16 | Country | Currency | Weight | Sector |
|--|----------------|-----------------|---------------|---------------|
| EDF Energies Nouvelles SA | FR | EUR | 1.63 % | RWD |
| Iberdrola Renovables S.A. | ES | EUR | 1.53 % | RWD |
| China Longyuan Power Group Corp. Ltd. | HK | HKD | 1.46 % | RWD |
| Acciona S.A. | ES | EUR | 1.42 % | RWD |
| China Suntien Green Energy Corp Ltd | HK | HKD | 1.39 % | RWD |
| EDP Renovaveis S/A | PT | EUR | 1.37 % | RWD |
| China Datang Corp Renewable Power | HK | HKD | 1.37 % | RWD |
| Gamesa Corporacion Tecnologica S.A. | ES | EUR | 1.32 % | RWD |
| China WindPower Group Ltd. | HK | HKD | 1.29 % | RWD |

So these above offset, the poorer Wind Sector names at the bottom that Quarter.

This concludes our review of ECO in Q3 2011.

ECO Additions & Deletions for Start of Q4

There were 4 Additions to, and 3 Deletions from ECO for start of Q4 2011. Additions were: Daqo New Energy (DQ) as a polysilicon producer now expanding downstream to modules; Hanwha SolarOne (HSOL) in solar PV that is integrated and can make poly to modules; Kaydon (KDN) in wind power making bearings & velocity controls for wind turbines; and PowerSecure (POWR) in smart grid, demand response, distributed generation, LEDs.

Deletions from the Index for start of Q4 were BWEN, ENER, HEV.

Summary

3rd Quarter 2011 opened with the Clean Energy Index® (ECO) at 91.38, and closed at 55.48, for an exceptional fall in Q3 of -39.3%(!). For a rather longer view of 2011 Year To Date, clean energy/ECO has so far gone down even more YTD, declining by -47.5%.

Or go further back. After sharp gains over 2004-2007 and rising to near 300 late in 2007, there’s been nearly 4 years of declines. ECO is down now by a startling four/fifth’s. Volatile Q3 2011 has brought ECO Index® nearby and overtaken prior all-time low of 59.

Solar subsector performance had notable impact on ECO a past few years, especially 2011. In a world where 11 China-based companies can produce near 17GW of modules - the rest of the planet maybe 30GW by year end – seeing ‘only’ 20GW of global demand in 2011 has helped lead to Average Selling Prices (ASPs) falling to around \$1.20/watt. Overcapacity is an extremely vexing issue, and so hard to correct.

At such low prices & margins nobody in PV supply & manufacturing chain much profits. Looking ahead it seems as if a trough Quarter gets pushed back weekly, and so solar equities continuously fall here hard. Not just China based Tier 1 names, but globally.

World demand may contract somewhat too given slackened European demand. Yet new growth can yet come from China & Japan, as well as U.S., India, Australia and elsewhere. It could be nearer 30GW demand ahead (on cash freeing up & being optimistic!).

Still even if China’s module capacity moves up to 20GW, unless module prices find a floor say near \$1.05/watt in 2012, profits may be elusive, consolidations likely, and trough pushed back yet again. Yet the names with strongest balance sheets, cash on hand, & lowest costs of manufacture *might* yet appreciate *after* the battles.

There were 4 Additions to, and 3 Deletions from ECO for start of Q4 2011. Additions were Daqo New Energy (DQ), and Hanwha SolarOne (HSOL) in solar; Kaydon (KDN) in wind; and PowerSecure (POWR) in smart grid, demand response, distributed generation, & LEDs. Deletions from the Index to start Q4 were BWEN, ENER, HEV.

As always we welcome your thoughts and suggestions.

Sincerely,



Dr. Rob Wilder
rwilder@wildershires.com

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Appendix I: ECO Index (via tracker PBW), Descending Weights & Components in Q3 on 09/15/2011, about 2 weeks before rebalance to start Q4 2011:

| <u>Component Name</u> | <u>Symbol</u> | <u>Weighting</u> |
|---------------------------------|---------------|------------------|
| Universal Display Corp. | PANL | 0.042322861 |
| Maxwell Technologies Inc. | MXWL | 0.031194738 |
| ITC Holdings Corp. | ITC | 0.027857145 |
| Polypore International Inc. | PPO | 0.026685202 |
| Cree Inc. | CREE | 0.025572882 |
| A123 Systems Inc. | AONE | 0.025163967 |
| Calpine Corp. | CPN | 0.02509985 |
| Quanta Services Inc. | PWR | 0.025035086 |
| IDACORP Inc. | IDA | 0.024802294 |
| Cosan Ltd. CI A | CZZ | 0.02446302 |
| Molycorp Inc. | MCP | 0.02406527 |
| Fuel Systems Solutions Inc. | FSYS | 0.024035292 |
| Tesla Motors Inc. | TSLA | 0.023783352 |
| Sociedad Quimica y Minera Chile | SQM | 0.023619184 |
| CPFL Energia S.A. ADS | CPL | 0.022655241 |
| Power-One Inc. | PWER | 0.022600968 |
| Air Products & Chemicals Inc. | APD | 0.022546407 |
| MEMC Electronic Materials Inc. | WFR | 0.022426725 |
| International Rectifier Corp. | IRF | 0.022012009 |
| Ameresco Inc. CI A | AMRC | 0.02177632 |
| Itron Inc. | ITRI | 0.021348341 |
| Echelon Corp. | ELON | 0.021311215 |
| Amerigon Inc. | ARGN | 0.02085002 |
| Zoltek Cos. | ZOLT | 0.020615165 |
| OM Group Inc. | OMG | 0.020587092 |
| First Solar Inc. | FSLR | 0.0198727 |
| Rubicon Technology Inc. | RBCN | 0.019739764 |
| Rare Element Resources Ltd. | REE | 0.019588575 |
| STR Holdings Inc. | STRI | 0.01907452 |
| Ormat Technologies Inc. | ORA | 0.018784147 |
| American Superconductor Corp. | AMSC | 0.018595783 |
| Satcon Technology Corp. | SATC | 0.017972739 |
| SunPower Corp. CI A | SPWRA | 0.017878079 |
| EMCORE Corp. | EMKR | 0.017505548 |
| GT Advanced Technologies Inc. | GTAT | 0.017233643 |
| Amyris Inc. | AMRS | 0.016754449 |
| Solazyme Inc. | SZYM | 0.016285315 |
| ReneSola Ltd. ADS | SOL | 0.015720703 |
| Gevo Inc. | GEVO | 0.015618743 |
| China Ming Yang Wind Power Ltd. | MY | 0.014648484 |
| Aixtron SE ADS | AIXG | 0.013394752 |
| Trina Solar Ltd. ADS | TSL | 0.012788426 |
| Suntech Power Holdings Co. Ltd. | STP | 0.01273338 |

| | | |
|--|-------------|--------------------|
| Yingli Green Energy Holding Co. | YGE | 0.012396695 |
| Canadian Solar Inc. | CSIQ | 0.011423759 |
| JA Solar Holdings Co. Ltd. ADS | JASO | 0.010991376 |
| Ener1 Inc. | HEV | 0.007002733 |
| Ballard Power Systems Inc. | BLDP | 0.005987536 |
| FuelCell Energy Inc. | FCEL | 0.005847906 |
| UQM Technologies Inc. | UQM | 0.005526396 |
| Comverge Inc. | COMV | 0.005459215 |
| Energy Conversion Devices Inc. | ENER | 0.004510155 |
| Active Power Inc. | ACPW | 0.004239268 |
| Lime Energy Co. | LIME | 0.004134458 |
| Amtech Systems Inc. | ASYS | 0.003478714 |
| Broadwind Energy Inc. | BWEN | 0.002382396 |

INDEX (ECO) SECTOR & STOCK WEIGHTS FOR START OF Q4 2011. 57 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 - 25% sector weight (11 stocks @2.13 each; +3 banded)

**Canadian Solar*, CSIQ. Solar, vertically integrated solar PV manufacturer, China.

China Ming Yang Wind, MY. Wind, large turbine manufacturer is a pure play.

**Daqo New Energy*, DQ. Polysilicon, expanding downstream to making modules.

**Emcore*, EMKR. CPV, in JV for concentrating rooftop PV; efficient 4 junction PV.

First Solar, FSLR. Thin film, CdTe solar panels reducing silicon need and cost.

Hanwha SolarOne, HSOL. Solar, fully integrated from poly through modules.

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

Kaydon, KDN. Wind, Manufactures friction & velocity controls in wind turbines.

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

SunPower, SPWRA. Solar, efficient PV panels have all-rear-contact cells.

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

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

Yingli Green Energy, YGE. Solar, is vertically integrated PV manufacturer.

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

Power Delivery & Conservation - 29% sector weight (12 stocks @2.20% each; +5 banded)

Aixtron Aktiengesellschaft, AIXG. Deposition tools, efficient (O)LEDs, displays.

Ameresco, AMRC. Energy saving performance contracts, also in renewables.

**Amtech Systems*, ASYS. Solar, produces equipment to manufacture solar cells.

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

Cree, CREE. LEDs, manufacturer in power-saving lumens, efficient lighting.

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

GT Advanced, GTAT. Solar, LEDS, production lines for poly & ingot; LED sapphire.

ITC Holdings, ITC. Power Delivery, grid transmission integrates wind, renewables.

Itron, ITRI. Monitoring, advanced energy metering, measurement, management.

**Lime Energy*, LIME. Efficiency, energy-savings expertise in demand reduction.

MEMC, WFR. Producer of polysilicon used in many crystalline c-Si solar PV cells.
**PowerSecure*, POWR. Smart grid, demand response, distributed generation; LEDs.
Quanta Services, PWR. Infrastructure, modernizing grid and power transmission.
**ReneSola*, SOL. Wafers, for silicon PV, mono and multicrystalline, China-based.
Rubicon, RBCN. Substrates, are used in the production of LEDs for lighting.
STR Holdings, STRI. Encapsulants, broad technology for range of PV panels.
Universal Display, PANL. Organic light emitting diodes, OLED panel displays.

Energy Storage - 11% sector weight (5 stocks @2.10% each; +1 banded stock)

**Active Power*, ACPW. Flywheels, uninterruptible power conditioning; non-chemical.
A123 Systems, AONE. Batteries, nanophosphate for EVs, the grid, portable power.
Maxwell, MXWL. Ultracapacitors, alternative supplement for batteries, hybrids, UPS.
OM Group, OMG. Cobalt and other precursors, producer for Li-Ion batteries, FCs.
Polypore Intl., PPO. Separators, membranes used in Li-ion, Pb-acid battery cells.
Sociedad de Chile, SQM. Lithium, major Li supplier for batteries; also STEG storage.

Energy Conversion - 20% sector weight (8 stocks @2.25% each; +4 banded stocks)

American Superconductor, AMSC. Wind power converters; superconducting HTS.
Amerigon, ARGN. Thermoelectrics, waste heat to power energy conversion.
**Ballard Power*, BLDP. Mid-size fuel cell R&D, FCs potential in transportation.
**FuelCell Energy*, FCEL. Large fuel cells, stationary high-temp flex-fueled MCFCs.
Fuel Systems Solutions, FSYS. Gaseous fuels, ICEs in cleaner-fueled vehicles.
International Rectifier, IRF. Energy-saving, power conversion and conditioning.
Molycorp, MCP. Rare Earths, strategic elements in NdFeB magnets, wind power.
Power-One, PWER. Power conditioning, inverters & converters for renewables.
Rare Element Resources, REE. Rare Earths, holdings for strategic lanthanides.
**Satcon*, SATC. Inverters, DC/AC conversion in large utility-scale renewables.
Tesla Motors, TSLA. Electric vehicles, new pure-play in EVs, power systems.
**UQM Technologies*, UQM. Motors, control systems for EVs & hybrid vehicles.

Cleaner Fuels - 9% sector weight (4 stocks @2.12% each; +1 banded stock)

Air Products & Chemicals, APD. Hydrogen, is a supplier of industrial gases.
Amyris, AMRS. Biotech, speculative R&D on drop-in renewable diesel, jet fuels.
Cosan, CZZ. Biofuels, Brazil-based using sugarcane feedstock, ethanol exporter.
**Gevo*, GEVO. Biotech, speculative R&D, drop-in isobutanol, renewable biofuels.
Solazyme, SZYM. Biofuels, microalgae grown light-free, drop-in diesel substitutes.

Greener Utilities - 6% sector weight (3 stocks @2.00% each)

Calpine, CPN. Geothermal, major North American producer, low-carbon assets.
CPFL Energia S.A, CPL. Hydroelectric, Brazil Utility has larger, smaller hydro.
Idacorp, IDA. Hydroelectric, Utility has sizeable hydroelectric, some small hydro.

Appendix III: WHPRO tracker (PUW), Descending Component weights in Q3 2011 on 09/15/2011; about 2 weeks before rebalance to start Q4.

| Name | Symbol | Weighting |
|--------------------------------|---------------|------------------|
| Westport Innovations Inc. | WPRT | 0.031872531 |
| Range Resources Corp. | RRC | 0.030931005 |
| Chesapeake Energy Corp. | CHK | 0.028832386 |
| Elster Group SE ADS | ELT | 0.026360742 |
| Andersons Inc. | ANDE | 0.024927046 |
| Southwestern Energy Co. | SWN | 0.024237772 |
| Clean Energy Fuels Corp. | CLNE | 0.023629394 |
| Chart Industries Inc. | GTLS | 0.023515864 |
| Hexcel Corp. | HXL | 0.022939743 |
| Companhia Energetica de Minas | CIG | 0.022677918 |
| Sasol Ltd. ADS | SSL | 0.022572471 |
| Golar LNG Ltd. | GLNG | 0.022527117 |
| Regal-Beloit Corp. | RBC | 0.022387467 |
| Energizer Holdings Inc. | ENR | 0.022371457 |
| Cameco Corp. | CCJ | 0.022329733 |
| Woodward Inc. | WWD | 0.022286252 |
| A.O. Smith Corp. | AOS | 0.021967282 |
| Chicago Bridge & Iron Co. N.V. | CBI | 0.021904185 |
| Enersis S.A. ADS | ENI | 0.021699413 |
| Global Power Equipment Group | GLPW | 0.021500242 |
| Denison Mines Corp. | DNN | 0.021233554 |
| Covanta Holding Corp. | CVA | 0.021223454 |
| Methanex Corp. | MEOH | 0.020822867 |
| Rockwood Holdings Inc. | ROC | 0.020760764 |
| ESCO Technologies Inc. | ESE | 0.020712383 |
| Emerson Electric Co. | EMR | 0.020570444 |
| LSB Industries Inc. | LXU | 0.020520121 |
| Centrais Eletricas Brasileiras | EBR | 0.019815993 |
| Corning Inc. | GLW | 0.019573594 |
| Eaton Corp. | ETN | 0.01882851 |
| Koninklijke Philips NV | PHG | 0.018485869 |
| GrafTech International Ltd. | GTI | 0.018435829 |
| Cooper Industries PLC (CI A) | CBE | 0.018214824 |
| Tenneco Inc. | TEN | 0.018132132 |
| EnerNOC Inc. | ENOC | 0.017717047 |
| McDermott International Inc. | MDR | 0.017540758 |
| Foster Wheeler AG | FWLT | 0.017411799 |
| General Cable Corp. | BGC | 0.017011717 |
| Johnson Controls Inc. | JCI | 0.016963166 |
| Tata Motors Ltd. ADS | TTM | 0.016423204 |
| Siemens AG ADS | SI | 0.01629453 |
| Owens Corning | OC | 0.016205128 |
| EnerSys Inc. | ENS | 0.015750683 |
| Exide Technologies | XIDE | 0.015127077 |
| Veeco Instruments Inc. | VECO | 0.014977314 |

| | | |
|--------------------------------|-------------|--------------------|
| Avalon Rare Metals Inc. | AVL | 0.014781562 |
| EnergySolutions Inc. | ES | 0.014162309 |
| Altra Holdings Inc. | AIMC | 0.013129994 |
| PMFG Inc. | PMFG | 0.004973154 |
| Apogee Enterprises Inc. | APOG | 0.004405357 |
| SemiLEDS Corp. | LEDS | 0.003974227 |
| USEC Inc. | USU | 0.003738344 |
| -- | -- | 0.000612271 |

Appendix IV: WilderHill Progressive Energy Index (WHPRO) at the Rebalance Sectors & Stock Weightings: WilderHill Progressive Energy Index (WHPRO) for start of Q4 2011. 53 stocks.

Each stock freely moves according to its share price after the rebalance;
 *Banded stocks are those under \$400 million in size and weighted at 0.5%.

Alternative Fuel - 16% Sector Weight (7 stocks @2.21% each +1 banded stock)

The Andersons, ANDE. Ethanol producer, corn-based; rail group in fuel transport.
Cameco, CCJ. Uranium fuel, one of largest producers; also does fuel processing.
Chesapeake Energy, CHK. Natural gas, one of larger U.S. independent producers.
Denison Mines, DNN. Uranium fuel, in/out of U.S; decommissions, recycling wastes.
Methanex, MEOH. Methanol, liquid fuel can be derived from fossil fuels or organics.
Range Resources, RRC. Natural gas, produces in Appalachian & Gulf Coast regions.
Southwestern Energy, SWN. Natural gas, U.S. producer, also midstream services.
 **USEC*, USU. Uranium fuel, converts ex-Soviet warheads to U.S. nuclear feedstock.

New Energy Activity - 26% Sector weight (11 stocks @2.31% each +1 banded)

Cooper Industries plc, CBE. Energy efficiency, diverse in new LEDs, grid innovation.
Eaton, ETN. Hybrids, better electric and fluid power in truck & auto applications.
Foster Wheeler, FWLT. Infrastructure, engineering services in WtE, LNG, CCS.
 **Global Power Equipment*, GLPW. Designs, engineering for gas, hydro, nuclear.
GrafTech, GTI. Graphite, advanced electrodes for power generation, fuel cells.
Hexcel, HXL. Lighter composites, advanced structural reinforcement materials.
Johnson Controls, JCI. Building control, also advanced hybrid vehicle systems.
McDermott, MDR. Infrastructure, reduces coal emissions, constructs WtE facilities.
Owens Corning, OC. Materials lightening, building insulation composite materials.
Rockwood Holdings, ROC. Lithium battery recycling, lithium & cobalt supply.
Siemens AG, SI. Conglomerate, is diversified across energy innovation globally.
Veeco Instruments, VECO. Design, manufactures equipment for LED production.

Better Efficiency - 22% Sector Weight (9 stocks @2.27% each +3 banded stocks)

A.O. Smith, AOS. Energy efficiency innovations for water heating & monitoring.
 **Apogee*, APOG. Advanced glass, for better efficiency, green building designs.
Elster Group se, ELT. Metering innovations, power and grid 2-way communications.
Emerson Electric, EMR. Broad work in energy efficiency, storage, lately biofuels.
 **EnerNOC*, ENOC. Demand response energy management, smarter grid efficiency.

Esco Technologies, ESE. Power grid, advances 2-way metering & communications.
General Cable, BGC. Power grid, high voltage transmission cable and wire products
Koninklijke Philips Electronics NV, PHG. Efficient LEDs, advanced industrial lighting.
LSB Industries, LXU. Greater energy efficiency in building end-use, heating, cooling.
Regal Beloit, RBC. Energy efficient motors, in commercial, industrial, homes etc.
**SemiLEDs Corp.* LEDS. Efficient LED light, Taiwan maker of high brightness chips.
Woodward, WWD. Energy controllers, optimization, industrial turbines in generation.

Conversion & Storage - 19% Sector weight (8 stocks @2.18% each +3 banded stocks)

**Altra Holdings*, AIMC. Mechanical power transmission, electro-mechan conversion.
Chart Industries, GTLS. Natural gas, LNG; liquefied gas storage/transport, efficiency.
Chicago Bridge & Iron, CBI. Nat. gas; also better containment for next-gen nuclear.
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 new battery and charger technologies.
**Energy Solutions*, ES. Spent nuclear fuel storage, fuel recycling and management.
EnerSys, ENS. Battery maker, for telecommunications, utilities, motive power.
**Exide Technologies*, XIDE. Better lead-acid batteries for motive, traction uses.
Golar LNG, GLNG. LNG, major independent carrier, gas transport, regasification.
Westport Innovations, WPRT. Enables vehicles' use of natural gas, gaseous fuels.

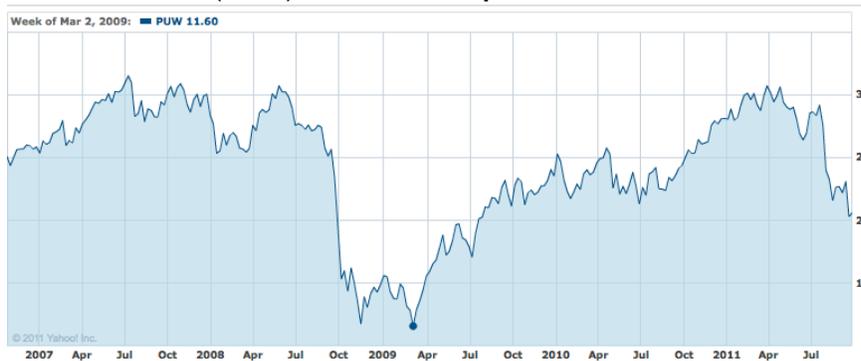
Emission Reduction - 10% Sector Weight (4 stocks @2.25% each +3 banded stocks)

**Avalon Rare Metals*, AVL. Strategic elements, for emissions reduction, efficiency.
Corning, GLW. Diverse activity includes emissions reduction, filters, and catalysts.
**Peerless*, PMFG. Pollution reduction, effluent separation & filtration systems.
**Quest Rare Minerals*, QRM. Identification & discovery of HREO sites, Canada.
Sasol Ltd, SSL. Syngas to synthetic fuel; potential CO2 capture/sequestration (CCS).
Tata Motors, TTM. Smaller & 'nano' vehicles, India-based with worldwide sales.
Tenneco, TEN. Automotive end-of-pipe emissions controls, catalytic converters.

Utility - 7% Sector weight (3 stocks @2.33% each)

Companhia Energetica de Minas Cemig, CIG. Brazilian Utility, large hydroelectric.
Centrais Electricas Brasileiras, EBR. Brazilian Utility, large hydro, also nuclear.
Enersis, S.A., ENI. Chile, Argentina, Peru. Utility, lower-CO2 large hydroelectric.

WHPRO tracker (PUW) since its inception:



Appendix V: Rebalance for the HAUL Index[®] for the start of Q4 2011

Wilder NASDAQ Global Energy Efficient Transport Index (HAUL). 40 stocks.

Alternative Vehicles. 10 stocks. 25% Sector; stocks @2.50% each.

| | |
|-----------|---|
| AONE UQ | <i>AI23 Systems (U.S.)</i> . Lithium ion batteries for EVs, using nanophosphate. |
| PIA MI | <i>Piaggio & C. SpA (Italy)</i> . Scooters include Vespa, developing hybrids. |
| SAFT FP | <i>Saft Groupe SA (France)</i> . Advanced batteries in electric cars, subways. |
| 1211 HK | <i>BYD (China)</i> . Early production EV batteries, also builds PHEVs, EVs. |
| 489 HK | <i>Dongfeng Motor (China)</i> . Chinese partner for electric vehicles (EVs). |
| 6674 JT | <i>GS Yuasa (Japan)</i> . Li-ion batteries, in EV production partnerships. |
| 9921 TT | <i>Giant (Taiwan)</i> . Bike manufacturer also makes hybrid electric bikes. |
| 051910 KS | <i>LG Chem (S. Korea)</i> . Larger-format Li-ion cells in production EVs. |
| 006400 KS | <i>Samsung SDI (S. Korea)</i> . Li-ion cell maker in Korean JV for autos. |
| 2201 TT | <i>Yulon Motor (Taiwan)</i> . Partnering in development of electric vehicles. |

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

| | |
|----------|--|
| STS IM | <i>Ansaldo STS SpA (Italy)</i> . New information technology for subways, rail. |
| ALO FP | <i>Alstom SA (France)</i> . More efficient rail infrastructure, high speed TGV. |
| BBD/B CN | <i>Bombardier (Canada)</i> . Builds efficient locomotives, also in light rail. |
| CNI UN | <i>Canadian National Railway (Canada)</i> . Rail as 3x more efficient than trucks. |
| CSX US | <i>CSX Corp (U.S.)</i> . Invests \$1 billion in better Tier II locomotives; SmartWay. |
| LEY FP | <i>Faiveley SA (France)</i> . Manufactures equipment systems for trains, trams. |
| NSC UN | <i>Norfolk Southern (U.S.)</i> . Software optimizes rail movement; SmartWay partner. |
| RAIL UQ | <i>FreightCar America (U.S.)</i> . Railcar maker, lightweight & aluminum body. |
| UNP UN | <i>Union Pacific (U.S.)</i> . 3,000 fuel-efficient locomotives add to fleet; SmartWay. |
| WAB UN | <i>Wabtec (U.S.)</i> . Makes, services control systems in locomotives, subway cars. |

Sea, Land, Air & Intermodal. 10 stocks. 25% weight; @2.50% each.

| | |
|---------|---|
| BOL FP | <i>Bolloré (France)</i> . Transport & freight forwarding, stevedoring, ports etc. |
| CLNE UQ | <i>Clean Energy Fuels (U.S.)</i> . Enables natural gas CNG in fleet buses, trucks. |
| FGP LN | <i>FirstGroup plc (U.K.)</i> . Public transportation, in buses, rail and logistics. |
| BOKA NA | <i>Koninklijke Boskalis NV (Netherlands)</i> . Improving ports for global shipping. |
| MAERSKB | <i>Maersk A/S (Denmark)</i> . Shipping, globally efficient transport of goods. |
| OSG UN | <i>Overseas Shipholding (U.S.)</i> . Bulk shipping, VLCCs, diversified LNG, CNG. |
| SGC LN | <i>Stagecoach Group plc (Scotland)</i> . Trains, buses, trams, in U.S. and U.K. |
| WBC UN | <i>Wabco (Belgium)</i> . Control systems, better electronic automation in vehicles. |
| 316 HK | <i>Orient Overseas Intl. (Hong Kong)</i> . Container shipping and logistics. |
| 7251 JT | <i>Keihin Corp (Japan)</i> . Control systems for Honda's hybrids, light scooters. |

Transport Innovation. 10 stocks. 25% Sector weight; @2.50% each.

| | |
|---------|---|
| BG/LN | <i>BG Group (U.K.)</i> . Natural gas, CNG used as transportation fuels. |
| FSYS UQ | <i>Fuel System Solutions (U.S.)</i> . Gaseous fuels, enables natural gas in engines. |
| KNIN VX | <i>Kuehne + Nagel AG (Switzerland)</i> . Globally integrated logistics solutions. |
| MXWL UQ | <i>Maxwell (U.S.)</i> . Ultracapacitors, can very rapidly store/release power. |
| PWTN SW | <i>Panalpina Welttransport AG (Switzerland)</i> . Freight forwarding & logistics. |
| RS UN | <i>Reliance Steel & Aluminum (U.S.)</i> . Aluminum, used to lighten vehicles. |
| SGL GY | <i>SGL Carbon AG (Germany)</i> . Advanced carbon composites, lightening. |
| SQM UN | <i>Sociedad de Chile (Chile)</i> . Lithium, is needed in electric & hybrid batteries. |
| TSLA UQ | <i>Tesla Motors (U.S.)</i> . Early mass producer of EVs & pure-play, global leader. |
| WPRT UQ | <i>Westport Innovations (Canada)</i> . New technology advancing gaseous fuels. |

Appendix VI: WilderHill New Energy Global Innovation Index (NEX) during Q3 2011. 99 stocks. These data below are from late Q3 2011 at the close on 9/13/2011 about 2 weeks before the Rebalance of NEX to start Q4 2011:

See also for more NEX data: http://www.nex-index.com/Constituents_And_Weightings.php

NEX component weights as of close of trading on: Tue Sep 13, 2011; 99 stocks

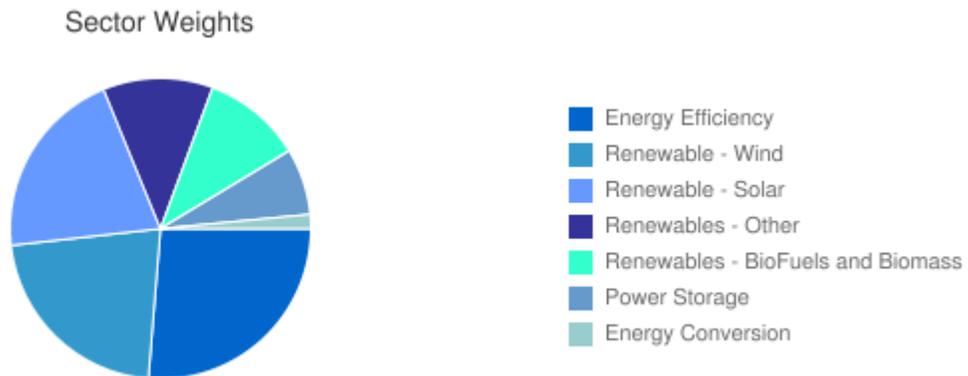
Sort Order: Weight(Descending)

| Name | Country | Currency | Weight | Sector |
|--|----------------|-----------------|---------------|---------------|
| Universal Display Corp. | US | USD | 2.83 % | EEF |
| Brookfield Renewable Power Fund | CA | CAD | 2.04 % | ROH |
| EDP Renovaveis S/A | PT | EUR | 2.04 % | RWD |
| Acciona S.A. | ES | EUR | 1.89 % | RWD |
| Contact Energy Ltd. | NZ | NZD | 1.87 % | ROH |
| China Longyuan Power Group Corp. Ltd. | HK | HKD | 1.85 % | RWD |
| China Suntien Green Energy Corp Ltd | HK | HKD | 1.85 % | RWD |
| Huaneng Renewables Corp Ltd | HK | HKD | 1.82 % | RWD |
| Energy Development Corp. | PH | PHP | 1.78 % | ROH |
| Vestas Wind Systems A/S | DK | DKK | 1.78 % | RWD |
| Elster Group SE | US | USD | 1.74 % | EEF |
| China Datang Corp Renewable Power Co Ltd | HK | HKD | 1.66 % | RWD |
| LSB Industries Inc | US | USD | 1.61 % | ROH |
| MEMC Electronic Materials Inc. | US | USD | 1.54 % | RSR |
| Cree Inc. | US | USD | 1.54 % | EEF |
| Enel Green Power SpA | IT | EUR | 1.51 % | ROH |
| Nibe Industrier AB | SE | SEK | 1.51 % | EEF |
| Power Integrations Inc. | US | USD | 1.49 % | EEF |
| Renewable Energy Corp. ASA | NO | NOK | 1.48 % | RSR |
| SMA Solar Technology AG | DE | EUR | 1.47 % | RSR |
| Covanta Holding Corp. | US | USD | 1.46 % | RBB |
| A.O. Smith Corp. | US | USD | 1.43 % | EEF |
| Cosan S/A Industria e Comercio | BR | BRL | 1.43 % | RBB |
| First Solar Inc. | US | USD | 1.43 % | RSR |
| Tesla Motors Inc. | US | USD | 1.42 % | EEF |
| Power-One Inc. | US | USD | 1.41 % | EEF |
| Gamesa Corporacion Tecnologica S.A. | ES | EUR | 1.40 % | RWD |
| Kingspan Group PLC | IE | EUR | 1.40 % | EEF |
| SunPower Corp. Cl A | US | USD | 1.35 % | RSR |
| GCL-Poly Energy Holdings Ltd. | HK | HKD | 1.35 % | RSR |
| Meidensha Corp. | JP | JPY | 1.33 % | EEF |
| Ormat Technologies Inc. | US | USD | 1.33 % | ROH |
| GT Advanced Technologies Inc | US | USD | 1.32 % | RSR |
| Novozymes A/S Series B | DK | DKK | 1.32 % | RBB |
| China Ming Yang Wind Power Group Ltd | US | USD | 1.32 % | RWD |
| Meyer Burger Technology AG | CH | CHF | 1.31 % | RSR |
| International Rectifier Corp. | US | USD | 1.31 % | EEF |
| Fortum Oyj | FI | EUR | 1.30 % | RBB |

| | | | | |
|---|----|-----|--------|-----|
| Itron Inc. | US | USD | 1.27 % | EEF |
| Seoul Semiconductor Co Ltd | KR | KRW | 1.27 % | EEF |
| centrotherm photovoltaics AG | DE | EUR | 1.27 % | RSR |
| Verbund AG | AT | EUR | 1.26 % | ROH |
| Abengoa S.A. | ES | EUR | 1.24 % | RBB |
| A123 Systems Inc. | US | USD | 1.20 % | PWS |
| Johnson Controls Inc. | US | USD | 1.19 % | EEF |
| China High Speed Transmission Equipment | HK | HKD | 1.18 % | RWD |
| Polypore International Inc. | US | USD | 1.17 % | PWS |
| Saft Groupe S.A. | FR | EUR | 1.14 % | PWS |
| Molycorp Inc | US | USD | 1.13 % | PWS |
| Rockwool International A/S Series B | DK | DKK | 1.12 % | EEF |
| Xinjiang Goldwind Science & Technology | HK | HKD | 1.07 % | RWD |
| Trony Solar Holdings Co Ltd | HK | HKD | 1.04 % | RSR |
| Hansen Transmissions International N.V. | GB | GBp | 1.00 % | RWD |
| Suntech Power Holdings Co. Ltd. ADS | US | USD | 0.99 % | RSR |
| GS Yuasa Corp. | JP | JPY | 0.96 % | PWS |
| Amyris Inc | US | USD | 0.95 % | RBB |
| EPISTAR Corp. | TW | TWD | 0.94 % | EEF |
| Trina Solar Ltd. ADS | US | USD | 0.92 % | RSR |
| Yingli Green Energy Holding Co. Ltd. ADS | US | USD | 0.91 % | RSR |
| Solazyme Inc | US | USD | 0.89 % | RBB |
| JA Solar Holdings Co. Ltd. ADS | US | USD | 0.88 % | RSR |
| SolarWorld AG | DE | EUR | 0.83 % | RSR |
| Fuel Systems Solutions Inc. | US | USD | 0.82 % | ECV |
| BYD Co. Ltd. | HK | HKD | 0.74 % | PWS |
| FuelCell Energy Inc. | US | USD | 0.70 % | ECV |
| Taewoong Co. Ltd. | KR | KRW | 0.56 % | RWD |
| Roth & Rau AG | DE | EUR | 0.54 % | RSR |
| Zoltek Cos. | US | USD | 0.52 % | RWD |
| American Superconductor Corp. | US | USD | 0.52 % | RWD |
| Zhejiang Yankon Group Co. Ltd. A | CN | CNY | 0.51 % | EEF |
| Gurit Holding AG | CH | CHF | 0.46 % | RWD |
| Sao Martinho S/A Ord | BR | BRL | 0.43 % | RBB |
| Ayen Enerji AS | TR | TRY | 0.42 % | ROH |
| Nordex AG | DE | EUR | 0.41 % | RWD |
| Neo-Neon Holdings Ltd. | HK | HKD | 0.40 % | EEF |
| Echelon Corp. | US | USD | 0.40 % | EEF |
| Praj Industries Ltd. | IN | INR | 0.40 % | RBB |
| Aerovironment Inc | US | USD | 0.39 % | EEF |
| Maxwell Technologies Inc. | US | USD | 0.39 % | PWS |
| Ameresco Inc | US | USD | 0.38 % | EEF |
| Brasil Ecodiesel Industria e Comercio de Bioc | BR | BRL | 0.38 % | RBB |
| China WindPower Group Ltd. | HK | HKD | 0.38 % | RWD |
| STR Holdings Inc | US | USD | 0.37 % | RSR |
| Rubicon Technology Inc. | US | USD | 0.34 % | EEF |
| Wasion Group Holdings Ltd. | HK | HKD | 0.33 % | EEF |
| Takuma Co. Ltd. | JP | JPY | 0.33 % | RBB |
| EnerNOC Inc. | US | USD | 0.33 % | EEF |

| | | | | |
|---|----|-----|--------|-----|
| Sechilienne-Sidec | FR | EUR | 0.33 % | RBB |
| Tanaka Chemical Corp. | JP | JPY | 0.29 % | PWS |
| Phoenix Solar AG | DE | EUR | 0.29 % | RSR |
| NPC Inc. | JP | JPY | 0.28 % | RSR |
| Neo Solar Power Corp. | TW | TWD | 0.27 % | RSR |
| Apollo Solar Energy Technology Holdings Ltd | HK | HKD | 0.27 % | RSR |
| Gevo Inc | US | USD | 0.26 % | RBB |
| Q-Cells AG | DE | EUR | 0.25 % | RSR |
| Broadwind Energy Inc. | US | USD | 0.25 % | RWD |
| PV Crystalox Solar PLC | GB | GBp | 0.15 % | RSR |
| Ener1 Inc. | US | USD | 0.10 % | PWS |
| Solar Millennium AG | DE | EUR | 0.08 % | RSR |

| Index Sector Information for Tue Sep 13, 2011 | | |
|---|---------------------------------|---------|
| Key | Sector | Weight |
| EEF | Energy Efficiency | 26.29 % |
| RWD | Renewable - Wind | 21.95 % |
| RSR | Renewable - Solar | 20.59 % |
| ROH | Renewables - Other | 11.82 % |
| RBB | Renewables - BioFuels / Biomass | 10.71 % |
| PWS | Power Storage | 7.13 % |
| ECV | Energy Conversion | 1.52 % |



| Index Region-of-Listing Information for Tue Sep 13, 2011 | |
|--|---------|
| Region | Weight |
| The Americas | 46.10 % |
| Europe, Middle East, Africa | 29.17 % |
| Asia & Oceania | 24.73 % |

Region Weights



Appendix VII: WilderHill New Energy Global Innovation Index (NEX) to start Q4 2011.

For more on daily data for the dynamic NEX Index components and weights, see, http://www.nex-index.com/Constituents_And_Weightings.php
http://www.nex-index.com/about_nex.php

NEX Index Components to start Q4 2011. 95 stocks.

The WilderHill New Energy Global Innovation Index (NEX) rebalances quarterly on the last trading day of March, June, September and December.

Calculation Method Modified Equal Weighted
 Component Change - Rebalance

| <u>Company Name</u> | <u>Country</u> | <u>Currency</u> | <u>Weight</u> | <u>Sector</u> |
|--------------------------------|----------------|-----------------|---------------|---------------|
| First Solar Inc | UNITED STATES | USD | 1.87% | RSR |
| GCL-Poly Energy Holdings Ltd | HONG KONG | HKD | 1.87% | RSR |
| SMA Solar Technology AG | GERMANY | EUR | 1.87% | RSR |
| MEMC Electronic Materials Inc | UNITED STATES | USD | 1.87% | RSR |
| Meyer Burger Technology AG | SWITZERLAND | CHF | 1.87% | RSR |
| Renewable Energy Corp ASA | NORWAY | NOK | 1.87% | RSR |
| GT Advanced Technologies Inc | UNITED STATES | USD | 1.87% | RSR |
| SunPower Corp | UNITED STATES | USD | 1.87% | RSR |
| Solarworld AG | GERMANY | EUR | 1.87% | RSR |
| Suntech Power Holdings Co Ltd | UNITED STATES | USD | 1.87% | RSR |
| Yingli Green Energy Holding Co | UNITED STATES | USD | 1.87% | RSR |
| China Longyuan Power Group | HONG KONG | HKD | 1.62% | RWD |
| Acciona SA | SPAIN | EUR | 1.62% | RWD |
| EDP Renovaveis SA | PORTUGAL | EUR | 1.62% | RWD |
| Xinjiang Goldwind Science & Te | HONG KONG | HKD | 1.62% | RWD |
| Vestas Wind Systems A/S | DENMARK | DKK | 1.62% | RWD |
| Huaneng Renewables Corp Ltd | HONG KONG | HKD | 1.62% | RWD |
| China Datang Corp Renewable Po | HONG KONG | HKD | 1.62% | RWD |
| Gamesa Corp Tecnologica SA | SPAIN | EUR | 1.62% | RWD |
| China High Speed Transmission | HONG KONG | HKD | 1.62% | RWD |
| China Suntien Green Energy Cor | HONG KONG | HKD | 1.62% | RWD |
| Enel Green Power SpA | ITALY | EUR | 1.54% | ROH |
| Verbund AG | AUSTRIA | EUR | 1.54% | ROH |

| | | | | |
|--------------------------------|---------------|-----|-------|-----|
| Contact Energy Ltd | NEW ZEALAND | NZD | 1.54% | ROH |
| Brookfield Renewable Power Fun | CANADA | CAD | 1.54% | ROH |
| Energy Development Corp | PHILIPPINES | PHP | 1.54% | ROH |
| LSB Industries Inc | UNITED STATES | USD | 1.54% | ROH |
| Ormat Technologies Inc | UNITED STATES | USD | 1.54% | ROH |
| Johnson Controls Inc | UNITED STATES | USD | 1.37% | EEF |
| Cree Inc | UNITED STATES | USD | 1.37% | EEF |
| Tesla Motors Inc | UNITED STATES | USD | 1.37% | EEF |
| Universal Display Corp | UNITED STATES | USD | 1.37% | EEF |
| Elster Group SE | UNITED STATES | USD | 1.37% | EEF |
| Rockwool International A/S | DENMARK | DKK | 1.37% | EEF |
| Nibe Industrier AB | SWEDEN | SEK | 1.37% | EEF |
| AO Smith Corp | UNITED STATES | USD | 1.37% | EEF |
| Epistar Corp | TAIWAN | TWD | 1.37% | EEF |
| International Rectifier Corp | UNITED STATES | USD | 1.37% | EEF |
| Itron Inc | UNITED STATES | USD | 1.37% | EEF |
| Kingspan Group PLC | IRELAND | EUR | 1.37% | EEF |
| Seoul Semiconductor Co Ltd | SOUTH KOREA | KRW | 1.37% | EEF |
| Power Integrations Inc | UNITED STATES | USD | 1.37% | EEF |
| Meidensha Corp | JAPAN | JPY | 1.37% | EEF |
| Power-One Inc | UNITED STATES | USD | 1.37% | EEF |
| KiOR Inc | UNITED STATES | USD | 1.16% | RBB |
| Brasil Ecodiesel Industria e C | BRAZIL | BRL | 1.16% | RBB |
| Fortum OYJ | FINLAND | EUR | 1.16% | RBB |
| Novozymes A/S | DENMARK | DKK | 1.16% | RBB |
| Cosan SA Industria e Comercio | BRAZIL | BRL | 1.16% | RBB |
| Abengoa SA | SPAIN | EUR | 1.16% | RBB |
| Covanta Holding Corp | UNITED STATES | USD | 1.16% | RBB |
| Amyris Inc | UNITED STATES | USD | 1.16% | RBB |
| Solazyme Inc | UNITED STATES | USD | 1.16% | RBB |
| Byd Co Ltd | HONG KONG | HKD | 0.90% | ENS |
| Polypore International Inc | UNITED STATES | USD | 0.90% | ENS |
| GS Yuasa Corp | JAPAN | JPY | 0.90% | ENS |
| Saft Groupe SA | FRANCE | EUR | 0.90% | ENS |
| Molycorp Inc | UNITED STATES | USD | 0.72% | ECV |
| Woongjin Energy Co Ltd | SOUTH KOREA | KRW | 0.53% | RSR |
| Trina Solar Ltd | UNITED STATES | USD | 0.53% | RSR |
| Centrotherm Photovoltaics AG | GERMANY | EUR | 0.53% | RSR |
| Trony Solar Holdings Co Ltd | HONG KONG | HKD | 0.53% | RSR |
| JA Solar Holdings Co Ltd | UNITED STATES | USD | 0.53% | RSR |
| Roth & Rau AG | GERMANY | EUR | 0.53% | RSR |
| Neo Solar Power Corp | TAIWAN | TWD | 0.53% | RSR |
| STR Holdings Inc | UNITED STATES | USD | 0.53% | RSR |
| Apollo Solar Energy Technology | HONG KONG | HKD | 0.53% | RSR |
| NPC Inc/Japan | JAPAN | JPY | 0.53% | RSR |
| Q-Cells SE | GERMANY | EUR | 0.53% | RSR |
| China Ming Yang Wind Power Gro | UNITED STATES | USD | 0.46% | RWD |
| Taewoong Co Ltd | SOUTH KOREA | KRW | 0.46% | RWD |
| Nordex SE | GERMANY | EUR | 0.46% | RWD |
| China WindPower Group Ltd | HONG KONG | HKD | 0.46% | RWD |
| Zoltek Cos Inc | UNITED STATES | USD | 0.46% | RWD |
| American Superconductor Corp | UNITED STATES | USD | 0.46% | RWD |
| Gurit Holding AG | SWITZERLAND | CHF | 0.46% | RWD |
| Innergex Renewable Energy Inc | CHINA | CNY | 0.44% | ROH |
| Ayen Enerji AS | TURKEY | TRY | 0.44% | ROH |
| Zhejiang Yankon Group Co Ltd | CHINA | CNY | 0.39% | EEF |
| Aerovironment Inc | UNITED STATES | USD | 0.39% | EEF |
| Ameresco Inc | UNITED STATES | USD | 0.39% | EEF |
| Echelon Corp | UNITED STATES | USD | 0.39% | EEF |
| Wasion Group Holdings Ltd | HONG KONG | HKD | 0.39% | EEF |
| EnerNOC Inc | UNITED STATES | USD | 0.39% | EEF |
| Rubicon Technology Inc | UNITED STATES | USD | 0.39% | EEF |
| Neo-Neon Holdings Ltd | HONG KONG | HKD | 0.39% | EEF |
| Sao Martinho SA | BRAZIL | BRL | 0.33% | RBB |
| Sechilienne-Sidec | FRANCE | EUR | 0.33% | RBB |
| Takuma Co Ltd | JAPAN | JPY | 0.33% | RBB |

| | | | | |
|----------------------------|---------------|-----|-------|-----|
| Praj Industries Ltd | INDIA | INR | 0.33% | RBB |
| Gevo Inc | UNITED STATES | USD | 0.33% | RBB |
| A123 Systems Inc | UNITED STATES | USD | 0.26% | ENS |
| Maxwell Technologies Inc | UNITED STATES | USD | 0.26% | ENS |
| Fuel Systems Solutions Inc | UNITED STATES | USD | 0.21% | ECV |
| FuelCell Energy Inc | UNITED STATES | USD | 0.21% | ECV |

3 Additions

| Name | Country | Ticker | WilderHill New Energy |
|-------------------------------|---------------|--------|-----------------------|
| KIOR Inc | UNITED STATES | KIOR | RBB |
| Innergex Renewable Energy Inc | CHINA | INE | ROH |
| Woongjin Energy Co Ltd | SOUTH KOREA | 103130 | RSR |

7 Removals

| Name | Country | Ticker | WilderHill New Energy |
|------------------------------------|----------------|--------|-----------------------|
| Tanaka Chemical Corp | JAPAN | 4080 | PWS |
| Phoenix Solar AG | GERMANY | PS4 | RSR |
| PV Crystalox Solar PLC | UNITED KINGDOM | PVCS | RSR |
| Solar Millennium AG | GERMANY | S2M | RSR |
| Broadwind Energy Inc | UNITED STATES | BWEN | RWD |
| Ener1 Inc | UNITED STATES | HEV | PWS |
| Hansen Transmissions International | UNITED KINGDOM | HSN | RWD |

Sector Weights for Start of Q4

ECV = 1.14% (Energy Conversion)

EEF = 25.06% (Energy Efficiency)

ENS = 4.12% (Energy Storage)

RBB = 12.13% (Renewables- Biofuels & Biomass)

ROH = 11.63% (Renewables – Other)

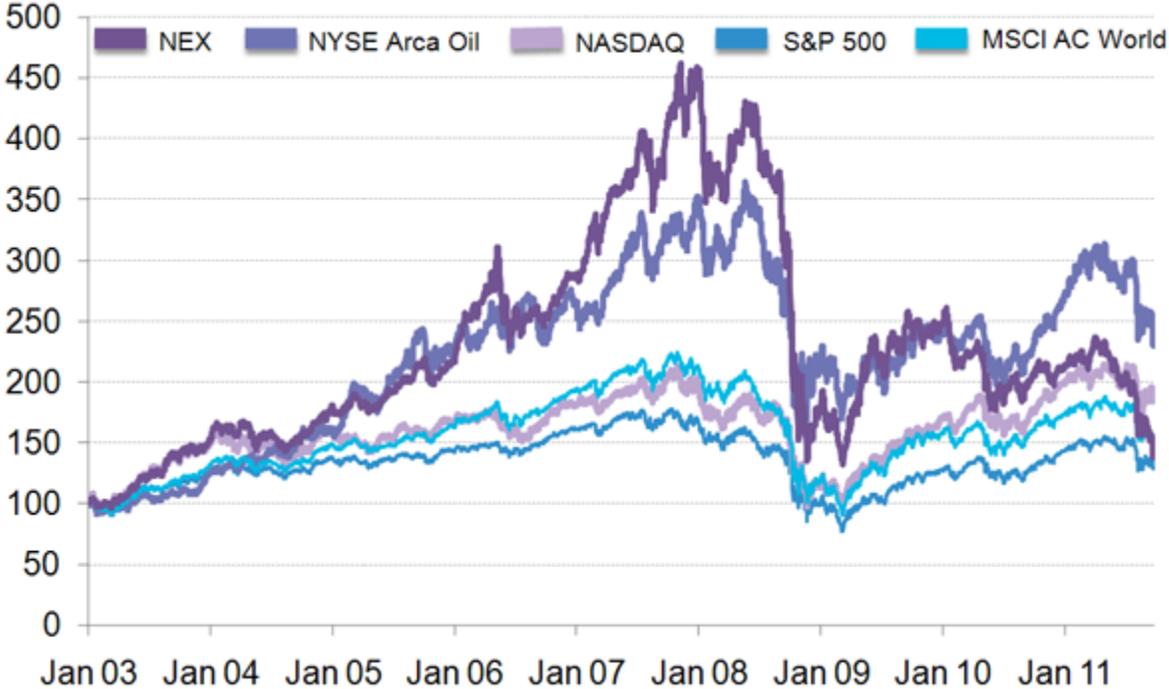
RSR = 26.48% (Renewable – Solar)

RWD = 19.45% (Renewable – Wind)

Here are links to quotes to the NEX Index available on the web:

| NEX Quotes & Data | Ticker | Bigcharts | Bloomberg | Marketwatch | Yahoo |
|------------------------|------------------------|--------------------------|----------------------------|------------------------|-------------------------|
| USD Price Index | NEX | 51599W10 | NEX:IND | NEX | ^NEX |
| EUR Price Index | NEXEU | 26499Z42 | NEXEU:IND | NEXEU | ^NEXEU |
| GBP Price Index | EXBP | 26499Z40 | NEXBP:IND | NEXBP | ^NEXBP |
| JPY Price Index | NEXJY | 26499Z38 | NEXJY:IND | NEXJY | ^NEXJY |
| USD Total Return Index | NEXUST | 26499Z43 | NEXUST:IND | NEXUST | ^NEXUST |
| EUR Total Return Index | NEXEUT | 26499Z41 | NEXEUT:IND | NEXEUT | ^NEXEUT |
| GBP Total Return Index | NEXBPT | 26499Z39 | NEXBPT:IND | NEXBPT | ^NEXBPT |
| JPY Total Return Index | NEXJYT | 26499Z37 | NEXJYT:IND | NEXJYT | ^NEXJYT |

January 2003 – Sept. 2011: backtest for NEX Index, NYSE Oil, NASDAQ, S&P 500, MSCI:



(The NEX Index only, is a unique partnership between Bloomberg New Energy Finance based in London, and Josh Landess of First Energy Research LLC based in U.S., and Dr. Rob Wilder of WilderHill Indexes in the U.S.; the NEX is also addressed in prior reports).
