



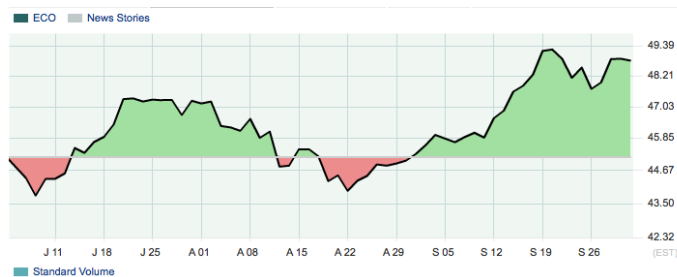
Q3 2017 Quarterly Report: WilderHill Clean Energy Index[®], Sept. 30, 2017

For 3rd Quarter 2017 the Clean Energy Index[®] (ECO) began near 45 and ended near 49 for a Quarterly gain of roughly +8%, while ECO in 2017 is also up now by +28% year to date (YTD); such increases are likely not sustainable and are much more than broader market indices. Look farther back say over some 4 years, from the start of 2014 and clean energy's theme & so the ECO Index[®] first gained in 2014 but then fell and didn't re-test highs that year with declines only broken by an upturn late 2015; clean energy fell Q1/Q2 2016, went sideways Q3/Q4 and has risen (so far) 2017 to Q3 - for a clean energy theme that can drop very hard (or rise) at times while carrying much risk. Yet it must also be said 'dirty' fossil fuels have fallen far harder over say the last 5 years than ECO. Oil, coal & natural gas all have dropped *much* farther than clean energy for instance over these past five years.

Quite different is the Progressive Energy Index[®] (WHPRO) that generally excludes solar, wind & renewables: the differing WHPRO theme is instead about reducing CO₂ & pollutants from - and getting greater efficiencies in fossil fuels and dominant energy today. Last year WHPRO gained strongly in 2016 going up near +40% over a year when ECO declined; in the more recent 1st - 3rd Quarters of 2017, however, it's been ECO that did 'better'. A result again is that WHPRO can often move very unlike the ECO theme (that 'can and does at times drop like a rock'); meanwhile WHPRO is different too from fossil fuel indexes.

For WilderHill[®] New Energy Global Innovation Index (NEX) capturing new energy *worldwide* mostly outside the U.S., it slightly 'underperformed' ECO early in 2017 - and by Q3 often was nearer. Over say the last 5 years however we observe NEX has done 'best' of the three WilderHill Indexes up some +60%, while ECO is up near +10%, Progressive is about nil this period. Yet despite ECO only modestly up there - the fossil fuels are down sizably last five years as will be seen in Charts below with big declines of some -30% to -70%.

In other unrelated matters during Q3, [a brief OpEd](#) co-authored by 2 members of the ECO Advisory Committee appeared in an online Yale publication reflecting some personal views on climate risk & possible sea level rise. In a minor administrative point the NEX is now a Partnership of 2 entities starting Q4 2017: Josh Landess of First Energy Research, & Dr. Rob Wilder of WilderHill - for jointly WilderHill New Energy Finance (WHNEF) which owns NEX. Returning to clean energy's theme, here next is a Chart for ECO Q3 showing some ongoing up momentum again in 3rd Quarter. Doubtless however strong gains seen so far in 2017 very easily could go into reverse ahead, if recent bullishness here becomes pessimism:

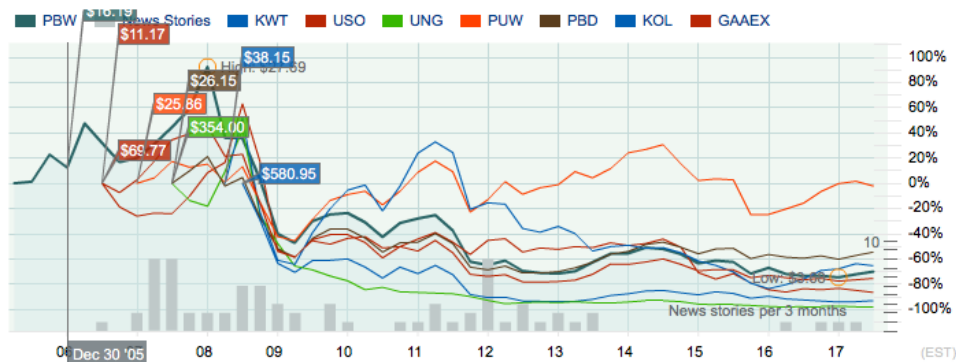


Source: bigcharts.com

For a longer period we step-back as usual for what is now roughly ~10 years from about 2006 to mid-2017, in a chart below. Included are fossil fuels and most dramatic is Natural Gas (green) crashing down by ~90%! So we see once again starting from lowest at bottom the **Natural Gas tracker, green**. Just above it is a tracker for **Solar, blue** also far down - although rising of late. 3rd up from bottom is an **Oil tracker, red** that's also fallen hard. Hence natural gas, oil, and solar are all well down, strikingly over the past ~10 years.

Above those as seen several years now are 3 other clumping themes: first is an **active fund in dark red for alternative energy** (showing a long while it's pretty hard for an active-fund to beat an Index); just above that is **ECO Index via an independent tracker, bold**: it along with 2 others are well down yet all 3 are 'doing better' (down less) than **Natural Gas, Oil, and Solar**. Next up here is Coal that once had been badly trailing; its tracker again in **blue**, rose strongly however in 2016+2017 on a new Administration & greater coal exports despite coal facing some unfavorable economics domestically. Among all these 6 themes then, coal here is 'slightly best of late' - but that's only after its very big earlier falls.

Above those 6 after some gap is global **NEX via tracker, brown**. Then well above them all, here at 'top' is **WilderHill Progressive (WHPRO via PUW, orange)** for lower CO2 & improving efficiency in major energy today. It ends here near nil, only theme near 'up' if starting so early - note however that most trackers don't begin so far back as ~10 years ago:

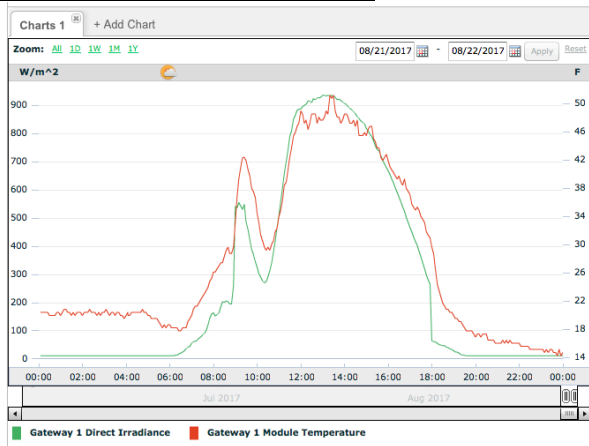


Source: bigcharts.com

In these energy themes above all (but for Progressive) are *far down* due to an energy crash. Yet there's many unique stories. Take solar: installations growth has been dramatic here, along with a crash in pricing power and awful profit margins as manufacturing capacity has exploded in Asia. Now a question is how the U.S. may erect trade barriers as a result of a unanimous (4-0) Sec. 201 finding by the U.S. International Trade Commission of ongoing solar product dumping. Such recent finding is causing some solar stocks to decline globally. Hence a coming remedy recommendation is causing freshening attention to this solar sub-sector, in anticipation of a new round of trade barriers being erected in the U.S. That said internal solar demand within China has become so strong, impacts may be muted.

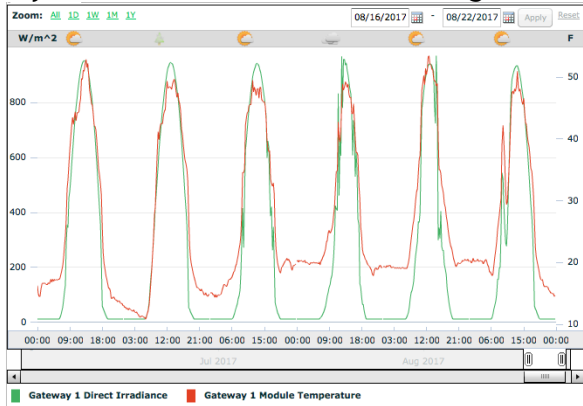
Next and unrelated, but also in Q3 was a Solar Eclipse on August 21st that shined a light on how future eclipses may impact Solar given a dip in output. Measured here that eclipse peaked 10:10 AM Pacific as seen in 2 charts below measuring our own rooftop solar PV - for a past 1 day and a past week. The remarkable drop in **Solar Irradiance** (sunshine) is shown at 9:30 am - nadir at 10 am, then rebounding quickly. Similarly **Panel Temperatures** (in C) are seen to drop too but here in somewhat more lagging fashion - afterwards resuming again swiftly a normal morning rise this bright and clear sky on the day of Eclipse:

For the 1 Day of the Eclipse:



5 days, with Eclipse on the Last Day:

This very same remarkable drop can be seen rather prominently as happening on the last day in this Chart for the week in August 2017:



 Lastly back on point and returning to Clean Energy / Progressive themes for ECO & WHPRO - looking here say, late in Q3 we see here how constituents in ECO & WHPRO fared over say, their past 52-weeks. Here's next a page for ECO components - and then for WHPRO.

Consider on the next page ECO individual component ranges a past Year for relative Lows, Highs or somewhere in between up to September 9, 2017; we see Top Performers for ECO are in very diverse themes, including in fuel cells (BLDP rising too on new fuel cell design needing less precious metals), in the lithium mining needed for batteries (SQM), in solar (JASO), in Organic LEDs / lighting (OLED), and renewables Utility-scale (GLBL). Likewise WHPRO's top names are also diverse on the following page, there in power transmission, in lithium, in efficiency / heating, in electricity generation, and building efficiency.

"Worst" performers in ECO near 52-week lows were also diverse, and in less-polluting water-based battery recycling (AQMS, though after a steep run-up), in LEDs/ lighting (LYTS), in electrical transmission (MYRG), in global solar parks (SKYS), and in thin film manufacturing (VECO). WHPRO's lows by contrast, were Not at all diverse, clumping around natural gas where declining global prices have hit producers very hard. But first, here's ECO:

ECO Index Highs and Lows of Individual Components Past 52 weeks, to Sept. 9, 2017:

<input type="checkbox"/> AEIS	43.33	86.25
<input type="checkbox"/> APD	129.00	150.45
<input type="checkbox"/> AMRC	4.60	7.85
<input type="checkbox"/> AMSC	2.89	8.55
<input type="checkbox"/> ABY	16.55	22.87
<input type="checkbox"/> AQMS	5.43	22.75
<input type="checkbox"/> BGC	11.70	20.80
<input type="checkbox"/> BLDP	1.61	3.55
<input type="checkbox"/> CREE	20.50	31.64
<input type="checkbox"/> SQM	24.75	50.55
<input type="checkbox"/> CSIQ	10.25	18.12
<input type="checkbox"/> DQ	18.01	30.80
<input type="checkbox"/> FCEL	1.22	1.63
<input type="checkbox"/> FSLR	25.56	50.21
<input type="checkbox"/> THRM	26.60	40.80
<input type="checkbox"/> HQCL	6.09	12.22
<input type="checkbox"/> HTM	3.59	4.94
<input type="checkbox"/> HXL	41.03	55.91
<input type="checkbox"/> HYGS	3.90	11.25
<input type="checkbox"/> ITRI	51.55	75.60
<input type="checkbox"/> JASO	6.05	7.84
<input type="checkbox"/> LYTS	4.99	11.55
<input type="checkbox"/> MXWL	4.39	6.48

<input type="checkbox"/> MYRG	23.00	43.77
<input type="checkbox"/> OLED	47.88	133.50
<input type="checkbox"/> ORA	45.30	61.49
<input type="checkbox"/> PEGI	18.68	25.60
<input type="checkbox"/> PLUG	0.83	2.70
<input type="checkbox"/> PWR	24.49	38.82
<input type="checkbox"/> REGI	7.91	13.39
<input type="checkbox"/> SEDG	11.35	28.80
<input type="checkbox"/> SKYS	1.00	3.62
<input type="checkbox"/> SPWR	5.84	11.70
<input type="checkbox"/> SSNI	9.68	15.40
<input type="checkbox"/> RUN	4.15	7.78
<input type="checkbox"/> TERP	10.99	14.69
<input type="checkbox"/> GLBL	3.25	5.10
<input type="checkbox"/> TSLA	178.19	386.99
<input type="checkbox"/> TPIC	13.27	23.30
<input type="checkbox"/> VECO	18.30	34.38

WHPRO Index Highs / Lows of Individual Components Past 52 weeks to Sept. 9, 2017 (*CPN, HASI not displayed below):

<input type="checkbox"/> AIMC	38.80	46.65
<input type="checkbox"/> ALB	75.11	123.48
<input type="checkbox"/> ANDE	30.80	44.90
<input type="checkbox"/> AOS	43.66	57.97
<input type="checkbox"/> APOG	40.03	58.30
<input type="checkbox"/> AGR	35.42	49.04
<input type="checkbox"/> AYI	157.33	269.38
<input type="checkbox"/> GTLS	27.01	40.87
<input type="checkbox"/> CECE	6.94	14.88
<input type="checkbox"/> CHK	3.55	8.20
<input type="checkbox"/> CIG	2.06	3.84
<input type="checkbox"/> CLNE	2.18	4.63
<input type="checkbox"/> GLW	22.14	32.17
<input type="checkbox"/> CZZ	5.63	9.50
<input type="checkbox"/> CVA	13.00	16.50
<input type="checkbox"/> ETN	59.07	81.63
<input type="checkbox"/> ENS	61.33	84.74
<input type="checkbox"/> EMR	49.22	64.36
<input type="checkbox"/> ESE	42.95	63.80
<input type="checkbox"/> FMC	44.40	88.19
<input type="checkbox"/> GPRE	16.35	29.85

<input type="checkbox"/> GLNG	19.85	29.18
<input type="checkbox"/> HCCI	11.85	21.05
<input type="checkbox"/> HDSN	5.55	10.40
<input type="checkbox"/> KNDI	3.40	6.50
<input type="checkbox"/> LXFR	9.28	13.49
<input type="checkbox"/> LDL	44.14	64.85
<input type="checkbox"/> MTZ	26.75	49.50
<input type="checkbox"/> MDR	4.41	8.33
<input type="checkbox"/> MEOH	28.77	53.35
<input type="checkbox"/> NYLD	13.98	19.10
<input type="checkbox"/> OC	46.45	76.84
<input type="checkbox"/> PEIX	4.15	10.95
<input type="checkbox"/> RRC	16.00	43.60
<input type="checkbox"/> RBC	56.45	87.50
<input type="checkbox"/> REX	76.10	107.87
<input type="checkbox"/> SWN	5.00	15.42
<input type="checkbox"/> TTM	28.97	43.13
<input type="checkbox"/> TEN	51.09	70.96
<input type="checkbox"/> WBC	96.10	144.98
<input type="checkbox"/> WWD	57.09	72.97

We see above WHPRO top performers are in diverse areas of: power transmission (AIMC), lithium (ALB), energy efficiency / heating (AOS), electricity generation (AGR; these 1st 4 all 'A's), and in building energy efficiency. Much less-diverse bottom performers included in biofuels (ANDE), natural gas (CHK), natural gas as a vehicle fuel (CLNE), liquefied natural gas (GLNG), filtration (LDL, though was much more-broadly rising), and again in natural gas (both RRC & SWN).

Conclusion:

For 3rd Quarter 2017 the Clean Energy Index[®] (ECO) began near 45 and ended near 49 for a Quarterly gain of roughly +8%, with ECO in 2017 also up now by +28% year to date (YTD); such increases are likely not sustainable and are much more than broader market indices. Look farther back say over some 4 years, from the start of 2014 and clean energy's theme & so the ECO Index[®] first gained in 2014 but then fell and didn't re-test highs that year with declines only broken by an upturn late 2015; clean energy fell Q1/Q2 2016, went sideways Q3/Q4 and has risen (so far) 2017 to Q3 - for a clean energy theme that can drop very hard (or rise) at times while carrying much risk. Yet it must also be said 'dirty' fossil fuels have fallen far harder over say the last 5 years than ECO. Oil, coal & natural gas all have dropped *much* farther than clean energy for instance over these past five years.

Progressive WHPRO is mainly sideways so far YTD. NEX capturing new energy *worldwide* 'underperformed' ECO for this YTD - yet it well outperformed WHPRO. However over say the last 5 years the NEX global basket has done 'best' of the three WilderHill Indexes up near +60%, while ECO is up near +10%, and Progressive nil here. Yet despite ECO & WHPRO being slightly up or even nil this period - the traditional fossil fuels are significantly down the last 5 years as seen with their big declines of some -30% to -70% that period.

Lastly 2 constituents were deleted from ECO to start Q4 2017, GBLB & SSNI, and there were no additions. At the-much-differently themed WilderHill Progressive Energy Index (WHPRO) there was one deletion of CPN to start Q4; there were no additions.

As always we welcome your thoughts and suggestions.

Sincerely,



Dr. Rob Wilder
rwilder@wildershires.com

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Appendix I:

ECO Index (via independent tracker PBW) Descending Weights & Components late-Q3 on 9/13/2017, or about ~2 weeks before rebalance to start Q4 2017. 40 stocks:

<u>Name</u>	<u>HoldingsTicker</u>	<u>Weight</u>
Sociedad Quimica Minera Chile	SQM	4.132
Daqo New Energy Corp ADR	DQ	3.751
JA Solar Holdings Co Ltd ADR	JASO	3.612
First Solar Inc	FSLR	3.352
General Cable Corp	BGC	3.236
Quanta Services Inc	PWR	3.191
Silver Spring Networks Inc	SSNI	3.183
Universal Display Corp	OLED	3.178
Ballard Power Systems Inc	BLDP	3.168
SolarEdge Technologies Inc	SEDG	3.147
TPI Composites Inc	TPIC	3.085
Canadian Solar Inc	CSIQ	2.995
Hexcel Corp	HXL	2.984
Itron Inc	ITRI	2.941
TerraForm Power Inc	TERP	2.902
Ameresco Inc	AMRC	2.879
Hanwha Q CELLS Co Ltd ADR	HQCL	2.854
Air Products & Chemicals Inc	APD	2.728
Advanced Energy Industries Inc	AEIS	2.712
Ormat Technologies Inc	ORA	2.696
Pattern Energy Group Inc	PEGI	2.653
Sunrun Inc	RUN	2.642
SunPower Corp	SPWR	2.641
Maxwell Technologies Inc	MXWL	2.639
Renewable Energy Group Inc	REGI	2.607
Tesla Inc	TSLA	2.545
Atlantica Yield plc	ABY	2.488
TerraForm Global Inc	GLBL	2.471
MYR Group Inc	MYRG	2.457
Plug Power Inc	PLUG	2.456
Cree Inc	CREE	2.408
Gentherm Inc	THRM	2.066
Veeco Instruments Inc	VECO	1.772
LSI Industries Inc	LYTS	1.614
Aqua Metals Inc	AQMS	1.465

FuelCell Energy Inc	FCEL	0.556
Sky Solar Holdings Ltd ADR	SKYS	0.515
US Geothermal Inc	HTM	0.465
American Superconductor	AMSC	0.412
Hydrogenics Corp	HYGS	0.401

ECO Index Year to Date to September 15, 2017



Source: Bigcharts.com

Appendix II, ECO Index for Start of the New Quarter:

NDEX (ECO) SECTOR & STOCK WEIGHTS FOR START OF Q4 2017. 38 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 - 31% weight (9 stocks @3.38% each; plus 1 *banded)

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

Daqo New Energy, DQ. Solar, polysilicon/wafer manufacturer; China-based.

First Solar, FSLR. Thin film solar, CdTe a low-cost alternate to polysilicon.

Hanwha Q Cells, HQCL. Solar, integrated from poly through modules.

Hexcel, HXL. Light composites, in wind blades & spars, aerospace, vehicles.

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

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

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

TPI Composites, TPIC. Wind Blades; also light-weighting for transportation.

**U.S. Geothermal*, HTM. Geothermal, operating & development-stage sites.

Power Delivery & Conservation - 20% sector weight (6 stocks @3.25%; +1 *banded)

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

**American Superconductor*, AMSC. Wind, grid conditioning; superconductors.

General Cable, BGC. Power grid innovation, includes high-voltage offshore wind.

Itron, ITRI. Meters, utility energy monitoring, measurement & management.

MYR Group, MYRG. Transmission and Distribution, includes solar & wind farms.

Quanta Services, PWR. Infrastructure, modernizing grid & power transmission.

Universal Display, OLED. Organic light emitting diodes, efficient displays.

Energy Conversion - 23% sector weight (7 stocks @3.14% each; +2 *banded)

Advanced Energy, AEIS. Power conditioning: inverters, thin film deposition.

Ballard Power, BLDP. Mid-size fuel cells; R&D, PEM FCs as in transportation.

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

**FuelCell Energy*, FCEL. Large fuel cells, high-operating temps, multiple-fuels.

Gentherm, THRM. Thermoelectrics, waste heat to energy, power harvesting.

**LSI Industries*, LYTS. Lighting, LEDs, is vertically integrated U.S. manufacturer.

Plug Power, PLUG. Small fuel cells, for e.g. forklifts; drop in replacements.

SolarEdge Technologies, SEDG. Inverters: makes solar optimizers, inverters.

Veeco, VECO. Thin film equipment, for LEDs, energy efficient electronics.

Greener Utilities - 13% sector weight (4 stocks @3.12% each; +1 *banded stock)

Atlantica Yield, ABY. Yieldco, Contracted renewables assets, also transmission.

Pattern Energy, PEGI. Wind farms, solar may be added too for GW sized PPAs.

**Sky Solar*, SKYS. Solar farms, creating & operating utility-scale projects.

Sunrun, RUN. Residential solar systems, lease, PPA or purchase rooftop PV.

TerraForm Power, TERP. Owns operates solar/wind, developed nations, yieldco.

Energy Storage - 7% sector weight (2 stocks @3.00% each; + 2 banded stock)

**Aqua Metals*, AQMS. Recycling lead acid batteries, eliminating toxic wastes.

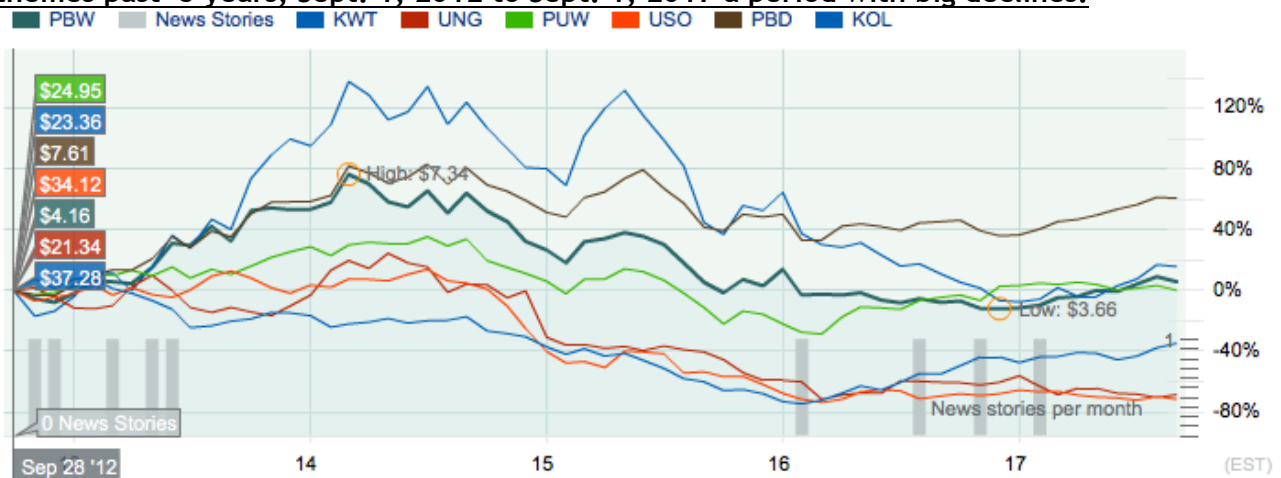
**Maxwell*, MXWL. Ultracapacitors, an alternative to batteries as in hybrids.

Chemical & Mining Co. of Chile, SQM. Lithium, energy storage, large producer.

Tesla Motors, TSLA. Electric vehicles, solar; purer-play in EVs & energy storage.

Cleaner Fuels - 6% sector weight (2 stocks @2.75% each; +1 *banded stock)
Air Products & Chemicals, APD. Hydrogen, is a supplier of industrial gases.
 *Hydrogenics, HYGS. Hydrogen, fuel and electrolysis for fuel cells, H2 storage.
Renewable Energy Group, REGI. Biodiesel, natural fats, oils, grease to biofuels.

ECO (seen via independent tracker in bold) plus other ‘tough times’ clean & fossil fuel themes past 5 years, Sept. 1, 2012 to Sept. 1, 2017 a period with big declines:



Source: Bigcharts.com

As seen by ECO (via tracker bold) plus several other themes above the last 5 years have been very rough for many themes across clean, alternative & traditional fossil fuel energy. For example despite ECO falling hard and ending this period just positive, this clean energy theme still is far above an oil tracker orange, and Natural Gas tracker burnt red, both at bottom and down near -70%, plus a tracker for Coal (in blue) down near -30%.

So clean energy is only up around +8%; yet fossil fuels are down around -30 to -70%.

A tracker for Solar, also blue, once at top fell - then has risen to moderately over ECO. And just below ECO is an independent WHPRO tracker, in green, here sideways since 2016.

Last 5 years were remarkably tough across many energy themes, including the fossil fuels oil, coal & natural gas! But Not All Energy themes suffered so harshly...

Of some note for finishing positive with ‘much better’ results here is the global new energy NEX Index with its tracker in brown at very top here for this timeframe. The NEX is here up near +60% for past 5 years. It’s interesting too to see Global clean / new energy as captured by the NEX did relatively quite ‘better’ than ECO this period since both are in clean/new energy, though the former’s theme is mainly outside of the U.S.

Appendix III: WHPRO Index via independent tracker PUW; component weights as seen in late-Q3 2017 on 9/13/2017 or about ~2 weeks before the rebalance to start Q4 2017. 43 Stocks:

Name	Symbol	Weight
Cosan Ltd	CZZ	3.634
Methanex Corp	MEOH	3.523
FMC Corp	FMC	3.15
Albemarle Corp	ALB	3.116
Cia Energetica de Minas	CIG	3.083
Altra Industrial Motion Corp	AIMC	3.05
WABCO Holdings Inc	WBC	3.005
Owens Corning	OC	2.95
Chart Industries Inc	GTLS	2.886
Covanta Holding Corp	CVA	2.768
Southwestern Energy Co	SWN	2.764
Green Plains Inc	GPRE	2.722
Calpine Corp	CPN	2.705
Avangrid Inc	AGR	2.672
Andersons Inc/The	ANDE	2.642
Emerson Electric Co	EMR	2.629
Woodward Inc	WWD	2.622
Acuity Brands Inc	AYI	2.618
NRG Yield Inc	NYLD	2.609
REX American Resources	REX	2.608
AO Smith Corp	AOS	2.595
Eaton Corp PLC	ETN	2.551
Tenneco Inc	TEN	2.544
MasTec Inc	MTZ	2.512
Golar LNG Ltd	GLNG	2.50
Corning Inc	GLW	2.492
Lydall Inc	LDL	2.477
McDermott International Inc	MDR	2.472
Hannon Armstrong	HASI	2.451
Regal Beloit Corp	RBC	2.444
EnerSys	ENS	2.432
ESCO Technologies Inc	ESE	2.359
Tata Motors Ltd ADR	TTM	2.316
Chesapeake Energy Corp	CHK	2.267
Range Resources Corp	RRC	2.214
Apogee Enterprises Inc	APOG	2.111

Heritage-Crystal Clean Inc	HCCI	0.648
Hudson Technologies Inc	HDSN	0.53
Luxfer Holdings PLC ADR	LXFR	0.514
Kandi Technologies Group Inc	KNDI	0.51
Clean Energy Fuels Corp	CLNE	0.471
CECO Environmental Corp	CECE	0.421
Pacific Ethanol Inc	PEIX	0.413

WHPRO Index Year to Date to September 15, 2017



Source: Bigcharts.com

Appendix IV: WHPRO Index for the start of the New Quarter.

Sectors & Stock Weightings: WilderHill Progressive Energy Index (WHPRO) for start of Q4 2017. 42 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 - 24% Sector Weight (8 stocks @2.87% each +2 *banded)

Andersons, ANDE. Ethanol producer, corn-based; rail group is in fuel transport.
Chesapeake Energy, CHK. Natural gas, one of larger U.S. independent producers.
**Clean Energy Fuels*, CLNE. Natural gas fuel integration; for use in fleet vehicles.
Cosan, CZZ. Biofuels, Brazil-based using sugarcane feedstock, ethanol exporter.
Green Plains Energy, GPRE. Biofuel, ethanol; using U.S. domestic feedstock.
Methanex, MEOH. Methanol, liquid fuel may be derived from fossil fuels or organics.
**Pacific Ethanol*, PEIX. Biofuels, major U.S. producer of lower-carbon fuels.
Range Resources, RRC. Natural gas, produces in Appalachian & Gulf Coast regions.
Rex American, REX. Biofuels, with subsidiaries is a major U.S. ethanol producer.
Southwestern Energy, SWN. Natural gas, U.S. producer, also midstream services.

Conversion & Storage - 24% Sector weight (9 stocks @2.66% each)

Albermarle, ALB. Lithium & Lithium Compounds; for energy storage, transportation.
Altra Holdings, AIMC. Mechanical power transmission, electromechanical conversion.
Chart Industries, GTLS. Natural gas, LNG; liquefied gas storage/transport, efficiency.
Covanta Holding, CVA. Incineration, converts waste to energy (WtE); conglomerate.
EnerSys, ENS. Battery maker, for telecommunications, utilities, motive power.
FMC, FMC. Lithium producer for carbonate, metal, expanding hydroxide capacity.
Golar LNG, GLNG. LNG, major independent carrier, gas transport, regasification.
MasTec, MTZ. Engineering & construction, distribution of electricity, natural gas.
Wabco, WBC. Mechatronics, better vehicle mechanical/energy/braking controllers.

Better Efficiency - 18% Sector Weight (7 stocks @2.57% each)

Acuity Brands, AYI. LED lights, OLEDs, and controls for indoor & outdoor lighting.
A.O. Smith, AOS. Energy efficiency, innovations for water heating & monitoring.
Apogee, APOG. Advanced glass, for better efficiency, green building designs.
Emerson Electric, EMR. Broad work in energy efficiency, storage, lately biofuels.
Esco Technologies, ESE. Power grid, advances 2-way metering & communications.
Regal Beloit, RBC. Energy efficient motors, in commercial, industrial, homes etc.
Woodward, WWD. Energy controllers, optimization, industrial turbines in generation.

Emission Reduction - 12% Sector Weight (4 stocks @2.62% each +3 *banded)

**CECO Environmental*, CECE. End-of-pipe emissions controls and pollution reduction.
Corning, GLW. Diverse, activity includes emissions reduction, filters, and catalysts.
**Kandi Technologies*, KNDI. Developing small gasoline and urban electric vehicles.
**Luxfer Holdings PLC*, LXFR. Advanced material, reduced emissions, gaseous storage.
McDermott, MDR. Natural Gas; fewer emissions/CO2 vs. coal; EPCI in LNG facilities.
Tata Motors, TTM. Smaller & 'nano' vehicles, India-based with worldwide sales.
Tenneco, TEN. Automotive end-of-pipe emissions controls, catalytic converters.

New Energy Activity - 12% Sector weight (4 stocks @2.87% each +1 *banded stock).

Eaton, ETN. Hybrids, better electric and fluid power in truck & auto applications.

**Hudson*, HDSN. Refrigerant HFCs reclamation; reduces potent greenhouse gases.
Heritage Crystal Clean, HCCI. Oil re-refining, modern waste reuse and recycling.
Lydall, LDL. Thermal and filtration separation; innovative energy efficiency.
Owens Corning, OC. Materials lightening, building insulation composite materials.

Utility - 10% Sector weight (4 stocks @2.50% each)

Avangrid, AGR. Electricity & Natural Gas, generation, storage, distribution.
Companhia Energetica de Minas Cemig, CIG. Brazil Utility, large hydroelectric.
Hannon Armstrong, HASI. Energy efficiency, capital & finance for infrastructure.
NRG Yield, NYLD. Contracted power generation and thermal, also some renewables.

Chart for the WHPRO Index via an independent tracker bold Past 5 years to Aug. 31, 2017 - versus the ECO Index shown in light blue via an independent tracker for it:



Source: Bigcharts.com

WHPRO Index here in bold last 5 years late 2012 - 2017 as seen via the tracker above. This includes a period of WHPRO rising moderately to Summer 2014 hitting a relative high - dropping strongly to a February 2016 nadir - then rising in 2016 - mainly sideways since. Thus it finishes near nil, while ECO which had gone up farther & dropped more, is here now up near +10% (in past Quarterly Reports WHPRO had finished up farther past 5 years).

Hence the WHPRO theme for less CO2/pollution from fossil fuels can move unlike the ECO basket, blue tracker, that dropped relatively much harder early 2014 through late 2016.

That said all 3 WilderHill Indexes are in late 2017 far below their own previous all-time highs. ECO is much, much lower - having been in 2007 several-fold higher - that crash in some part due to a solar sub-theme having fallen so greatly from its peaks (and as noted the fossil fuels have fallen too). So Charts can differ greatly depending on the starting point. Moreover as always, past movements are not an indication of future performance.

Appendix V: WilderHill New Energy Global Innovation Index (NEX) seen late-Q3 2017 via independent tracker (PBD) on 9/13/17 or ~2 weeks before Rebalance to start Q4 2017. 99 in tracker:

Name	Symbol	Weight
Epistar Corp	2448	2.259
Kingspan Group PLC	KSP	2.068
DONG Energy A/S	DENERG DC	1.983
Caverion Corp	CAV1V FH	1.93
Universal Display Corp	OLED	1.893
Boralex Inc	BLX	1.879
EDP Renovaveis SA	EDPR	1.805
Saeta Yield SA	SAY	1.778
Vestas Wind Systems A/S	VWS DC	1.764
OSRAM Licht AG	OSR	1.763
Itron Inc	ITRI	1.751
China Longyuan Power Group	916	1.749
Acuity Brands Inc	AYI	1.737
GS Yuasa Corp	6674	1.737
Renewables Infrastructure	TRIG LN	1.737
Greencoat UK Wind PLC	UKW LN	1.736
Meidensha Corp	6508	1.73
Huaneng Renewables	958	1.73
Nibe Industrier AB	NIBEB SS	1.728
Pattern Energy Group Inc	PEGI	1.72
NRG Yield Inc	NYLD	1.718
Xinjiang Goldwind Science	2208	1.704
Philips Lighting NV	LIGHT	1.688
TransAlta Renewables Inc	RNW	1.683
Sino-American Silicon	5483	1.672
Nordex SE	NDX1	1.66
SMA Solar Technology AG	S92	1.634
Cree Inc	CREE	1.633
Hannon Armstrong	HASI	1.609
Tesla Inc	TSLA	1.606
BYD Co Ltd	1211	1.58
China High Speed Trans.	658	1.57
FDG Electric Vehicles Ltd	729	1.53
Xinyi Solar Holdings Ltd	968	1.385
First Solar Inc	FSLR	1.371
Tanaka Chemical Corp	4080	1.308
TerraForm Power Inc	TERP	1.294

GCL-Poly Energy Holdings Ltd	3800	1.257
Canadian Solar Inc	CSIQ	1.225
Veeco Instruments Inc	VECO	1.199
Siemens Gamesa Renewable	SGRE	1.18
Panda Green Energy	686	1.18
Superblock PCL	SUPER-R TB	1.138
Atlantica Yield plc	ABY	1.11
Sao Martinho SA	SMT03	1.096
SunPower Corp	SPWR	1.08
Novozymes A/S	NZYMB DC	1.063
Takuma Co Ltd	6013	1.032
Energy Absolute PCL	EA-R TB	0.992
Canvest Environmental	1381	0.952
China Everbright Intl.	257	0.941
Green Plains Inc	GPRE	0.876
Drax Group PLC	DRX LN	0.875
Verbund AG	VER AV	0.837
Innergex Renewable Energy	INE	0.795
Energy Development Corp	EDC	0.765
Mercury NZ Ltd	MCY	0.712
Contact Energy Ltd	CEN	0.694
Ormat Technologies Inc	ORA	0.649
Odelic Co Ltd	6889	0.543
Silver Spring Networks Inc	SSNI	0.539
TPI Composites Inc	TPIC	0.521
Advanced Lithium Electro.	5227	0.516
China Titans Energy Tech.	2188	0.511
Kandi Technologies	KNDI	0.494
Ricardo PLC	RCDO LN	0.491
Ameresco Inc	AMRC	0.487
Credit Suisse Real Est.	GREEN SW	0.477
Ballard Power Systems Inc	BLDP	0.466
Everlight Electronics Co Ltd	2393	0.45
Wasion Group Holdings Ltd	3393	0.444
China Power Clean Energy	735	0.426
Senvion SA	SEN	0.424
SolarEdge Technologies Inc	SEDG	0.423
JA Solar Holdings Co Ltd ADR	JASO	0.422
Maxwell Technologies Inc	MXWL	0.412
REC Silicon ASA	REC	0.388

VERBIO Vereinigte BioEnergie	VBK	0.374
Meyer Burger Technology AG	MBTN SW	0.364
Plug Power Inc	PLUG	0.358
Dialight PLC	DIA LN	0.357
Capital Stage AG	CAP	0.347
GCP Infrastructure Invest.	GCP LN	0.341
Sunrun Inc	RUN	0.337
SPCG PCL	SPCG-R TB	0.331
Neo Solar Power Corp	3576	0.326
Utilitywise PLC	UTW LN	0.319
LSI Industries Inc	LYTS	0.312
West Holdings Corp	1407	0.31
Motech Industries Inc	6244	0.305
Shunfeng International Clean	1165	0.294
Gigasolar Materials Corp	3691	0.29
eRex Co Ltd	9517	0.29
CropEnergies AG	CE2	0.289
China Singyes Solar Tech.	750	0.268
Albioma SA	ABIO FP	0.264
Vivint Solar Inc	VSLR	0.261
Renewable Energy Group Inc	REGI	0.256
Akenerji Elektrik Uretim AS	AKENR TI	0.208

Sample recent Sector Weightings in NEX Index as seen for Q4 2017:

Key	Sectors		
		ECV	0.011
ECV	Energy Conversion	EEF	0.293
EEF	Energy Efficiency	ENS	0.067
ENS	Energy Storage	RBB	0.082
RBB	Renewables - Biofuels & Biomass	ROH	0.046
ROH	Renewables - Other	RSR	0.205
RSR	Renewable - Solar	RWD	0.292
RWD	Renewable - Wind		

http://www.nex-index.com/Constituents_And_Weightings.php

For Component values see, http://www.nex-index.com/Constituents_And_Weightings.php

Appendix VI:**WilderHill New Energy Global Innovation Index (NEX) for start of Q4 2017.****Grouped here generally by NEX Index Sector:**(subject to revision; see also http://www.nexindex.com/Constituents_And_Weightings.php)

<u>Company Name</u>	<u>2017 Q4 NEX Category</u>	<u>Start of Q4 NEX Weight</u>
Tesla Motors Inc	EEF	0.0182
Universal Display Corp	EEF	0.0182
Acuity Brands Inc	EEF	0.0182
OSRAM Licht AG	EEF	0.0182
Philips Lighting NV	EEF	0.0182
Kingspan Group PLC	EEF	0.0182
Itron Inc	EEF	0.0182
Nibe Industrier AB	EEF	0.0182
Cree Inc	EEF	0.0182
Epistar Corp	EEF	0.0182
Veeco Instruments Inc	EEF	0.0182
Hannon Armstrong Sustainable Infra.	EEF	0.0182
Meidensha Corp	EEF	0.0182
Vestas Wind Systems A/S	RWD	0.0181
Siemens Gamesa Renewable Energy SA	RWD	0.0181
DONG Energy A/S	RWD	0.0181
NRG Yield Inc	RWD	0.0181
China Longyuan Power Group Corp Ltd	RWD	0.0181
Huaneng Renewables Corp Ltd	RWD	0.0181
TransAlta Renewables Inc	RWD	0.0181
Xinjiang Goldwind Science & Tech	RWD	0.0181
EDP Renovaveis SA	RWD	0.0181
Pattern Energy Group Inc	RWD	0.0181
Nordex SE	RWD	0.0181
Boralex Inc	RWD	0.0181
China High Speed Transmission Equip.	RWD	0.0181
Saeta Yield SA	RWD	0.0181
Renewables Infrastructure Group	RWD	0.0181
Byd Co Ltd	ENS	0.0175
GS Yuasa Corp	ENS	0.0175
FDG Electric Vehicles Ltd	ENS	0.0175
First Solar Inc	RSR	0.0121
Xinyi Solar Holdings Ltd	RSR	0.0121
SunPower Corp	RSR	0.0121
SolarEdge Technologies Inc	RSR	0.0121
Sino-American Silicon Products Inc	RSR	0.0121
Canadian Solar Inc	RSR	0.0121
GCL-Poly Energy Holdings Ltd	RSR	0.0121
Atlantica Yield plc	RSR	0.0121
Superblock PCL	RSR	0.0121
Meyer Burger Technology AG	RSR	0.0121
SMA Solar Technology AG	RSR	0.0121
TerraForm Power Inc	RSR	0.0121
United Photovoltaics Group Ltd	RSR	0.0121
Novozymes A/S	RBB	0.0097
China Everbright International Ltd	RBB	0.0097
Energy Absolute PCL	RBB	0.0097
Green Plains Inc	RBB	0.0097

Drax Group PLC	RBB	0.0097
Takuma Co Ltd	RBB	0.0097
Canvest Environmental Protection	RBB	0.0097
Ormat Technologies Inc	ROH	0.0078
Contact Energy Ltd	ROH	0.0078
Energy Development Corp	ROH	0.0078
Verbund AG	ROH	0.0078
Mercury NZ Ltd	ROH	0.0078
Innergex Renewable Energy Inc	ROH	0.0078
Credit Suisse Real Estate Fund Green	EEF	0.0052
Caverion Corp	EEF	0.0052
Everlight Electronics Co Ltd	EEF	0.0052
Ricardo PLC	EEF	0.0052
Wasion Group Holdings Ltd	EEF	0.0052
Dialight PLC	EEF	0.0052
Ameresco Inc	EEF	0.0052
Odelic Co Ltd	EEF	0.0052
Kandi Technologies Group Inc	EEF	0.0052
LSI Industries Inc	EEF	0.0052
China Titans Energy Technology	EEF	0.0052
Greencoat UK Wind PLC/Funds	RWD	0.0052
SENVION SA	RWD	0.0052
TPI Composites Inc	RWD	0.0052
China Power New Energy Development	RWD	0.0052
Tanaka Chemical Corp	ENS	0.0050
Maxwell Technologies Inc	ENS	0.0050
Advanced Lithium Electrochemistry	ENS	0.0050
Ballard Power Systems Inc	ECV	0.0038
Plug Power Inc	ECV	0.0038
NEL ASA	ECV	0.0038
GCP Infrastructure Investments Ltd	RSR	0.0035
Capital Stage AG	RSR	0.0035
Sunrun Inc	RSR	0.0035
SPCG PCL	RSR	0.0035
Vivint Solar Inc	RSR	0.0035
Gigasolar Materials Corp	RSR	0.0035
Neo Solar Power Corp	RSR	0.0035
Motech Industries Inc	RSR	0.0035
REC Silicon ASA	RSR	0.0035
China Singyes Solar Technologies	RSR	0.0035
JA Solar Holdings Co Ltd	RSR	0.0035
Shunfeng International Clean Energy Ltd	RSR	0.0035
West Holdings Corp	RSR	0.0035
JinkoSolar Holding Co Ltd	RSR	0.0035
CropEnergies AG	RBB	0.0028
VERBIO Vereinigte BioEnergie AG	RBB	0.0028
Albioma SA	RBB	0.0028
Renewable Energy Group Inc	RBB	0.0028
eRex Co Ltd	RBB	0.0028

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*The Global NEX Index only is a unique Partnership of two entities starting from Q4 2017: Josh Landess of First Energy Research; and Dr. Rob Wilder of WilderHill - jointly making up the WilderHill New Energy Finance LLC (WHNEF); NEX alone is owned & produced by WHNEF.
