WilderShares, LLC

Q2 2009 Quarterly Report: WilderHill Clean Energy Index®, June 30, 2009

Second Quarter 2009 opened with the Clean Energy Index® (ECO) at 77.46 and closed at 101.13, for a positive return of +30.5%. This most recent Q2 *might* be regarded, in the future, as being an inflection point. After sliding dramatically from 2008 to early 2009, ECO lately is showing both down & now upward activity. Whether it drops again near a recent floor of 60 in Q1 — or instead has more typical mixed movement or consolidation in Q3 (or even shows further strong increases ahead) — shall be of some interest.

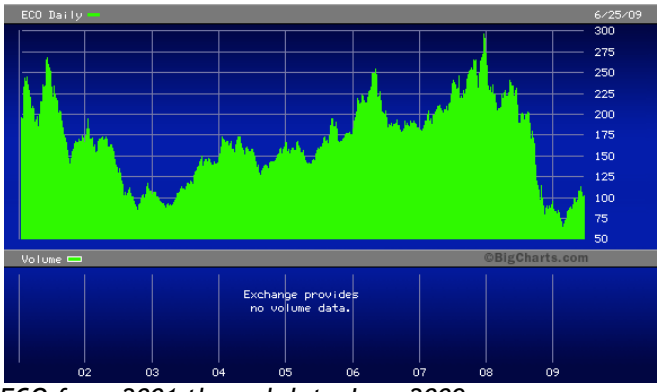
First looking back over all 2008-Q1 2009 or for a remarkable five Quarters, this clean energy sector was in a dramatic downturn that abated only at its fifth Quarter, in March 2009. That the clean energy sector & so ECO Index has many purer plays that normally can move in ways unlike Dow Jones, S&P or Nasdaq Indexes, made little difference.

Across diverse assets classes, the story was pretty much the same. There was big declines followed by sharp drops, interrupted only by brief bear-market rallies/traps without conviction. Certainly Q3 2008-March 2009, there was marked uniformity of direction.

That long stretch though changed rather dramatically in March. Looking back at Q2, the ECO Index has lately shown ability to go both directions with 'normal' (great) volatility. For instance after a run-up to May 7, and again to early June the Index followed each with unsurprising declines. Broken down for granularity, in April ECO rose from 77 to 90 or up +16%, in May it ended at 100 for another +11%, and for June, ECO has closed essentially flat at 101 for no change. After no positive Quarter since 2007, this is a bit notable.

In practical matters, a convergence of solar/electric cars is addressed too in this Report. That synergy isn't a decade away: as we'll observe it's already here. We look in applied ways at getting 72 Miles Per Solar day (72 MPS) from a solar/electric car. The combination can bring an abundance of clean power to buildings, torque behind the wheel & fun.

To sum up the markets, *losses* dominated clean energy from 2008 to Q1 2009: *if* some upward moves in Q2 repeat during Q3, then March 9 *may* be a notable inflection point. Every picture tells a story, as does this chart for ECO from 2001 to late June of 2009:



ECO from 2001 through late June 2009.

Looking back to key recent Lows: ECO Briefly Reaches Under 60 in March 2009

Whether $ billions of new federal ARRA dollars can push aspects of clean energy sector in any bullish ways ahead, is utterly unknowable today. But what one can do is take a look back at recent known Index lows, briefly reprising a Q1 2009 ECO Index Report. There we saw some bottoming in Q1 with late moves up especially on March 10th, March 23rd & March 26th. *Possible* consolidation thus maybe began after ECO briefly touched down under 60; since then, it has moved higher to 100 and a bit more during Q2 2009.

Over all Q1/Q2, a slowing *in the rates of decline* in 1H 2009 raises two related points: 1) one is distance stocks are still at in June from their 52 week Highs remains great; and 2) secondly, when there's occasional bullish moves up, those can be of some size. Data below recall depths equities reached in Q1 compared to a year prior. Despite moves up since, they're still today for a start of Q3 2009, well down from 52-week Highs:

Q1: March 10 & March 26 data: Name	March 10 Closing price	% 1-day Change March 10	% 1-day Change *March 26*	(March 10) % From Yr Low	(March 10) % From Yr High
WilderHill Clean Energy Index	64.57	9.9%	*11.3%*	--	--
PowerShares WilderHill Clean Energy Port.	6.34	8.0%	*10.9%*	*9%*	*73.54%*
WilderHill Progressive Energy Index	110.60	6.9%	*3.3%*	--	--
PowerShares WilderHill Progressive Energy	12.16	6.6%	*3.3%*	*10%*	*61.13%*
Wilder NASDAQ Global Energy Efficient Transport Index	127.40	4.9%	*4.4%*	--	--
PowerShares Global Energy Efficient Transport,	13.96	1.3%	--	*1%*	*50.11%*
WilderHill New Energy Global Innovation Ind.	139.91	0.1%	*0.4%*	--	*67.93%*
PowerShares Global Clean Energy Portfolio	9.30	6.5%	*6.0%*	*9%*	*69.62%*
NASDAQ Composite	1,358	7.0%	*3.8%*	--	*46.76%*
Dow Jones Industrial Average	6,926	5.8%	*2.2%*	--	*47.49%*
Advanced Battery Technologies,	1.73	3.8%	*5.5%*	*47%*	*72.97%*
Applied Materials, Inc.	9.22	7.4%	*5.7%*	*18%*	*57.61%*
American Superconductor	15.29	15.1%	*11.0%*	*86%*	*67.83%*
AIR PRODUCTS CHEM	48.39	6.2%	*3.9%*	*16%*	*54.37%*
Amerigon Incorporated	2.48	8.7%	*1.1%*	*15%*	*85.57%*
Ascent Solar Technologies	2.86	16.7%	*12.8%*	*30%*	*84.45%*
Beacon Power Corporation	0.42	20.0%	*17.7%*	*31%*	*80.73%*
Ballard Power Systems, Inc.	0.855	1.7%	*6.9%*	*0%*	*82.00%*
China BAK Battery, Inc.	1.06	19.1%	*6.4%*	*23%*	*80.66%*
Comverge, Inc.	4.80	6.9%	*1.2%*	*104%*	*69.50%*
CPFL ENERGIA SA ADS	37.65	5.1%	*3.3%*	*7%*	*51.72%*
CALPINE CORP	5.33	11.5%	*8.0%*	*11%*	*77.18%*
Cree, Inc.	19.39	6.8%	*4.4%*	*54%*	*39.03%*
COSAN LIMITED CL A	2.65	6.0%	*6.3%*	*30%*	*82.36%*
Echelon Corporation	5.99	13.0%	*3.1%*	*21%*	*63.83%*
EMCORE Corporation	0.69	30.1%	*19.0%*	*38%*	*93.45%*
Energy Conversion Devices	18.32	12.6%	*12.9%*	*13%*	*78.02%*
Evergreen Solar, Inc.	1.21	21.0%	*16.5%*	*21%*	*90.43%*
FuelCell Energy, Inc.	2.21	7.8%	*1.0%*	*11%*	*78.54%*
First Solar, Inc.	120.24	10.9%	*14.7%*	*40%*	*62.07%*
Fuel Systems Solutions	11.71	1.0%	*14.7%*	*19%*	*80.88%*

	GUSHAN ENV EGY ADS	1.28	0.7%	26.7%	4%	92.87%
	Ener1 Inc	2.61	9.6%	11.1%	55%	71.75%
	US GEOTHERMAL INC	0.88	15.7%	9.0%	--	81.59%
	IDACORP INC HLDG CO	21.53	2.4%	2.2%	2%	36.47%
	INTL RECTIFIER	12.41	5.9%	6.6%	33%	50.99%
	Itron, Inc.	45.39	10.9%	6.2%	32%	57.28%
	JA Solar Holdings, Co., Ltd.	2.21	6.7%	41.7%	42%	91.81%
	Maxwell Technologies, Inc.	5.28	7.7%	4.3%	32%	64.20%
	OM GROUP INC	16.13	10.5%	5.9%	32%	74.04%
	Ocean Power Technologies	4.33	0.9%	14.2%	14%	68.35%
	ORMAT TECHNOLOGIES	24.74	7.2%	3.6%	13%	57.12%
	Universal Display Corporation	5.55	10.1%	1.4%	14%	67.31%
	Plug Power, Inc.	0.75	10.2%	4.2%	17%	79.28%
	PORTLAND GEN ELEC	16.84	4.0%	0.8%	25%	37.21%
	QUANTA SERVICES INC	20.71	10.2%	6.9%	96%	41.48%
	Quantum Fuel Systems Tech.	0.72	14.2%	14.0%	35%	77.64%
	Rubicon Technology, Inc.	4.24	8.1%	7.5%	69%	87.86%
	RASER TECH INC	2.95	6.8%	4.2%	37%	74.98%
	RENESOLA LTD	2.36	11.3%	40.6%	16%	91.99%
	Spire Corporation	4.47	6.9%	15.0%	52%	76.16%
	SunPower Corporation	25.56	15.2%	10.9%	38%	76.11%
	SOCIEDAD DE CHILE SC	25.34	6.2%	0.6%	95%	57.38%
	SUNTECH POWER HLDGS	6.38	21.2%	43.8%	25%	87.67%
	TRINA SOLAR LTD ADR	7.62	11.8%	40.7%	35%	85.76%
	Ultralife Corporation	8.58	12.3%	6.6%	69%	40.54%
	Valence Technology, Inc.	1.23	12.8%	6.6%	12%	74.64%
	Verenium Corporation	0.46	12.6%	8.8%	84%	88.86%
	MEMC ELECTRONIC MTRL	14.77	11.8%	10.5%	47%	82.98%
	YINGLI GRN ENGY ADR	4.18	10.8%	44.8%	67%	85.05%
	Zoltek Companies, Inc.	6.17	18.8%	7.5%	43%	81.65%

While in theory to enter the clean energy sector at such very low levels (tracker <$6.00 or near $5.80) was possible, that particular window lasted just 2 ½ days. Of course as we repeatedly emphasize the tracker may drop back under $6.00 again and reach lower plumbing new depths in a 'W' shape; it's completely unknowable where true bottom is. *Staying lastly with what we do know,* this chart recalls a recent tracker (PBW) low:

Independent Index tracker goes notably below $6.00 in March 2009.

A Brief Look to our old friend, the VIX

Glancing back just a moment longer, this 2008-2009 plunge is reminiscent of the huge 2000-2002 'crash' – no mere dip then — arguably, perhaps even worse than 2000-2002. However one thing to keep in mind is that crashes will from time to time happen. Terribly panic-inducing events came too in 1987, 1973-1974, 2000-2002 — yet markets came out 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?"

Extreme fear in this latest meltdown is seen in a little-short-of-amazing rise of VIX. In context of this Volatility Index (VIX) as being neither forward-looking predictor nor lagging indicator — but rather contemporaneous (fear) gauge — this latest spike reflected a time more upsetting than any in recent memory. A VIX at 20 was, not long ago, felt to be high.

Fear was thus exceptional in Q4/Q1 as it jumped to over 50, gut-wrenchingly high by any standard. Yet look back today, from the end of June 2009, and we note after rocketing up in Q4/Q1 to reach a nosebleed-high of 80(!), it has since dropped back some. During a latest Q2 it has recently unwound though not at a pace of its upturn. Lately it dropped even back into high 20s (although a big new spike may again very well be seen ahead).

Another metric is a psychological move from where (even good) news is a catalyst to sell as in Sept-November and after a lull in early March (and a bit in mid June) — to instead where even bad news like an ugly jobs report is sloughed off catalyst to buy. The VIX in June indicates perhaps some freshening psychology and bit of appetite for risk today.

Appetite for risk *may* arise when interest rates are pushed down near zero but this is all an uncertain thing. At the end of the day, it is very much about confidence: restore 'animal spirits' and markets quickly take on different look. Of course there's a real possibility we've only seen a latest, biggest bear trap; Q3 may yet bring great new falls.

Lately a specter has shifted from Fear of Deflation near-term, to Fear that thorny-in-its-own-right-Inflation is just a little farther out, as consequences of deficits & quantitative easing take hold. Again it's very conceivable the second half 2009 delivers fresh lows.

Whether that's the case, or no, this recession is uncharacteristically long & deep by past standards. On the other hand (and there's always 'another hand'), take solace in the fact the depth of downturns can help to shape the force of an eventual rebound.

Yes, a hollowing out of credit globally and unwillingness to lend may retard a snap back — perhaps for some time. Yet, once it arrives no matter how long it takes to get through bottoming … the recent depth of declines may even presage swift moves smartly upside. As noted, second half 2009 and Quarters after shall be of keen interest!

Changes in the Index (ECO) for the Start of Q3

There was one addition of Broadwind Energy (BWEN) to the Index for start of Q3 2009. There were no deletions from the Index.

Two Practical, Emerging Technologies: Solar Power and Electric Cars

Moving on this Report is next a bit different from the norm. Typically when writing, it's in context of at least some recent Index increases: the Report then stresses that ECO can and surely will also at times 'drop like a rock'. We thus emphasize there are great *Downward risks* too in a Sector / Index volatile as clean energy. However, for 5 Quarters to Q1 2009 there's already been primarily, nearly exclusively downwards movement.

A result is sparser desire today to highlight downward risks when ECO plumbed remarkable values going into Q1 at under 120, <100, even <60. And we always hesitate to point much to scope for up moves as Indexers only, cautious by nature & unwilling to 'hype' any upsides. So put aside markets, and there are other relevant topics to be address here.

Believing this might be of interest, we'll look here at two emerging clean energy technologies with potential for some integration: solar power & electric vehicles (EVs).

Solar power, like EVs is receiving fast-growing interest including from investors. We'll look in particular at a few limits restraining these technologies today, and possibilities ahead. In particular, their batteries have held back electric cars for a century; it's thus helpful to get a feel for why/how batteries constrain in day-to-day use of a (solar powered) EV.

Seen another way, in early 2009 a quite unusual issue arose: how should one productively spend mentally-trying-months when markets are remarkably going just-down? As a passive Index we 'sit on our hands', and in long, bad bear markets lack of any new equity offerings may mean supply piles-on later — yet, it's vexing while the bottleneck lasts. Instead, we look next at new technologies that may lay ahead just over a horizon.

Solar Power for a better Solution.

Many energy options in WilderHill Indexes are technologies that we not only address in a technical sense, but also utilize everyday. We believe practical knowledge-gained can assist in discussing clean energy ahead. For example we are intimately familiar with how solar power, electric cars, and energy efficiency can be sensible today. This is more than theoretical; at our 1-acre San Diego site we utilize several different systems to:

1) generate electricity and
2) harness solar power to run electric vehicles and
3) provide building hot water.

To visualize how sunshine can power fast electric cars, let's start with the solar. To generate our power we harvest considerable electricity from the sun using PV (PhotoVoltaic = electricity making) panels. They total about 6.65 kilowatts (kW) and are 'grid-tied' meaning this building is connected to the grid; in daylight we generally make much more power than we consume and automatically 'sell' extra power to grid.

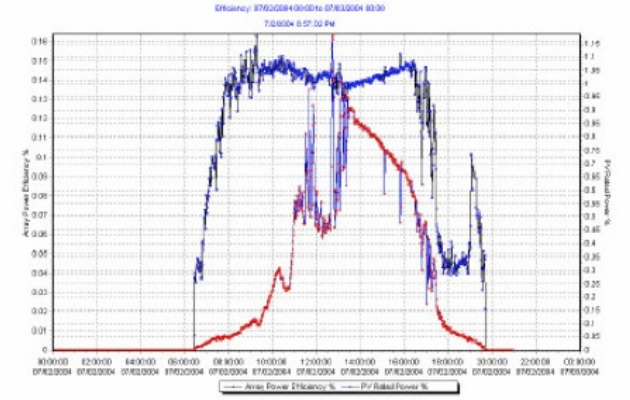
At night it's reversed; we 'buy' power from the grid — our meter runs the opposite way. Being grid-tied simply means we avoid cost of batteries and allows rebates from the State of California. Also, as will be shown, using the grid increases solar power's value. Our PV has performed well in its cost/benefits, its return on investment, and in practice.

Phase 1: The start of solar here was 2003 installation of a 3.85 kilowatt (kW) solar rooftop array, calculated to achieve payback in very roughly, approximately 10 years (see solar PV system costs). That fairly 'short time' to payback was due to two crucial components: 1) *California's solar subsidies, and 2) *Time of Use metering (TOU) by our utility.

Certainly upfront costs were significant. And yet we estimate that after making solar power for 10 years, we recoup a full return on investment. Afterwards it goes on making power for our building + 'fuel for our cars' years to come and at no charge: it's free!

We first installed 21 new 185-watt panels (see spec sheet) with a then-high 14.2% module efficiency rating to get the most from rooftop space. We chose ***mono***crystalline PV made in USA, at the time among the most efficient consumer PV (instead of ***multi***crystal PV). Monocrystalline we'll shorten to 'mono' and it paired to a 3,500 watt inverter along with a 1st, then 2nd web-based real-time monitoring system in one of the first such applications in California though no single aspect of this system was a big leap.

As illustrated by data in detailed graphs, the panels delivered efficiencies roughly 5% to 10% over manufacturer rating. Inverter efficiencies are also measurably high. Over long sun hours in Summer/Fall, we generally make on average around 14 kilowatt/hours (kWh) per day from the Phase 1. In Wintertime with fewer daylight hours, or on cloudy days anytime and less irradiance (Watts/Meter^2), we generally make much less:



Monocrystalline rooftop performance graphs, 2003.

Installation: mono going on rooftop, 2003.

Phase 2: Pleased with Phase 1 results, we next installed a competing PV design by adding 24 **multi**crystalline ('multi') PV panels rated 120 watts each. We chose a different, passive inverter design as well. Phase 2 alone was rated at 2.8 kW, and so total ongoing PV capacity for both of these systems put together here is about 6.65 kW overall.

Rooftop space gone, eager to try a new set up, the Phase 2 multicrystalline panels were ground-mounted in 2 rows seen below, at greater inclination angle than roof PV. Ample space also allowed us to optimize the ground panels for all year round, giving advantage over roof panels (though ground panels are hindered now by a bit of shading).

That roughly 6 kW combined solar PV was then right-sized for our own electricity needs, clearly enough power for our building plus our moderate daily pumping of water.

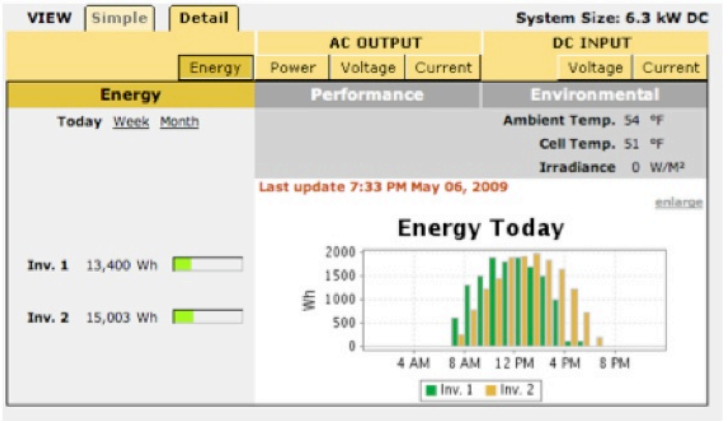
From an investor, and Indexing standpoint, PV for Phases 1 & 2 came from diverse big-cap conglomerates, so unlike 'purer plays' their stock price wasn't moved by prospects for PV. (Phase 2 panels were 1999 surplus and donated by a university researcher). Unfortunately yet unavoidably, few pure-plays then existed to capture prospects for varying PV types. Since that time, many pure-plays are now present across solar; increasingly they capture discrete prospects for instance in monocrystalline or multi solar, thin film, STEG, etc.

One lesson learned is we're surprisingly pleased with multicrystalline panels of Phase 2. Back in 2002 we'd had slight bias towards monocrystalline given higher efficiencies. But in a few short years, multi narrowed that gap. Today it achieves efficiencies greater than even mono PV from just a few years ago. (Surplus 1999 PV was donated by a university researcher so it's impossible to include Phase 2 costs in data; for those interested in mono vs. multicrystalline see Q4 2005 ECO Index Quarterly Report).

Multicrystalline 2.8 kW, ground-mount.

Relative performance is seen in the Chart below over a typical day in May. Compare ground-mounted multi PV Inverter 1 (in green) - vs. the roof PV at Inverter 2 (in orange) — their output isn't far different. In mornings the ground-mounted leads; the rooftop mono peaks a bit later. While rooftop mono makes 15 kWh — multi panels come close at 13 kWh (shading by a small growing tree halts its output around 4 pm).

Roof panels are regrettably encumbered by unnecessary disadvantages. They're mounted at flatter angle due to local height rules so favoring sun in late Summer and have a non-ideal orientation due to limited roof space. Those & other confounding variables conspire to fog comparisons, but a point is we're very pleased with both systems that total 6 kW:



Inv 1 (ground mount, green) vs Inv. 2 (roof, brown): 1-day.

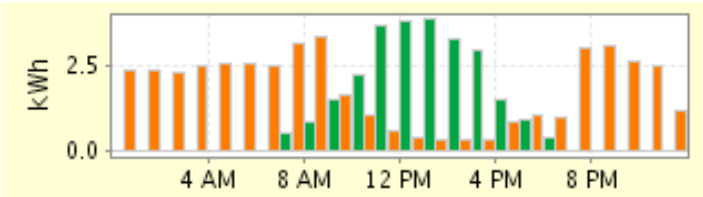
Importantly since the 2003 inception of this solar PV system, it has provided us about 24 kWh (kilowatt/hours) per day of electricity. That's roughly enough to meet needs of many a small business, or home. Do remember this 24 kWh per day, it's an amount we here think of as "One Sun" and will be relevant with addition of an electric car below.

It's also an average. We make for instance well over 25+ kWh on longer, typically sunny, and non-foggy days of late Summer & Fall. Conversely on shorter Winter days, or on any cloudy or foggy days, solar production will be very substantially less.

Consider next our billing period on TOU (Time of Use) metering is a 1-year annual basis — not monthly. So with grid essentially a battery, and a 1-year billing cycle, we can use greater power in late Summer/Fall to offset Winter shortfalls. As PV from day covers night use over 24 hours, surplus Summer & Fall carries the Winter year in and year out.

Practical Knowledge Gained from Adding an Electric Vehicle

Next, add in our exciting recent addition of a 2008 electric car. It's already very much loved here: clearly exceptional, great to drive, quick & lovely. Importantly too it uses our solar PV. Simply plug in and this car dovetails elegantly with our solar as in essence a sort of virtual 'solar EV'. We've also gained practical experience mating PV+EV. Consider first our energy-made (**green**) vs. our energy-used (**orange**) for a typical day in May:



Size & shape of solar energy *made* (**green**) is predictably as before— roughly a parabola that matches (no surprise!) the sunshine and these are the hours usefully utilities charge most. PV production hasn't changed at all, since an EV was added to the equation.

But now a height & shape of our energy *demand,* in **orange,** with EV is far different. We now consume a good deal more, although now it's mostly at night. The reason is simply that significant EV charging starts late and goes overnight until the battery is at full. After some driving the next day, recharging repeats the next evening.

That's seen in high 2+ kWh orange bars above left/right in May, charging at 120 volts. Adding one EV suddenly enlarged & shifted our energy-use, something to be mindful of when you're solar powered. (Plus in June 2009 we changed to charge at 240 volts — so the bars now get really high!) For our live data, http://wildershares.com/solar.php

On the other hand we're not paying for gas now — plus this particular EV has supercar performance and so not surprisingly a very big battery. This battery holds 54 kWh giving the car great speed and its good range, but therefore needs much (solar) 'juice'.

It's important to understand here that due to cooling and other losses charging, filling from empty actually takes about 68 kWh, or some 26% more than a 54 kWh it holds new. This latter **68 kWh** is a seminal amount here since it quantifies how much truly is needed; we'll use it to determine how far you can go from the power of the sun.

Crucially we do all our EV charging overnight, because with a current Time Of Use (TOU) metering here the cost is now 'only' 18 cents/kWh during the Off-peak hours at night.

By contrast On-peak rate is far higher at 30 cents/kWh from 11 am-6 pm (weekdays) when our PV nicely makes and sells back surplus power from the sun, giving us a credit.

To charge overnight isn't a sacrifice at all; we'd do that anyway. Moreover this car captures so many natural benefits of EVs. For instance it isn't slow like a gasoline car, or "gasser". Thus it isn't 'slow' like, say, an average Porsche or BMW. Only the very fastest gassers are in its league or quicker, such as a fastest Turbo/GT Porsche, or Ferrari.

Better acceleration than most any gasser and far more fun to drive, with 100% torque and it doesn't require maintenance of a gasser. All this, and you're not dependent on vexing oil at all plus you can make your own clean fuel from sunlight to boot!

A 'solar electric car', in foreground.

For this, the first-ever production EV sold our fuel is PV – we just plug in. Plus we'll add 'more fuel' of differing PV ahead, possibly with small windpower too. Contrast that with a gasser. There an only fuel is unlikely to make yourself-gasoline; yes, it's energy-dense but finite, dirty, comes only from elsewhere and a gasser can't go 10 feet without it.

On the other hand, lessons are being learned as well here about real PV+EV limits today. For instance in the Chart above that charger turned on in evening: however this big battery could only be part-charged; it still 'wants' more time than TOU allows per night, since drawing a maximum of 15 amps from the common 120V outlet is just too slow. (There is an Optional wall mounted quick charger, but we do not have that here).

Picture this as moving water from a pond into a jug: a size of the tube matters. Pushing it through a narrow straw (120V outlet @15a) slows things; a wider tube is quicker.

We thus recently changed at where this EV is habitually parked to a more robust 240V (@30 amps on a NEMA 14-50, 4 wire) cable. This dramatically shortens charging time; a depleted battery now fills in 'just' 8 hours max—rather than 24+. Because we never start with battery at zero, beginning at 10 pm means we're always done well before 6 am.

Next, a measuring unit to help explain energy/time is 'kilowatt/hour', kWh. Elegantly it applies equally to energy made by our PV — or energy used in a building or car; 500 watts in 2 hours, 1,000 watts in 1 hour, or 2,000 watts in 30 minutes, each = 1 kWh.

Consider with our TOU rates, a kWh surplus power made On-peak is worth 1.6X per kWh used Off-peak, due to billing ratio of 30:18. Were *all* 24 kWh made On-peak 11 am-6 pm, leveraged 30:18, it's akin to receiving 41 kWh Off-peak. *But not quite all* is On-peak (graphs, weekdays) so we'll call it like being able to supply say, 30 kWh/day Off-peak.

What next is Range for this fast car wanting 68 kWh (about 2 days of good sun)? To give an exact range is slippery, regardless of solar or not. Yes this fast car is impressively EPA rated at 244-mile range, *or* can go 0-60 in 3.9 seconds. Yet it can't go both far *and* fast.

To explain sit inside, turn the key and you'll see 3 driving modes; we choose from two. Main default mode is 'Standard' and we most always use it. A second 'Range' mode allows for a bit more battery charging, but it slightly shortens battery life; we sometimes use it if we're going unusually far — but it slows the EV considerably so it's like driving a gasser. (A third Sports mode is for track-type performance and we don't use it).

Being so grin-inducing fast in Standard, there's no need for us to use anything else except occasional Range mode if we're going say, 200 miles or more on a single charge.

After turning the key in Standard, you see 'Ideal' range: it may start at say 195 miles — not the EPA rated 244 and so you 'lost range' being able to go fast in Standard. You're seeing only 80% of theoretical range partly for battery management. Charging to 90% in Standard prolongs life, with another 10% left in reserve also not showing onscreen.

Yet likely range is even less. Temporarily you can switch from 'Ideal' to 'Estimated' range based on how you've driven recently. Estimated will give a still lower number.

In our experience typically driving to where state of charge shows about ½ 'tank' (or ½ charge) left, we've gone approximately 70-75 miles. Extrapolating and being conservative we normally expect some 140-miles of total range; that's without dipping into 10% Reserve and by driving only in the fast Standard that's so enjoyable.

Sample screen at battery ½ depleted.

So at ½ charge there may be around 71 Estimated miles left, or say 95 miles ideally. Driving mindfully ahead you could easily get greater than 71 miles or nearer 95 miles on remaining juice if you prefer to slow a bit, while Range mode could give more.

Forget oily old MPG: We're getting 72 Miles Per day of Sunshine, or 72 MPS!

OK, now to a key question: what's real-world range in this fast EV powered by sunshine? We suggest rephrasing the question: H*ow far does our 6 kW solar PV make this car go?* Recall we make 24 kWh over an average day; we call this 24 kWh in a day, 1 "Sun." Broken down over 24 hours, roughly *1 kWh is made per hour*; we call each kWh one "sol" — same as each kWh being *used* by a building or car. Two hours is 2 kWh, or 2 sol, etc.

As will be shown we get about 3 miles range per kWh, or 3 miles/sol in this fast car.

Simply a full 24 kWh/Day means this car can drive 72 Miles from each day of sunshine. Thus it has a range of 72 Miles Per day of Sun, or 72 MPS. Translating how far you can go off stored sun power alone, and seeing that it's 72 Miles Per Sun (MPS), or 3 miles per sol (3 m/sol) may feel more intuitive and simply more elegant than oily old MPG.

Numbers you settle on dramatically impact calculations. For instance in Range mode you could get 240 miles from 68 kWh put in the battery. That means you could go 240 miles on one charge equivalent to 2 days of stored good Summer sun (TOU gives hefty >30 kWh/day Off peak). Or in one day you can see over 100 Miles/Sun (MPS) if mainly going at speeds 30-60 mph although driving this car in Range mode and so slow as a 'quick gasser'.

Going the other way you might get only say, 15 Miles Per day of Sunshine (15 MPS), or less! Some days it's very cloudy with peak-measured irradiance under 100 W/M^2 or under 5 kWh all day. Phase 1 PV at only 2.5 kWh on one June day yields <5 kWh total. Cloudy or Winter days being much less productive, figures can go very low this other direction.

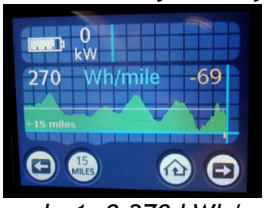
Consider too energy made for this car is in addition to meeting building demand. On many days PV isn't even able to meet building demand, so there's perhaps zero PV EV fuel some days. For our purposes here we assume away the building demand in calculating MPS.

We will watch cloudy and Winter days over a year, to see how PV meets actual demand with EV ahead. Probably more PV kW (maybe wind too) will go in as Phases 3/4 ahead.

Solar is more changeable than 24 kWh/day (or 30+/day Off-peak due to *when* sol are made), however for simplicity's sake we've kept 1 Sun constant. Yet a 2nd major variable is *energy expended* in driving. That's keenly influenced by *how*, & *where* we drive an EV.

We'd estimate our average use is 330 Wh/mile after charging losses and reckon as follows. On local streets and mainly going 30-50 mph this EV expends relatively little energy. We often see 250 Wh/mile or less, so 1 sol (kWh) from battery before charging losses gives 4 miles. But add in more 60 mph speeds, and we'll then spend say 270 Wh/mile (Ex. 1).

Add in fast freeway miles and consumption rises to say 300 Wh/mile (Ex. 2). We don't drive freeways much, but with either that and/or some good strong & fun acceleration, costs at battery swiftly go above 0.300 sol/mi; efficiency drops quickly at higher speeds.



Example 1, 0.270 kWh/mile typically spent in 30-50 mph stop & go traffic.

Example 2, add in some highway miles and We can spend say, 0.301 kWh/mile or more.

Much fast acceleration or 80+mph driving pushes it to 350+, so speed is a big variable. In sum our own driving mix is mostly local & probably near/under 280 wh/mile overall; subtract a bit for our Range/distance at times and we likely see a bit under 270 wh/mile average. With 270 and adding a 26% charging loss takes us to 0.330 kWh/mi, so we get roughly 3 miles range per kWh, or 3 miles/sol. The EV manufacturer data are here.

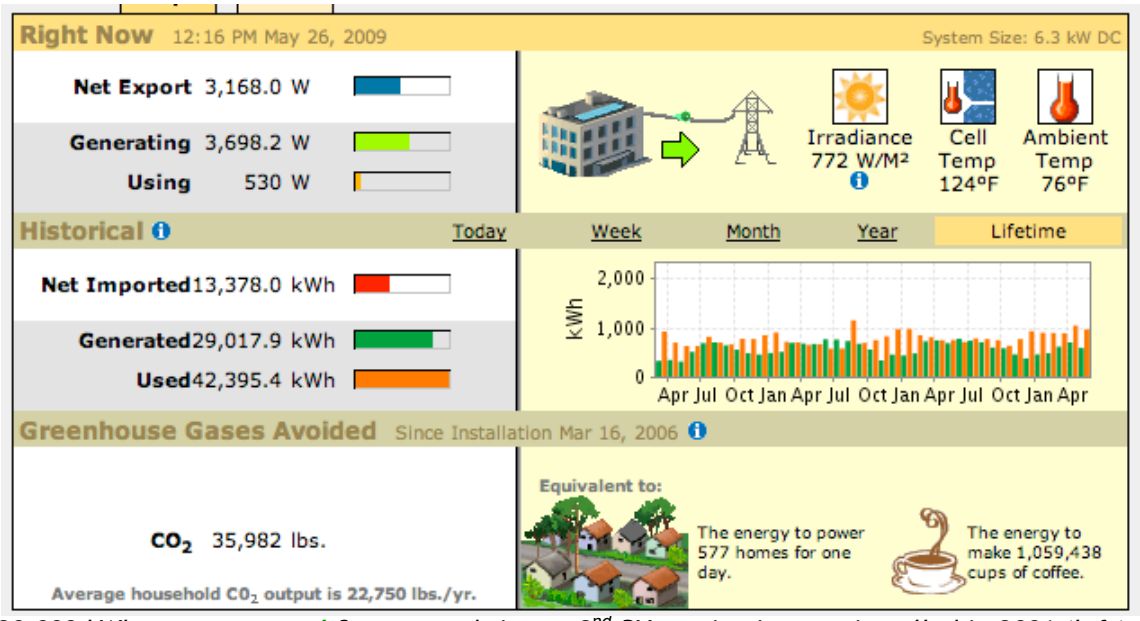
Generating 'our own sol' makes us better aware of building demand. Similarly, an eye to demand behind the wheel yields noticeably more range in an EV, than a gasser. This isn't bad *per se*, especially since this EV is simply so better than a gasser. Or we could just forget that EV speed penalty, but sometimes to drive this EV for its range is fun too.

For instance we hardly touch brakes because regenerative braking slows us down while making electrons to boot. So just lift off the 'gas' and this car slows itself, particularly from higher speeds when inertia briefly puts say 30 kW 'back in tank'. This creates a smoother more satisfying ride and it makes you aware how archaic the gassers are, heating brakes to arrest momentum while putting zero fuel back in tank for the effort!

Since you've spent the electrons getting going in a first place, to recapture some by regenerative braking is an item bought & paid for already — you're just being efficient.

Back to PV/EV nexus, we'd estimated PV payback in about 10 years. Now with 5¾ years of solar power under our belt, we're seeing that's about right. Total Phase 1 PV had cost us $15,511 (California's generous subsidies back in 2003 nicely cut our price paid in half).

Since 2003 based on hard data from our 2nd monitoring system since March 2006, a back-of-the-envelope review shows we're now about 55% to payback. We expect payback for this Phase 1 solar in 2013, having made at least $15,511+ worth of power by then:



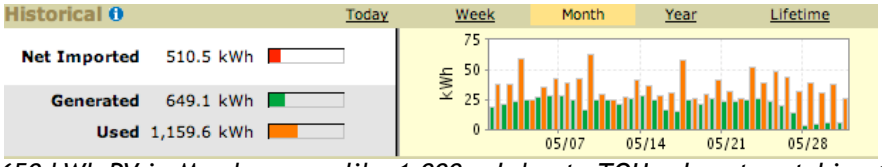
*29,000 kWh was **generated** & measured since a 2nd PV monitoring was installed in 2006 (left). For this sample sunny On-peak moment (left, top), Irradiance is a sunny 772 W/M²; our PV is making 3,698 Watts, **demand** that moment is 530 Watts, and 3,167 Watts is being exported.*

And our payback might be better still. We'd looked only at a payback for our *electricity* — a complex problem but self-contained one. Now that we also avoid buying *gasoline*, that is a vital 2nd factor accelerating payback. (Gas costs were roughly double electricity alone). We haven't missed going to gas stations at all … it's said the stone-age didn't end because we ran out of stones … elegant solar PV+EV just feels like a solution at hand.

The combination PV+EV works, but there's clearly limits on both sides of the "+".

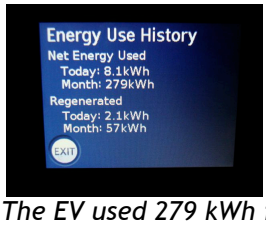
So this combination of PV+EV works, although we've found limits on both sides of the "+". For instance this car is very thirsty; we're suddenly consuming much more PV than before in powering just a building. Rather than PV meeting fully 100% of a smaller demand pie as before, now the demand pie is bigger. About 30% of greater need is going into the EV, and some 70% is going into the building. There's no free lunch, even with solar.

How well has 6 kW of PV coped? Over a cloudy May, demand from both building & EV was 1,160 sol (kWh) — yet in that overcast month PV made only 650 sol. That sounds a huge shortfall, but TOU leverage at say, 30:18 almost covers it. But for 4 socked-in foggy days month-end seen below, PV+TOU would have covered bigger combined demand.



650 kWh PV in May becomes like 1,000 sol due to TOU--almost matching 1,160 used.

So clearly not enough watts was made directly head to head. Yet TOU boost means 650 sol made On-peak is like delivering 1,000 sol Off-peak, just short of running building & car together! It's actually more complicated, given some building demand (but not car) is On-peak, weekends etc but this is the basic story. Of 1,160 sol used May, building needed 810 sol or some 70% of total, and car needed 350 sol or 30% (after charging losses).



The EV used 279 kWh in May, or 350 after losses. Note 57 kWh of regen added range.

Seen another way, let's say this building uses 25 sol/day average, much Off-peak. Solar PV making 24 sol/day nearly covers it straight — and does so easily with TOU making it more like 30+ sol/day. But add an electric car… if we drive that 20-30 miles/day and get 3 miles per kWh, we'll call the added demand 15 sol/day (that's all Off-peak at least). Now we need say 40 sol/day, with about 70% of that demand from a building, and 30% coming from EV, falling a bit short of how much is being made even with TOU.

We're adding 2 EVs ahead, so any new PV needed shall be very costly upfront. Yet where in the world does gas go to zero $ in time — as does PV for EVs? Plus on TOU it's like the gas that costs $3/gallon by day, is on sale @$1.80 at night (thanks Peder for analogy!). PV even bigger than 6 kW may become the norm as EVs grow in use — lowering the costs for solar & wind. Baselines for 'enough' dispatched kWh may expand with more EVs.

Both are immature; modern PV is a few years old, while modern EVs are quite new. For EVs the limit is batteries. Today's batteries are surprisingly basic, given EVs were vetted a century ago. But after being mocked or ignored, a few seminal EVs have proven wrong the conventional wisdom that they're all slow as golf carts, with <20-mile range and must look like a science fair project. Myths shattered, a battery race is clearly on.

A century ago, buyers of gassers were made aware that their fuel was toxic, flammable, cars required gears (stick or now automatic) due to inefficient gas engines and frequent oil changes were mandatory. All that same still holds true for gassers of today, though we the public over time have pretty much assumed those gasser limits away.

Similarly there are limits to EVs too, but just different ones. EV batteries in particular, should be better understood so there are no surprises. Take an EPA rated 244-mile range. Yes if you're willing to drive this superb car like a common gasser (in Range), a typical mix of speeds (it's much more efficient around 30-60 mph) and are OK impacting battery life by 100% fills — then you'll get 244 miles. That just needs to be understood.

Further, a passage of time makes all worse since batteries age. Present unbranded commodity batteries decline by cycling, and calendar-aging so performance degrades without mercy. This applies too to a 54 kWh figure (we've seen figures of 54 and 55 kWh, so use 54 here). But not to paint an overly pessimistic picture, this EV battery today is up to snuff and notably came with a free, long-term warranty giving us peace of mind.

So we expect this battery to deliver very good to acceptable performance at least for 5 years or 100,000 miles, and guess we might see roughly say, 70% left after years of use. Very importantly too battery technologies improve, so this should get much better.

For an investor, or an Indexer, it points to the importance of battery technologies. Today's unbranded Li-Ion cells are amazingly better than chemistries a few years ago yet they're arguably going to get far better, ahead. Next few years look to be exciting.

It feels as if every few months an interesting step is taken. For instance a May of 2009 report showed experimental lithium sulphur with possibly higher energy density (Nature Materials, 2460). An EV balances its power (kW) to go fast, with its energy density (kW/hr) to go far; newer chemistries might improve both. Or imagine supercapacitor/battery hybridization; Nature in March 2009 reported an interesting "off-stoichiometry" (reactants/products in unbalanced reaction) using LiFePO4, lithium iron phosphate.

Don't let this obscure a key point: Phase 1 EV is today superbly capable at any speed. Without needing future battery *unobtainium* (something great if existed but doesn't), this is already catalyzing a global move to EVs. ***Now it's all about bringing down costs!***

In sum driving this virtual solar EV is fantastic; its faster, better & more fun than a gasser. Yes all EVs face the issues to be solved longer-term like losses in charging, a big range decline at higher speeds, and battery aging, but each can be much improved ahead.

Shorter-term are minor issues too like it's tough to get in/out of this EV (more models can quickly fix that); 120V@15amps gives just 5 miles of range per hour charging (but 240V @30 amps is nearer 30 miles/hr etc); and EVs don't pay gas tax to maintain roads (a policy fix). Yet these all can be addressed, as more EVs of various types come to market.

In sum like our gaining practical experience with differing solar PV types, we look forward to more miles on this followed by 2 other EVs ahead. If interested in past blogs on a 2008 Phase 1 EV posted elsewhere, some are here –and here and a recent one is here.

Better Efficiency: All Part and Parcel of a Smarter Energy Path

As important as is the energy *made* by renewables, attention to *demand is just as vital*. Clever reduction in use can deliver keen results from the very start; it's here that many inexpensive, effective and readily worthwhile steps should first be taken.

We thus monitor our changing energy demand in real time — since it's as useful to reduce need in the first place — as it is to make all energy renewably.

And solutions can be brilliantly simple. Passive building designs can for instance better heat & cool at very little cost. Or substituting in LEDs, in place of hot incandescent bulbs helps mitigate the need for cooling brought on by inefficient bulbs in a first place.

One large lighting structure is rated by its manufacturer at 720 watts: by installing efficient bulbs we consume ~80% less power for similar light — and avoid unwanted heat.

Another example can be solar thermal panels that simply preheat water in a building. Demand-side reduction effectively takes many paths: think of hybrid solar/electric bikes; a digital thermostat adjusting heating to precise time of day; retractable awnings letting sun in cool hours or shading when hot; energy efficient appliances; multi-speed pumps etc. Each is a small step, but together they can add up to a larger difference.

For efficiencies yet farther afield, we seek smarter solutions in green waste & water-use. For instance we compost green waste, and have tasty vegetable gardens in an area once covered by water-thirsty, nonproductive lawn. Instead of just grass, there's abundance. Efficiency once started is rewarded, and often doesn't end at shores of energy alone.

Even small efficiency steps may yield a big difference as the gains snowball. You can easily even find yourself looking back & thinking, why didn't we do that before?!

For an investor or Indexer, a relative paucity still of pure play public companies in energy efficiency, reducing energy demand, advanced electric car batteries, or opportunities in metering and smart grid is worthy of note. Arguably, it won't stay that way long.

Given an importance of smarter conservation and efficiency we may indeed see growth ahead. Indeed we'd seen the solar PV space evolve from very few companies in 1990s — to a freshening number with often growing market caps. Watch this space since there may be efficiency news to come …. (Lastly the first 3 weeks of July this solar EV will be missed in storage mode while looking at other global energy efficient transport).

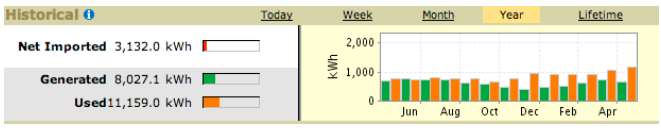
Sample LEDs, desklamp & bulbs.

Hybrid pedal/solar bike & EV.

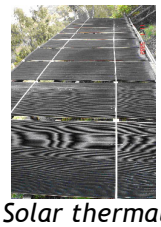
Instead of lawn: Edibles.

Lastly, a few details on PV+EV math above:
(Math above took us knee-deep into the hard data, & unavoidably too some 'best guesstimates'. We'd estimated a range near 0.270 kWh/mile from battery, to get 3 miles/hour of sun after 26% charging losses, or 72 MPS on 24 kWh/day. Alternatively a full charge needs 68 kWh, and gives real world range conservatively of say 140 miles in fast Standard - or the EPA-rated 244 miles in Range. Splitting that difference gives mid-range of say, 190 miles for a cost of 68 kWh from solar energy, or about 2.8 mile range out of each 1 kWh. We'll rough out to be 2½ miles/kWh. Now getting 2½ miles per kWh supplied and with one hour of sun (sol) giving roughly 1 kWh based on the past 36 months, sun+6 kW PV moves this car approximately 2 ½ miles for each sol. Put into terms of Miles Per day of Sunlight or MPS, a conservative calculation gives 60 MPS, without a TOU boost).

*(For those interested in PV payback we monitored 29,000 generated kWh March 2006-May 2009, or 39 months averaging 743 kWh/mo. Extrapolate back to 2003 before 2nd monitoring started gives 30 more months plus June 2009; 70*743 = 52,000 kWh grand total for 6.65 kW PV over 70 months. Of course that's monitoring both 3.85 kWh Phase 1 and 2.8 kWh Phase 2; so we'll figure 70% or 36,000 kWh is Phase 1. Yet here it gets even trickier since it's thorny to state utility cost rates even now(!) let alone a few years hence because high-energy users pay more (like due to EV charging). In this high-priced region and costs halfway say, between Off-peak and On-peak, or 24 cents kWh, it equals $8,640 in costs avoided to date. 24 kWh=one Sun, so 39 months of monitored PV for 29,000, or 743/month average works out to 24 kWh per day over this longer period (743/30.5=24.3) bolstering 1 Sun data as being a bit higher than 22 kWh for 1 Sun the past year. (A small tree lately blocks Phase 1 panels a bit and should be trimmed; lastly just for fun if we looked at a full solar year or 8,000 kWh, then this car gets say, 24,000 miles/per Orbit!)).*



Over a past year: 8,000 kWh is produced from PV.


Solar thermal.


Solar hot water.

Moving on we turn briefly to 3 other independent and yet relevant 'WilderHill Indexes':

Wilder NASDAQ Energy Efficient Transport Index® (HAUL) - and WilderHill Progressive Energy Index® (WHPRO) rebalance for the start of Q3 2009; so too does the WilderHill New Energy Global Innovation Index (NEX).

In addition to our WilderHill Clean Energy Index (ECO) we note an independent yet relevant *Wilder Nasdaq Global Energy Efficient Transport Index* (HAUL) recently debuted as the first-ever Energy Efficient Transport Index®. More on this global HAUL Index® is at http://www.greentransportation.com Another independent, innovative Index is the *WilderHill Progressive Energy Index®* (WHPRO) focusing on improving energy efficiency & reducing CO2 from dominant energy sources of today, http://www.whprogressive.com

Global clean energy that's mainly outside the U.S. is a focus of *WilderHill New Energy Global Innovation Index* (NEX), http://www.nexindex.com - its recent intra-Quarter weights in Q2, plus Q3 Rebalance are in Appendices. Rebalancings for all 3 independent, yet relevant Indexes are in Appendixes below. Trackers for all 3 are PTRP, PUW, PBD.

Summary

Second Quarter 2009 opened with the Clean Energy Index® (ECO) at 77.46 and closed at 101.13, for a positive return of +30.5%. There was one addition to the Index (ECO) of Broadwind Energy (BWEN) for the start of Q3 2009, and there were no Deletions.

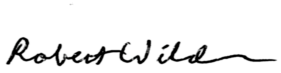
After sliding dramatically from 2008 through early 2009, the ECO Index lately has shown movement again both directions. Whether it declines again near a recent floor of 60 in Q1 to make a double-dip "W" — or instead sees up & down activity ahead with consolidation in a new Q3 (or even see some further strong increases) — shall be of some interest

In a practical matter a convergence of solar/electric cars was addressed in this Report. That synergy isn't a decade away: we see it's already here. We looked in an applied way at getting 72 Miles Per Solar day (72 MPS) from a solar/electric car. With PV+EV may come an abundance of building clean power, of 'sol', great torque behind the wheel & fun.

We look forward to adding more clean energy ahead making this robustly a solar-powered car. Each green electron made midday On-peak is more valuable than a brown one used Off-peak at night: that economic reality alone has let 6 kW of solar meet all our demand. But if we soon say double production of clean energy, then in physics too we'll be making enough green electrons to power both building & car(s) in straight 1:1 swap without TOU. Happily, adding new PV or small wind in Phases 3 & 4 isn't technically challenging.

As always we welcome your thoughts & suggestions.

Sincerely,



Dr. Rob Wilder
rwilder@wildershares.com

Appendix I: Index (ECO) Past Q2 2009 Components and Weights as of 6/14/2009:

Following were Q2 weightings at about 2 weeks before the rebalance to start Q3 2009; after rebalance each stock floats according to its share price over the coming Quarter. (*Stocks below $200 million in size at rebalance are banded with a 0.5% weight).

Company Name	Symbol	% Weighting
Yingli Green Energy Ltd	YGE	4.82%
Fuel Systems Solutions Inc	FSYS	4.57%
Cosan Ltd	CZZ	4.30%
Trina Solar Ltd	TSL	4.29%
SOLA International Inc.	SOL	3.61%
Suntech Power Holdings Co Ltd	STP	3.39%
JA Solar Holdings Co Ltd	JASO	3.16%
Ormat Technologies Inc	ORA	3.10%
Om Group	OMG	3.03%
American Superconductor Corp	AMSC	3.02%
Sociedad Quimica de Chile SA	SQM	3.00%
Zoltek Cos Inc	ZOLT	2.99%
Evergreen Solar Inc	ESLR	2.70%
Ener1 Inc	HEV	2.67%
First Solar Inc	FSLR	2.57%
Sunpower Corp	SPWRA	2.51%
Itron Inc	ITRI	2.51%
UNIVER DISPLAY	PNL	2.43%
Calpine Corp	CPN	2.41%
GT Solar International Inc	SOLR	2.40%
Cree Inc	CREE	2.37%
Energy Conversion Devices Inc	ENER	2.28%
International Rectifier Corp	IRF	2.26%
Valence Technology Inc	VLNC	2.22%
Echelon Corp	ELON	2.18%
MEMC Electronic Materials Inc	WFR	2.15%
Quanta Services	PWR	2.13%
Applied Materials	AMAT	1.96%
Raser Technologies Inc.	RZ	1.88%
Air Products & Chem	APD	1.85%
CPFL Energia S.A.	CPL	1.76%
Portland General Electric Co	POR	1.59%
Idacorp Inc	IDA	1.51%
US Geothermal Inc	HTM	0.80%
Rubicon Technology Inc	RBCN	0.74%
China BAK Battery Inc	CBAK	0.71%
Beacon Power Corp	BCON	0.70%
Advanced Battery Tech Inc	ABAT	0.68%
Amerigon Inc	ARGN	0.65%
Emcore Corp	EMKR	0.64%
Spire Corp	SPIR	0.64%
Ascent Solar Technologies Inc	ASTI	0.61%
Maxwell Technologies Inc	MXWL	0.60%
FuelCell Energy Inc	FCEL	0.59%
Comverge Inc	COMV	0.58%
Ballard Power Systems	BLDP	0.53%
Gushan Envtl. Energy Ltd	GU	0.49%
Plug Power Inc	PLUG	0.38%
Ocean Power Technologies Inc	OPTT	0.36%
Quantum Fuel Sys Tech	QTWW	0.36%
Ultralife Batteries Inc	ULBI	0.35%

Appendix II: Index (ECO) Components & Weights at latest Rebalance:

INDEX (ECO) SECTOR & STOCK WEIGHTS FOR THE START OF Q3 2009. 52 STOCKS.

Each stock freely floats according to its share price after rebalance.
*Stocks below $200 million in size at rebalance are banded with a 0.5% weight.

Renewable Energy Harvesting - 32% sector weight (11 stocks @2.72% each; +4 banded stocks)
**Ascent Solar,* ASTI. Solar, early-development stages for thin film CIGS flexible PV.
Broadwind Energy, BWEN. Wind, holds firms across supply chain for wind energy.
**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 - 35% sector weight (14 stocks @2.46% each; +1 banded stock)
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.
GT Solar, SOLR. Solar, PV manufacturing lines with automated fabrication.
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, smart 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 - 15% sector weight (6 stocks @2.25% each; +3 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 - 6% sector weight (2 stocks @2.00% each; + 4 banded stocks)
**Amerigon*, ARGN. Thermoelectrics, subsidiary in conversion of 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 - 5% sector weight (2 stocks @2.25% each + 1 banded stock)
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.

Greener Utilities – 7% sector weight (4 stocks @1.75% 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: Q3 2009 Rebalance for the Independent yet relevant, HAUL Index®
Wilder NASDAQ OMX Global Energy Efficient Transport Index (HAUL)
For start of Q3 2009. 34 stocks total.
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.

Alternative Vehicles. 7 stocks. 25% Sector weight; stocks @3.57% each.
HEV – *Ener1 (U.S.)*. Lithium ion, battery maker for electric cars, plug in hybrid vehicles.
PIA:BIT – *Piaggio SpA (Italy)*. Scooters, mopeds & motorcycles; brands include Vespa.
1211:HKG - *BYD (Hong Kong)*. Manufacturing innovative new electric batteries, cars.
6674:TYO – *GS Yuasa (Japan)*. Mass producing 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.
STS:BIT – *Ansaldo STS SpA (Italy)*. New information technology in subways and rail.
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.

Sea, Land, Air & Intermodal. 9 stocks. 25% Sector weight; stocks @2.77% each.
CLNE – *Clean Energy Fuels (U.S.)*. Advancing centralized fleets using natural gas/CNG.
FGP:LON – *FirstGroup plc (U.K.)*. Public transportation; in buses, rail and logistics.
HHFA:FRA – *Hamburger Hafen und Logistik AG (Germany)*. Better transport logistics.
LOGN3:SAO – *Log-In Logistca Intermodal SA (Brazil)*. Intermodal cargo logistics.
MAERSKB – *Maersk A/S (Denmark)*. Ships as one of most efficient transport modalities.
MRTN – *Marten Transport (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.

Transport Innovation. 8 stocks. 25% Sector weight; stocks @3.12% each.
ALO:EPA – *Alstom SA (France)*. More-efficient transport infrastructure, high speed TGV.
BG:LON – *BG Group (U.K.)*. Natural gas, for CNG, LNG used as transportation fuels.
FSYS – *Fuel System Solutions (U.S.)*. Enabling natural gas, alternate fuels in transport.
LSTR – *Landstar (U.S.)*. Advanced logistics, information technology in hauling goods.
MXWL – *Maxwell (U.S.)*. Ultracapacitors, rapid energy discharge/storage useful for EVs.
RS – *Reliance Steel & Aluminum (U.S.)*. Aluminum, used to lighten modern vehicles.
SQM – *Sociedad de Chile (Chile)*. Lithium, for electric & plug-in hybrid vehicle batteries.
WBC – *Wabco (Belgium)*. Control systems, better electronic automation in vehicles.

Appendix IV: Q3 2009 Rebalance for independent: WilderHill Progressive Energy Index (for improving the efficiency & reducing CO2 from browner dominant energy portrait of today).

Sectors & Stock Weightings: WilderHill Progressive Energy Index (WHPRO) for start of Q3 2009. 46 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 – 26% Sector Weight (8 stocks @3.25% 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, 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 – 23% Sector weight (9 stocks @2.55% each)
Eaton, ETN. Hybrids, better electric and fluid power in 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 reinforcement materials.

***Johnson Controls*, JCI. Building control, also in advanced hybrid vehicle systems.**
***McDermott*, MDR. Infrastructure, reducing coal emissions, constructs WtE facilities.**
***Owens Corning*, OC. Materials lightening, building insulation composite materials.**
***Siemens AG*, SI. Conglomerate, highly diversified across energy innovation globally.**
***United Technologies*, UTX. Conglomerate, advances in varied energy applications.**

Better Efficiency – 20% Sector Weight (9 stocks @2.16% each + 1 banded stock)
***Badger Meter*, BMI. Meter reading & control for better power management.**
***Baldor Electric*, BEZ. Better energy-efficiency for advanced technology motors.**
***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, advanced two-way metering & communications.**
***General Cable*, BGC. Power grid, high voltage transmission cable and wire products**
****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 – 16% Sector weight (5 stocks @2.80% each +4 banded stocks)
****A-Power*, APWR. Distributed power generation, micro-grid systems; 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, fuel recycling and management.**
***EnerSys*, ENS. Battery maker, for telecommunications, utilities, motive power.**
****Westport Innovations*, WPRT. Enables vehicles' use of natural gas, other fuels.**
****Exide Technologies*, XIDE. Better lead-acid batteries for motive, traction uses.**

Emission Reduction – 9% Sector Weight (3 stocks @2.33% each +4 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. Emission reduction from coal, also synfuels, reagents, fly ash.**
****Peerless*, PMFG. Pollution reduction, effluent 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 – 6% Sector weight (3 stocks @2.00% each)
***Companhia Energetica de Minas Cemig*, CIG. Brazilian Utility, large hydroelectric.**
***Enersis, S.A.*, ENI. Chile, Argentina, Peru etc. Utility, lower-CO2 large hydroelectric.**
***FPL Group*, FPL. Florida Utility, growth in lower-CO2 nat gas and nuclear, also wind.**

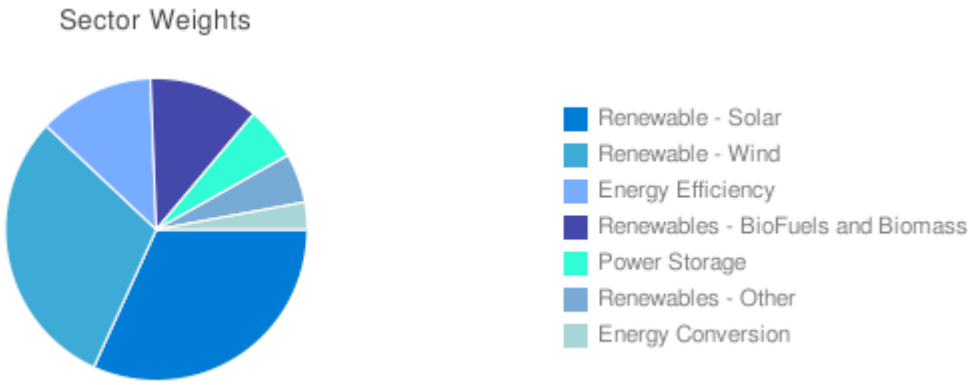
Appendix V: WilderHill New Energy Global Innovation Index (NEX), Data Below are for Q2 only; Note: weights etc here are late Q2 (June 14) about two weeks before Rebalance to start Q3 :

NAME	Country	Currency	Weight on 6/14	Sector
Hansen Transmissions Intl. N.V.	GB	GBP	3.89 %	RWD
Suntech Power Ltd. ADS	US	USD	3.52 %	RSR
Vestas Wind Systems A/S	DK	DKK	3.44 %	RWD
Gamesa Corporacion Tecn. S.A.	ES	EUR	3.17 %	RWD
China High Speed Transmission	HK	HKD	3.03 %	RWD
SMA Solar Technology AG	DE	EUR	2.86 %	RSR
EDF Energies Nouvelles S.A.	FR	EUR	2.59 %	RWD
EDP Renovaveis S/A	PT	EUR	2.49 %	RWD
Acciona S.A.	ES	EUR	2.25 %	RWD
Iberdrola Renovables S.A.	ES	EUR	2.19 %	RWD
SolarWorld AG	DE	EUR	2.11 %	RSR
Abengoa S.A.	ES	EUR	2.03 %	RBB
Cosan S/A Industria e Comercio	BR	BRL	2.00 %	RBB
First Solar Inc.	US	USD	1.99 %	RSR
SunPower Corp. Cl A	US	USD	1.94 %	RSR
Sharp Corp.	JP	JPY	1.93 %	RSR
Johnson Controls Inc.	US	USD	1.93 %	EEF
Renewable Energy Corp. ASA	NO	NOK	1.90 %	RSR
Q-Cells AG	DE	EUR	1.82 %	RSR
EPISTAR Corp.	TW	TWD	1.82 %	EEF
Energy Conversion Devices Inc.	US	USD	1.76 %	RSR
MEMC Electronic Materials Inc.	US	USD	1.70 %	RSR
Yingli Green Energy Ltd. ADS	US	USD	1.49 %	RSR
Itron Inc.	US	USD	1.46 %	EEF
Covanta Holding Corp.	US	USD	1.46 %	RBB
Cree Inc.	US	USD	1.38 %	EEF
GS Yuasa Corp.	JP	JPY	1.36 %	PWS
BYD Co. Ltd.	HK	HKD	1.34 %	PWS
International Rectifier Corp.	US	USD	1.31 %	EEF
Fortum Oyj	FI	EUR	1.30 %	RBB
Novozymes A/S Series B	DK	DKK	1.25 %	RBB
Sechilienne-Sidec	FR	EUR	1.23 %	RBB
Sanyo Electric Co. Ltd.	JP	JPY	1.20 %	PWS
Ormat Technologies Inc.	US	USD	1.19 %	ROH
Gurit Holding AG	CH	CHF	1.11 %	RWD
Verbund AG	AT	EUR	0.99 %	ROH
American Superconductor Corp.	US	USD	0.95 %	RWD
centrotherm photovoltaics AG	DE	EUR	0.93 %	RSR
Infigen Energy	AU	AUD	0.93 %	RWD
Energy Development Corp.	PH	PHP	0.93 %	ROH
LDK Solar Co. Ltd. ADS	US	USD	0.93 %	RSR
JA Solar Holdings Co. Ltd. ADS	US	USD	0.90 %	RSR
Japan Wind Development Ltd.	JP	JPY	0.89 %	RWD
Theolia S.A.	FR	EUR	0.88 %	RWD
Zoltek Cos.	US	USD	0.87 %	RWD
Nordex AG	DE	EUR	0.86 %	RWD
Fuel Systems Solutions Inc.	US	USD	0.86 %	ECV

Contact Energy Ltd.	NZ	NZD	0.86 %	ROH
Umicore S.A.	BE	EUR	0.84 %	PWS
Roth & Rau AG	DE	EUR	0.75 %	RSR
Praj Industries Ltd.	IN	INR	0.75 %	RBB
BKW FMB Energie AG	CH	CHF	0.72 %	ROH
Meidensha Corp.	JP	JPY	0.72 %	EEF
Solaria Energia S.A.	ES	EUR	0.70 %	RSR
Capstone Turbine.	US	USD	0.68 %	ECV
Ballard Power Systems	CA	CAD	0.68 %	ECV
FuelCell Energy.	US	USD	0.68 %	ECV
Xinjiang Goldwind Ltd	CN	CNY	0.67 %	RWD
Evergreen Solar	US	USD	0.66 %	RSR
Sao Martinho S/A Ord	BR	BRL	0.61 %	RBB
Kingspan Group PLC	IE	EUR	0.60 %	EEF
Solar Millennium AG	DE	EUR	0.60 %	RSR
GT Solar International	US	USD	0.58 %	RSR
Gushan Envtl ADS	US	USD	0.58 %	RBB
Takuma Co. Ltd.	JP	JPY	0.55 %	RBB
Baldor Electric	US	USD	0.54 %	EEF
5N Plus	CA	CAD	0.51 %	RSR
EnerNOC	US	USD	0.50 %	EEF
NPC	JP	JPY	0.50 %	RSR
Solon AG fuer Solartechnik	DE	EUR	0.49 %	RSR
PV Crystalox Solar PLC	GB	GBP	0.46 %	RSR
Power Integrations	US	USD	0.43 %	EEF
Green Energy Technology	TW	TWD	0.41 %	RSR
Rockwool Intl A/S Series B	DK	DKK	0.39 %	EEF
Conergy AG	DE	EUR	0.37 %	RSR
Canadian Hydro Developers.	CA	CAD	0.35 %	ROH
Echelon	US	USD	0.34 %	EEF
Climate Exchange PLC	GB	GBP	0.32 %	EEF
Eaga PLC	GB	GBP	0.32 %	EEF
Zhejiang Yankon Ltd. A	CN	CNY	0.31 %	EEF
Maxwell Technologies	US	USD	0.29 %	PWS
Saft Groupe S.A.	FR	EUR	0.27 %	PWS
Ener1	US	USD	0.23 %	PWS
Raser Technologies	US	USD	0.21 %	ROH
Ultralife	US	USD	0.16 %	PWS

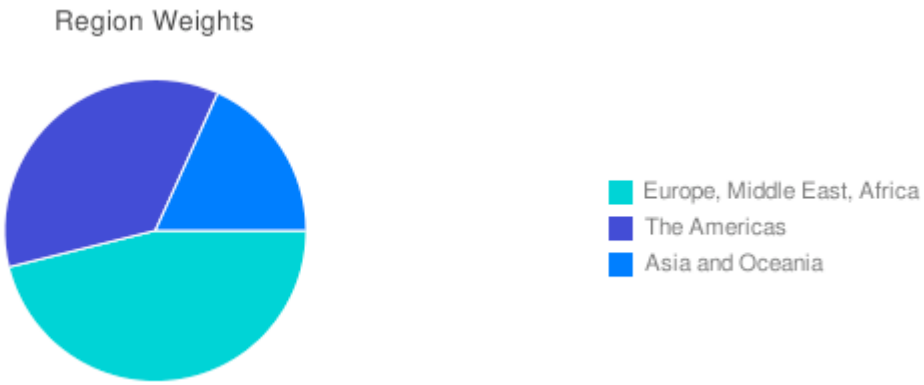
NEX Index Sector Information for June 14, 2009, about two weeks Before Rebalance:		
Key	**Sector**	**Weight**
RSR	Renewable – Solar	31.80 %
RWD	Renewable – Wind	30.20 %
EEF	Energy Efficiency	12.38 %
RBB	Renewables - BioFuels and Biomass	11.76 %
PWS	Power Storage	5.69 %
ROH	Renewables – Other	5.26 %
ECV	Energy Conversion	2.90 %

NEX Sector Weights in Q2 on June 14, 2009, about two weeks Before Rebalance:



NEX Region Information, on June 14, 2009	Weight
Europe, Middle East, Africa	46.12 %
The Americas	35.68 %
Asia & Oceania	18.20 %

NEX Sector Regions in Q2 on June 14, 2009, about two weeks Before Rebalance:



Appendix VI: WilderHill New Energy Global Innovation Index (NEX), Rebalance for start of Q3 2009.

NEX Index Components to start Q3 2009. 88 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

Company Name	Country	Exchange	Ticker	Weight	Sector
Gamesa Corporacion Tecnologica S.A.	Spain	Madrid Stock Exchange	GAM	2.62%	RWD
Vestas Wind Systems A/S	Denmark	Copenhagen Stock Exchange	VWS	2.62%	RWD
American Superconductor Corp.	United States	NASDAQ NMS	AMSC	2.62%	RWD
EDF Energies Nouvelles S.A.	France	Paris Stock Exchange	EEN	2.62%	RWD
Iberdrola Renovables S.A.	Spain	Madrid Stock Exchange	IBR	2.62%	RWD
China High Speed Transmission	Hong Kong	Hong Kong Stock Exchange	0658	2.62%	RWD
Acciona S.A.	Spain	Madrid Stock Exchange	ANA	2.62%	RWD
Nordex AG	Germany	XETRA	NDX1	2.62%	RWD
Hansen Transmissions International N.V.	United Kingdom	London Stock Exchange	HSN	2.62%	RWD
EDP Renovaveis S/A	Portugal	Lisbon Stock Exchange	EDPR	2.62%	RWD
SolarWorld AG	Germany	XETRA	SWV	1.68%	RSR
Sharp Corp.	Japan	Tokyo Stock Exchange	6753	1.68%	RSR
Renewable Energy Corp. ASA	Norway	Oslo Stock Exchange	REC	1.68%	RSR
Q-Cells S.E.	Germany	XETRA	QCE	1.68%	RSR
Centrotherm photovoltaics AG	Germany	XETRA	CTN	1.68%	RSR
SMA Solar Technology AG	Germany	XETRA	S92	1.68%	RSR
Energy Conversion Devices Inc.	United States	NASDAQ NMS	ENER	1.68%	RSR
First Solar Inc.	United States	NASDAQ NMS	FSLR	1.68%	RSR
SunPower Corp. Cl A	United States	NASDAQ NMS	SPWRA	1.68%	RSR
Suntech Power Holdings Co. Ltd. ADS	United States	New York Stock Exchange	STP	1.68%	RSR
LDK Solar Co. Ltd. ADS	United States	New York Stock Exchange	LDK	1.68%	RSR
Yingli Green Energy Holding Co. Ltd. ADS	United States	New York Stock Exchange	YGE	1.68%	RSR
GT Solar International Inc.	United States	NASDAQ NMS	SOLR	1.68%	RSR
MEMC Electronic Materials Inc.	United States	New York Stock Exchange	WFR	1.68%	RSR
Novozymes A/S Series B	Denmark	Copenhagen Stock Exchange	NZYM-B	1.51%	RBB
Fortum Oyj	Finland	Helsinki Stock Exchange	FUM1V	1.51%	RBB
Sechilienne-Sidec	France	Paris Stock Exchange	SECH	1.51%	RBB
Abengoa S.A.	Spain	Madrid Stock Exchange	ABG	1.51%	RBB
Cosan S/A Industria e Comercio	Brazil	Sao Paulo Stock Exchange	CSAN3	1.51%	RBB
Covanta Holding Corp.	United States	New York Stock Exchange	CVA	1.51%	RBB
Kingspan Group PLC	Ireland	Dublin Stock Exchange	KSP	1.44%	EEF
EPISTAR Corp.	Taiwan	Taiwan Stock Exchange	2448	1.44%	EEF
Baldor Electric Co.	United States	New York Stock Exchange	BEZ	1.44%	EEF
Cree Inc.	United States	NASDAQ NMS	CREE	1.44%	EEF
International Rectifier Corp.	United States	New York Stock Exchange	IRF	1.44%	EEF
Itron Inc.	United States	NASDAQ NMS	ITRI	1.44%	EEF
Johnson Controls Inc.	United States	New York Stock Exchange	JCI	1.44%	EEF
Contact Energy Ltd.	New Zealand	New Zealand Stock Exchange	CEN	1.22%	ROH
Energy Development Corp.	Philippines	Phillippine Stock Exchange	EDC	1.22%	ROH
Ormat Technologies Inc.	United States	New York Stock Exchange	ORA	1.22%	ROH
Verbund AG	Austria	Vienna Stock Exchange	VER	1.22%	ROH
BKW FMB Energie AG	Switzerland	Zurich Stock Exchange	BKWN	1.22%	ROH
Sanyo Electric Co. Ltd.	Japan	Tokyo Stock Exchange	6764	1.05%	PWS
Umicore S.A.	Belgium	Brussels Stock Exchange	UMI	1.05%	PWS
BYD Co. Ltd.	Hong Kong	Hong Kong Stock Exchange	1211	1.05%	PWS
GS Yuasa Corp.	Japan	Tokyo Stock Exchange	6674	1.05%	PWS
Gurit Holding AG	Switzerland	Zurich Stock Exchange	GUR	0.75%	RWD
Japan Wind Development Co. Ltd.	Japan	Tokyo Stock Exchange	2766	0.75%	RWD
Theolia S.A.	France	Paris Stock Exchange	TEO	0.75%	RWD
Infigen Energy	Australia	Australian Stock Exchange	IFN	0.75%	RWD
Zoltek Cos.	United States	NASDAQ NMS	ZOLT	0.75%	RWD
Broadwind Energy Inc.	United States	NASDAQ NMS	BWEN	0.75%	RWD
Xinjiang Goldwind Science & Tech.	China	Shenzhen Stock Exchange	002202	0.75%	RWD
FuelCell Energy Inc.	United States	NASDAQ NMS	FCEL	0.65%	ECV
Ballard Power Systems Inc.	Canada	Toronto Stock Exchange	TBLD	0.65%	ECV
Capstone Turbine Corp.	United States	NASDAQ NMS	CPST	0.65%	ECV

Fuel Systems Solutions Inc.	United States	NASDAQ NMS	FSYS	0.65%	ECV
Conergy AG	Germany	XETRA	CGY	0.48%	RSR
Green Energy Technology Inc.	Taiwan	Taiwan Stock Exchange	3519	0.48%	RSR
Solon SE	Germany	XETRA	SOO1	0.48%	RSR
Solar Millennium AG	Germany	XETRA	S2M	0.48%	RSR
Solaria Energia y Medio Ambiente S.A.	Spain	Madrid Stock Exchange	SLR	0.48%	RSR
PV Crystalox Solar PLC	United Kingdom	London Stock Exchange	PVCS	0.48%	RSR
Evergreen Solar Inc.	United States	NASDAQ NMS	ESLR	0.48%	RSR
JA Solar Holdings Co. Ltd. ADS	United States	NASDAQ NMS	JASO	0.48%	RSR
Phoenix Solar AG	Germany	XETRA	PS4	0.48%	RSR
5N Plus Inc.	Canada	Toronto Stock Exchange	VNP	0.48%	RSR
Roth & Rau AG	Germany	XETRA	R8R	0.48%	RSR
NPC Inc.	Japan	Tokyo Stock Exchange	6255	0.48%	RSR
Praj Industries Ltd.	India	Bombay Stock Exchange	522205	0.43%	RBB
Takuma Co. Ltd.	Japan	Tokyo Stock Exchange	6013	0.43%	RBB
Gushan Environmental Energy Ltd. ADS	United States	New York Stock Exchange	GU	0.43%	RBB
Sao Martinho S/A Ord	Brazil	Sao Paulo Stock Exchange	SMTO3	0.43%	RBB
Zhejiang Yankon Group Co. Ltd. A	China	Shanghai Stock Exchange	600261	0.41%	EEF
Eaga PLC	United Kingdom	London Stock Exchange	EAGA	0.41%	EEF
Rockwool International A/S Series B	Denmark	Copenhagen Stock Exchange	ROCK-B	0.41%	EEF
Meidensha Corp.	Japan	Tokyo Stock Exchange	6508	0.41%	EEF
Climate Exchange PLC	United Kingdom	London Stock Exchange	CLE	0.41%	EEF
Echelon Corp.	United States	NASDAQ NMS	ELON	0.41%	EEF
Power Integrations Inc.	United States	NASDAQ NMS	POWI	0.41%	EEF
EnerNOC Inc.	United States	NASDAQ NMS	ENOC	0.41%	EEF
Universal Display Corp.	United States	NASDAQ NMS	PANL	0.41%	EEF
Canadian Hydro Developers Inc.	Canada	Toronto Stock Exchange	KHD	0.35%	ROH
Raser Technologies Inc.	United States	New York Stock Exchange	RZ	0.35%	ROH
Saft Groupe S.A.	France	Paris Stock Exchange	SAFT	0.30%	PWS
Maxwell Technologies Inc.	United States	NASDAQ NMS	MXWL	0.30%	PWS
Ener1 Inc.	United States	NASDAQ NMS	HEV	0.30%	PWS
Ultralife Corp.	United States	NASDAQ NMS	ULBI	0.30%	PWS

3 Additions

United States	Universal Display Corp.	PANL
Germany	Phoenix Solar AG	PS4
United States	Broadwind Energy Inc.	BWEN

0 Removals

Sector Information

Key	Sectors	Sector Weights for Q3 2009
ECV	Energy Conversion	2.59%
EEF	Energy Efficiency	13.77%
PWS	Power Storage	5.38%
RBB	Renewables - Biofuels & Biomass	10.76%
ROH	Renewables - Other	6.81%
RSR	Renewable - Solar	29.24%
RWD	Renewable - Wind	31.45%

*NEX Sector Weights are based on a regularly-performed survey of market capitalizations of companies that are active in New Energy and that are quoted on major exchanges. The results are adjusted for the degree of New Energy Activity of each of the companies. As of Q2 2009, this survey took into account more than 400 companies. This survey is performed jointly by New Energy Finance and First Energy Research.

For more on dynamic NEX Index components and weights, see also, http://www.nexindex.com/Constituents_And_Weightings.php#qStart