

**Ardour Global**<sup>TM</sup>  
Alternative Energy Indexes



---

# Ardour Capital Investments, LLC.

Walter Nasdeo  
Ardour Capital Investments, LLC  
[wnasdeo@ardourcapital.com](mailto:wnasdeo@ardourcapital.com)  
212-375-2958

# Ardour Capital Investments, LLC<sup>©</sup>

---



- Ardour Capital Investments, LLC, founded in 2002 is a leading research and investment banking firm focused on Energy Technology/Alternative Energy & Power/Clean & Renewable Technologies.
- Ardour publishes indepth company research coverage as well as extensive industry technology focused research.
- Ardour's team includes industry professionals that have extensive academic credits and industrial experience in the related underlying technologies within our domain expertise.
- Our research clients are some of the leading domestic and international institutional investors.
- Ardour provides private and public companies a comprehensive range of corporate finance and capital markets services. We have a strategic relationship with Baker & McKenzie and together, we co-sponsor an annual, invitation only, Energy Technology Conference. This past October 19th we held our 4th annual conference. The 90 attendees were all analysts and portfolio managers representing over 70 firms, all of which have some specific interest in E-Tech.
- We have launched a series of pure play Alternative Energy indexes which you can learn more about by going to [www.ardourglobalindexes.com](http://www.ardourglobalindexes.com).

WWW.ARDOURGLOBALINDEXES.COM

# Alternative Energy- Key Drivers



## Key Drivers:

- Price of Fossil Fuels
- Security Concerns Related to Fossil Fuels
- Environmental Concerns Related to Fossil Fuels
- Effective Development Initiatives (Distributed Energy)
- Technological Advances Resulting in Lower Costs
- Improved Company Fundamentals



# Government Drivers

---

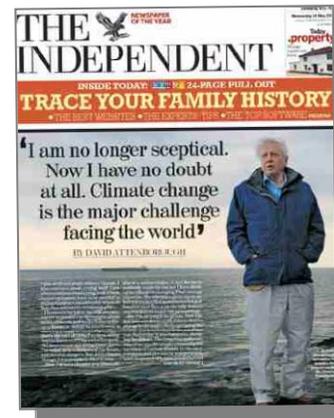
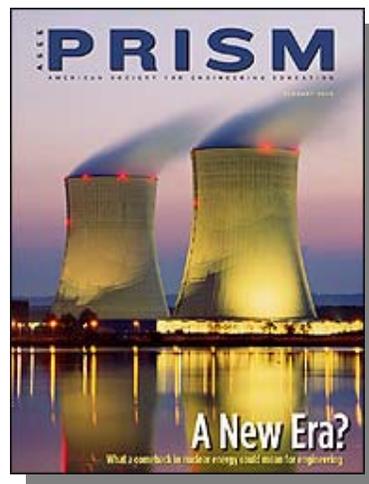
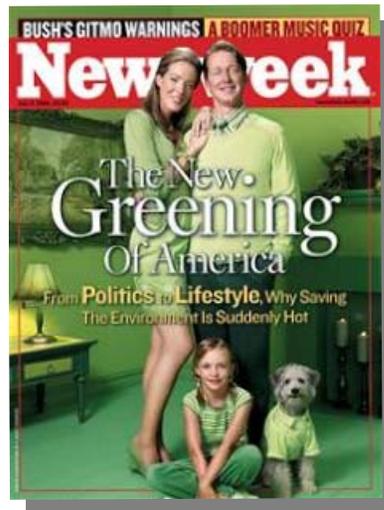


- Alternative Energy is one of the only global industries where growth is government mandated.
- The US energy bill, which just emerged from conference, makes it mandatory for US utilities to generate 15% of their total power from renewable sources by the year 2020. Currently, renewables account for just 0.2% of US power, indicating growth of 3,000% over the next fifteen years.
- The European Union has established comparable mandatory guidelines, calling for a 20% renewable component by the year 2020.
- Without regulation, similar initiatives are underway in China, Australia, India and elsewhere.

# In the News



February 25<sup>th</sup> 2007-  
Al Gore's "An  
Inconvenient  
Truth" wins best  
documentary Oscar.



WWW.ARDOURGLOBALINDEXES.COM

# Ardour Capital Areas of Focus



## ALTERNATIVE ENERGY RESOURCES

- Solar (PV, CSP and Thermal)
- BioEnergy and Ethanol (Power, Fuel and Product)
- Wind Power
- Hydro, Tidal, and Wave Power
- Geothermal



## ENVIRONMENTAL TECHNOLOGIES

- Water and Wastewater Treatment
- Air Quality and Emission Mitigation
- Clean Coal



## DISTRIBUTED GENERATION

- Micro Turbines
- Diesel Engines
- Fuel Cells
- Hydrogen Generation and Storage

[WWW.ARDOURGLOBALINDEXES.COM](http://WWW.ARDOURGLOBALINDEXES.COM)

# Ardour Capital Areas of Focus



## ENERGY EFFICIENCY

- Lighting
- White Tags
- Cogeneration
- Energy Recycling
- Advanced Metering
- Demand Response



## ENABLING TECHNOLOGIES

- Power Electronics
- Advanced Batteries
- Flywheels
- Superconductors
- Ultracapacitors
- Advanced Materials
- Hybrid Electric Drivetrains



[WWW.ARDOURGLOBALINDEXES.COM](http://WWW.ARDOURGLOBALINDEXES.COM)

# Solar Industry: (Data source: Solarbuzz)

---



- According to Solarbuzz, the solar energy market grew 33% in 2006.
- The agency expects the market to increase at a 30% CAGR through 2010.
- Ardour Capital is expecting 35% industry CAGR through 2010.

# First Solar (Ticker: FSLR)

---



- FSLR's thin film technology (cadmium telluride semiconductor material) is not exposed to polysilicon supply constraints that have affected the solar industry.
- The Company's cost leadership allows a lower average selling price (ASP), bringing it closer to grid parity than its competitors.
- The Company's cell efficiency (roughly 10%) is currently well below polysilicon players, but efficiency improvement programs are in place.
- FSLR continues to accelerate capacity expansion with continuous process improvement, with expected capacity of about 570MW by 2009.

# Trina Solar (Ticker: TSL)

---



- TSL is a vertically integrated solar power products manufacturer based in Changzhou, China. The Company covers most of the solar value chain, manufacturing monocrystalline ingots, wafers, solar cells and solar modules with expected capacity of 350MW by 2008.
- TSL's vertical integration provides a competitive advantage over its peer group in quality and cost control.
- The Company's expertise with reclaimable polysilicon should relieve some pressure from polysilicon supply constraints.
- TSL already has a strong presence in the European market and is poised to penetrate the U.S. market, pending UL certification.



## **U.S. Ethanol:** (Data source: Renewable Fuels Association)

---

- 2001-2006 5-year U.S. production CAGR: 22.4%
- 2007 annual production capacity: 7 billion gallons
- Ethanol annual production capacity will be nearly doubled by the end of 2008 to 13.4 billion gallons.

# Pacific Ethanol (Ticker: PEIX)

---



- Produces, markets and distributes ethanol in the West coast of United States
- The company's stated goal is to produce 220+ MGY by mid 2008 and 420+ MGY by end 2010
- Currently has three 50 MGY plants under construction: Burley, ID (ops by Q2 '08); Stockton, CA (ops by Q3 '08); and Calipatria, CA (ops by Q4 '08).
- 2Q07 Net Income was \$2.2 million compared to a (\$0.18) million net Income in 2Q06.

# U.S. Biodiesel:

(Data source: National Biodiesel Board)

---



- 2001-2006 5-year U.S. production CAGR: 119%
- Annual production capacity as of October 2007: 1.8 billion gallons
- Annual production capacity by the end of 2008: 3.1 billion gallons

# Nova Biosource Fuels (Ticker: NBF)

---



- Produces biodiesel using a patented multi-feedstock input and refining process.
- Utilizes low cost feedstock, including high FFA animal fat: \$0.15-\$0.25 vs. \$0.35-\$0.39 per lb for soybean oil.
- Focused on the construction and operation of three biodiesel refineries with total production capacity 180 to 220 million gallons per year.
- Nova is currently building a 60 million gallon per year biodiesel plant in Seneca, Illinois which is expected to be mechanically complete by the end of 2008.

# Brasil Ecodiesel (Ticker: ECOD3)

---



- Brasil Ecodiesel is Brazil's largest producer of biodiesel, responsible for approximately 51% of the country's total output.
- The Company maintains six operational plants with a current combined annual biodiesel production capacity of 640,000 m<sup>3</sup>.
- An additional plant under construction will increase the Company's total annual production capacity to around 1,310,000 m<sup>3</sup> in the beginning of 2008.
- In the 2Q07, Brasil Ecodiesel sold 33,668 m<sup>3</sup> of biodiesel and recorded gross revenue of R\$ 68.5 million.

# European Biodiesel: (Data source: European Biodiesel Board)

---



- 2003-2007 4-year production CAGR: 50%
- 2007 projected total production: 10.3 million tonnes, more than doubling the 2006 total production of 4.9 million tonnes.

# D1 Oils (Ticker: DOO.L)

---



- D1 Oils plc is a UK-based global producer of biodiesel.
- Feedstocks used are alternative, high yielding vegetable oils grown in the developing world, particularly jatropha curcas, a non-food oil chosen for its productivity, longevity and ability to grow in poor soil conditions.
- D1 has established operations and commercial relationships in the UK, Africa, the Middle East, India, Asia Pacific and China.
- At the end of 2006, its first four UK refinery sites had an interim total production capacity of 32,000 tonnes per annum.

# Global Wind Market: (source: Global Wind Energy Council)

---



- Historical growth rates over past five years (MW of global wind capacity installed)
- 2001 – 24,390 MW to 2006 – 74,223 MW, A five-year CAGR of 24.9%.
- From 2007-2010, GWEC expects there to be 149,500 MW of wind capacity installed, a four-year CAGR of 19.1%.

# Vestas (Ticker: VWS.L)

---



- Develops, manufactures, markets, and performs maintenance on wind power systems.
- Does business in 63 countries across five continents. Germany, Spain, Denmark, and USA have historically been Vestas' largest markets.
- Currently has over 33,500 turbines installed worldwide. Product line includes turbines of 850 kW, 1.65 MW, 1.8 MW, 2.0 MW, and 3.0 MW.
- 2Q07 revenue was 1.1 billion euros, up 19% from the previous year.

# Energy Bill:

---



- Leaders in Congress are currently preparing to reconcile differences between the House and Senate Energy bills. The consensus among political analysts is that the bill must pass this year or be deferred to the next administration in 2009.
- The Senate bill increases the corporate average fuel economy (CAFE) standard for cars and light trucks to 35 miles per gallon by 2020 and requires annual production of 36 billion gallons of biofuels by 2022. Sixty percent of total biofuel production must be “advanced biofuels” from sources other than corn starch. Another key provision, known as NOPEC, allows members of OPEC to be sued in U.S. Courts for collusive practices regarding oil prices and production.
- The House bill requires utilities to produce 15% of their electricity from renewable energy sources by 2020 and rolls back approximately \$16 billion in existing tax preferences for oil and gas producers. The proceeds of the tax rollbacks are earmarked for renewable energy and conservation efforts. The only major provision the House and Senate bills share is the NOPEC legislation.
- The White House has indicated the provisions likely to trigger a veto. Atop the list are rolling back tax preferences for oil and gas producers, a mandatory renewable electricity standard, and NOPEC legislation.

# The Ardour Global Alternative Energy Indexes™



## Key Features:

- Global
- Inclusive
- Pure Play
- Rules Based
- Capitalization Weighted / Float Adjustment
- Data Rich

**Ardour Global**  
Alternative Energy Indexes

ABOUT ARDOUR | ALTERNATIVE ENERGY | ABOUT THE INDEXES | INFORMATION SOURCES | INDEX DATA | INDEX VALUES

**NEWS & INFO**

September 15, 2006  
Five Recent IPOs Added to Ardour Global Index In Quarterly Rebalancing. ... [More](#)

June 13, 2006  
Sixteen New Alternative Energy Stocks Added to Ardour Global Index, LLC In Semi-Annual Reconstitution. ... [More](#)

May 17, 2006  
New Index Tracks World's Alternative Energy Stocks. First Global Pure Play Alternative Energy Index. ... [More](#)

May 15, 2006  
Ardour Global Index<sup>SM</sup> (Composite) - (Ardour Composite<sup>SM</sup>) of Alternative Energy Stocks Up 40% YTD. ... [More](#)

May 15, 2006  
Dow Jones Indexes Named Calculation Agent for First Global Alternative Energy Index. ... [More](#)

**INFORMATION SOURCES**

**Ardour Global Indexes, LLC**

The Ardour Global Alternative Energy Index<sup>SM</sup> - (Ardour Family<sup>SM</sup>) were designed to serve as fair, impartial and transparent measures of the performance of the Alternative Energy Industry. They embody certain characteristics that distinguish them from other indexes that attempt to cover the same industry. Key defining factors include:

- **Global.** The Ardour Global Index<sup>SM</sup> (Composite) - (Ardour Composite<sup>SM</sup>) embraces alternative energy companies from around the world and is in fact the only global alternative energy index. As a result, the index reflects the different motivations - the environment,

In US Dollars		
Symbol	Last	Chg
^AGIGL	2,190.11	▲ 14.78
Ardour (Composite)		0.68%
^AGIXL	2,296.89	▲ 24.74
Ardour Global XL		1.09%
^AGINA	1,752.11	▲ 3.51
Ardour North America		0.20%
^AGINAXL	2,047.17	▲ 14.84
Ardour NA XL		0.73%
^AGIEM	2,762.89	▲ 12.91
Ardour Europe		0.47%
^AGIEMXL	3,459.11	▲ 28.00
Ardour Eur. XL		0.82%

In Euros		
Symbol	Last	Chg
^AGIGLE	1,718.47	▲ 10.33
Ardour (Composite) Euro		0.60%
^AGIXLE	2,256.04	▲ 22.64
Ardour Global XL Euro		1.01%
^AGINAE	1,375.26	▲ 2.20
Ardour North America Euro		0.16%
^AGINAXLE	2,010.77	▲ 13.10

WWW.ARDOURGLOBALINDEXES.COM

# Global Reach

---



- Different Motivations
  - ~ Environmental
  - ~ Regulatory
  - ~ Government Support
  
- Different Technologies
  - ~ R&D Focus
  - ~ Winning Technologies
  
- Different Financial Characteristics
  - ~ Cash Flows
  - ~ Profit & Loss



# Recent Index Results

---

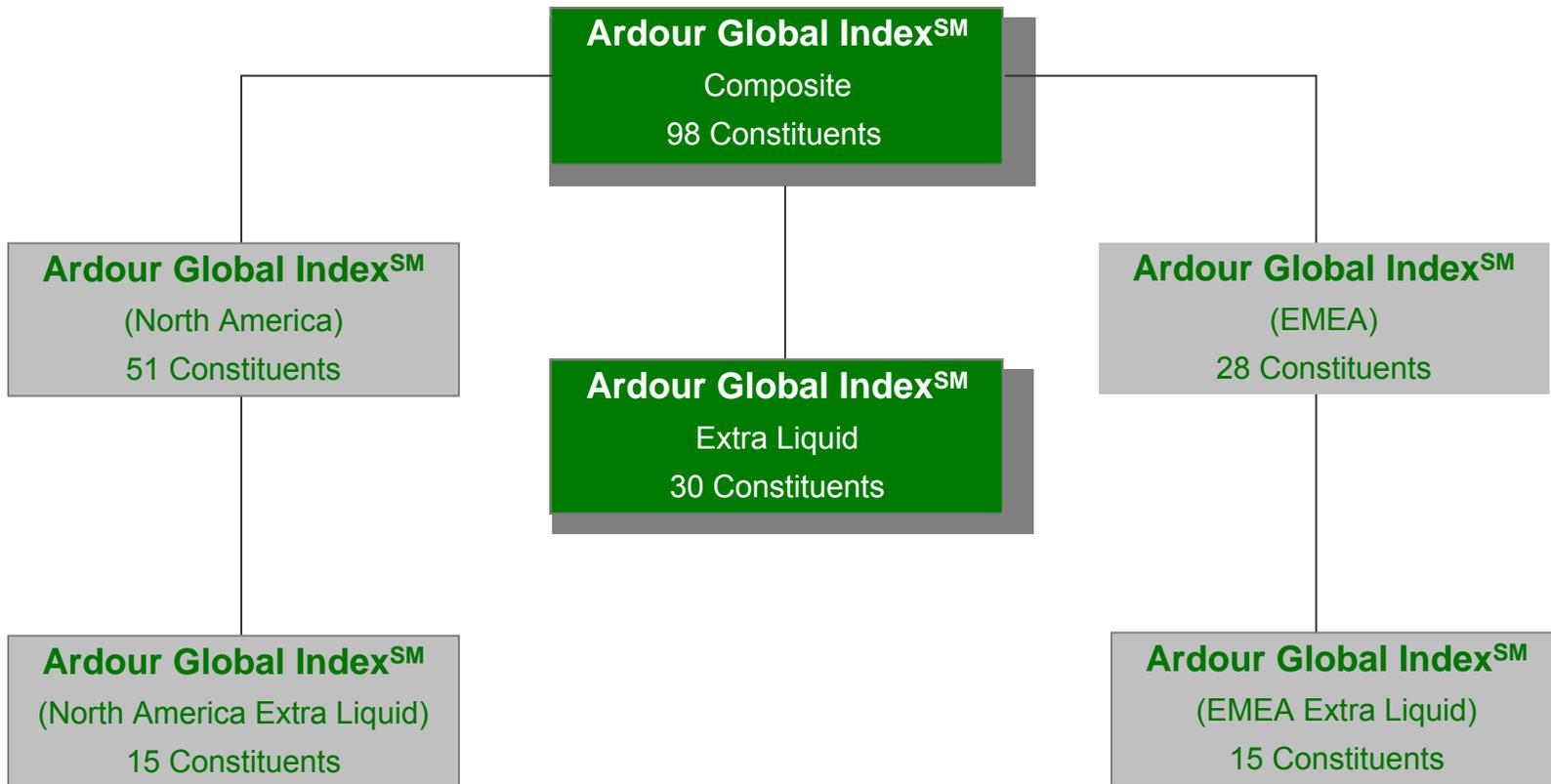


- In the second quarter of this year, the Industry, as represented by the Ardour Global Index (Extra Liquid) (AGIXL), posted some dramatic numbers.
  - ~ Of the 30 companies in the AGIXL, 23 were solidly profitable, with an index-weighted ROE of 9.3%.
  - ~ Also on a weighted basis, year-on-year revenue growth was a remarkable 53.6% and EBITDA growth a solid 58.9%.
  - ~ Most impressive of all, year-on-year net income grew by 132.5%.
  
- Although the P/E ratio for the AGIXL is relatively high at 52, it is right in line with other more broadly based growth indexes, such as the Russell 2000 Growth Index, which showed a P/E of 51.

# Ardour Global Indexes™ Geographic Breakdown



## The Ardour Global Alternative Energy Index™ (Ardour Family™)



\* Composite Includes 9 constituents from Asia/Pacific

[WWW.ARDOURGLOBALINDEXES.COM](http://WWW.ARDOURGLOBALINDEXES.COM)

# Ardour Global Index (Composite) Inclusion Criteria



CRITERIA	RULE
Business	Fits one of Five Key Sectors
Principally Engaged	>50% of Total Revenues
Exchange Listing	Full Listing (e.g. no Bulletin Board)
Market Capitalization / Float Adjustment	>USD 100 Million
Share Price	>USD 1
Turnover	>25% of Market Capitalization

WWW.ARDOURGLOBALINDEXES.COM

# Ten Largest Constituents (AGI)

---



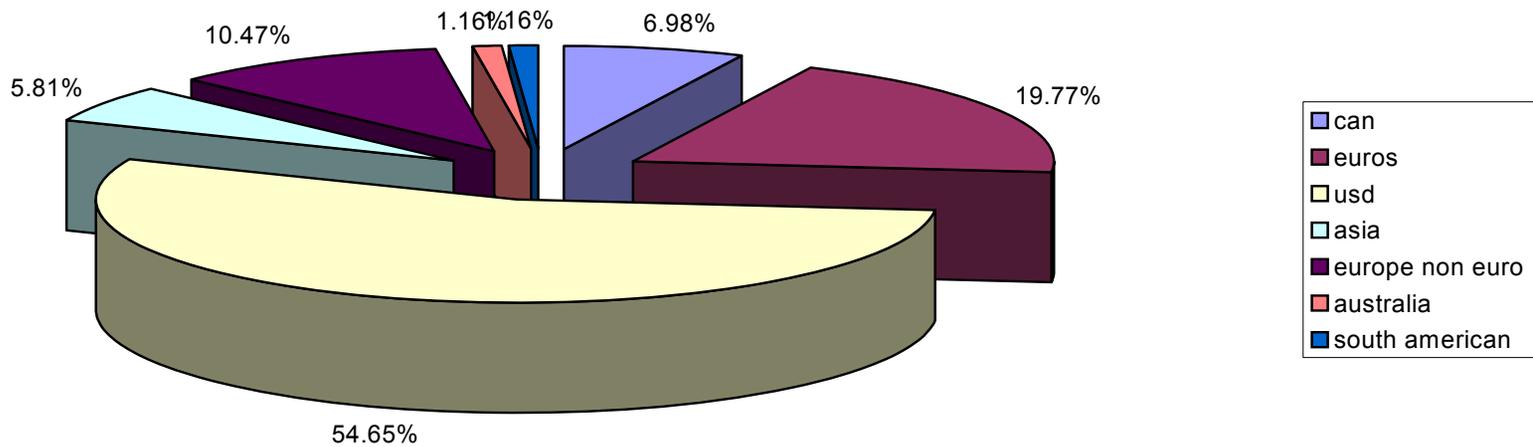
Denmark	Vestas Wind Systems A/S	14.04%
Spain	Gamesa Corporation Tecnologica S.A.	7.12%
Norway	Renewable Energy Corp. ASA	6.63%
Germany	Q-Cells AG	4.82%
Germany	SolarWorld AG	4.74%
Austria	Verbund AG	4.36%
U.S.	International Rectifier Corporation	4.20%
Japan	Kurita Water Industries Ltd.	3.69%
China	Suntech Power Holdings Co. Ltd. ADS	3.53%
Taiwan	Motech Industries Inc.	2.41%

[WWW.ARDOURGLOBALINDEXES.COM](http://WWW.ARDOURGLOBALINDEXES.COM)

# Ardour Global Index- Currency Breakdown



AGIGL



\*AGI as of March 15, 2007

[WWW.ARDOURGLOBALINDEXES.COM](http://WWW.ARDOURGLOBALINDEXES.COM)

# Data Rich

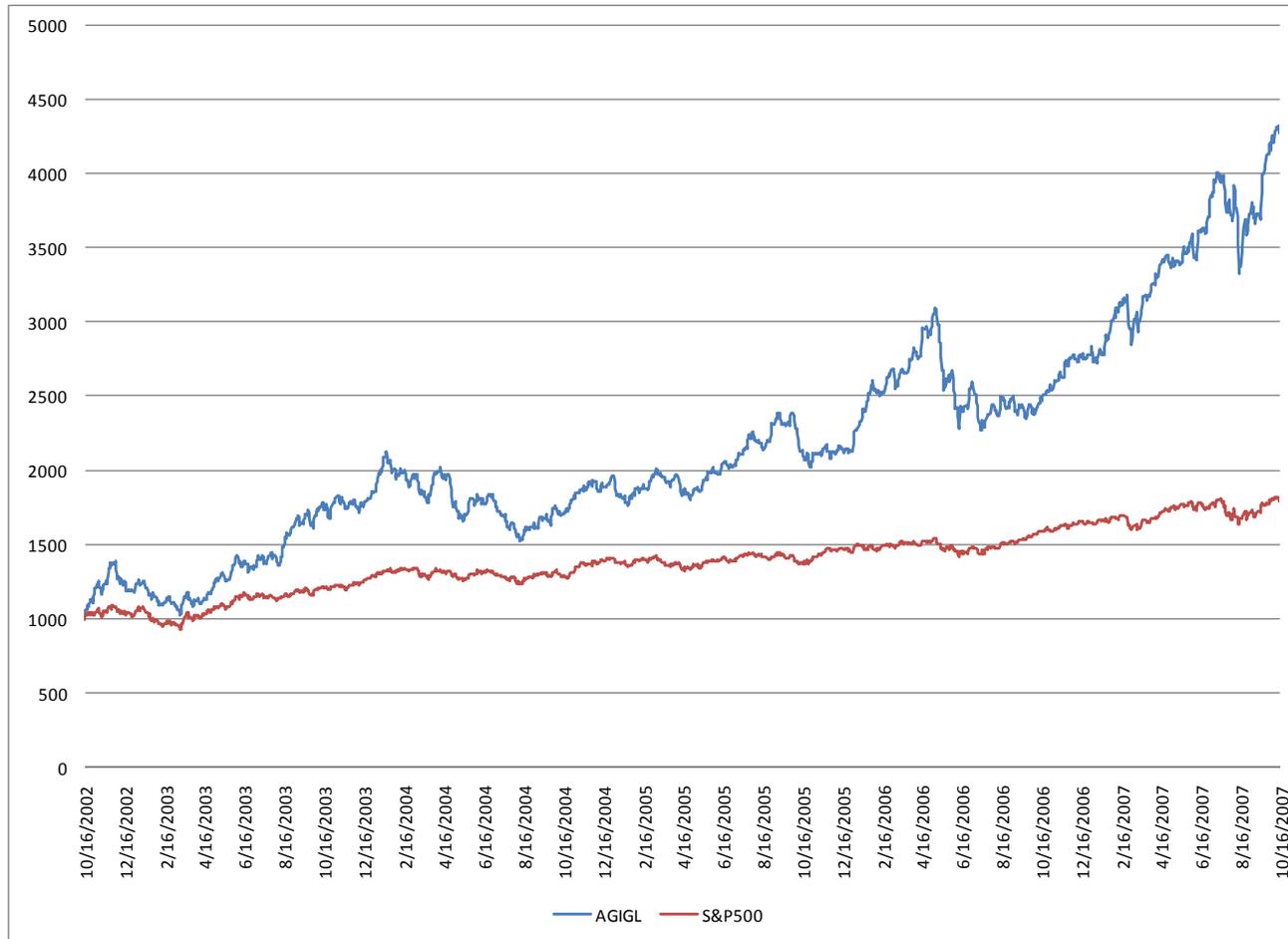


- Real Time Price
  - ~ Main Index
  - ~ Sub-Indexes
  - ~ Multi-Currency
  
- Historic Data (5 Years)
  - ~ Daily Price & Constituents
  - ~ Daily Statistics (e.g. PEs, PBs, etc.)
  
- Company Reports (Constituents)
  - ~ Descriptions
  - ~ Key Financial Statistics

INDEX VALUES		
In US Dollars		
Symbol	Last	Chg
^AGIGL	2,430.16	▼ -0.24
Ardour (Composite)		-0.01%
^AGIXL	2,366.99	▼ -10.18
Ardour Global XL		-0.43%
^AGINA	1,628.42	▼ -36.35
Ardour North America		-2.18%
^AGINAXL	1,867.56	▼ -26.16
Ardour NA XL		-1.38%
^AGIEM	3,525.64	▲ 30.94
Ardour Europe		0.89%
^AGIEMXL	4,286.98	▲ 57.88
Ardour Eur. XL		1.37%
In Euros		
Symbol	Last	Chg
^AGIGLE	1,853.12	▼ -4.13
Ardour (Composite) Euro		-0.22%
^AGIXLE	2,259.43	▼ -14.54
Ardour Global XL Euro		-0.64%
^AGINAE	1,241.76	▼ -30.42
Ardour North America Euro		-2.39%
^AGINAXLE	1,782.78	▼ -28.73
Ardour NA XL Euro		-1.59%
^AGIEME	2,688.50	▲ 17.93
Ardour Europe Euro		0.67%
^AGIEMXLE	4,092.17	▲ 46.66
Ardour Eur. XL Euro		1.15%

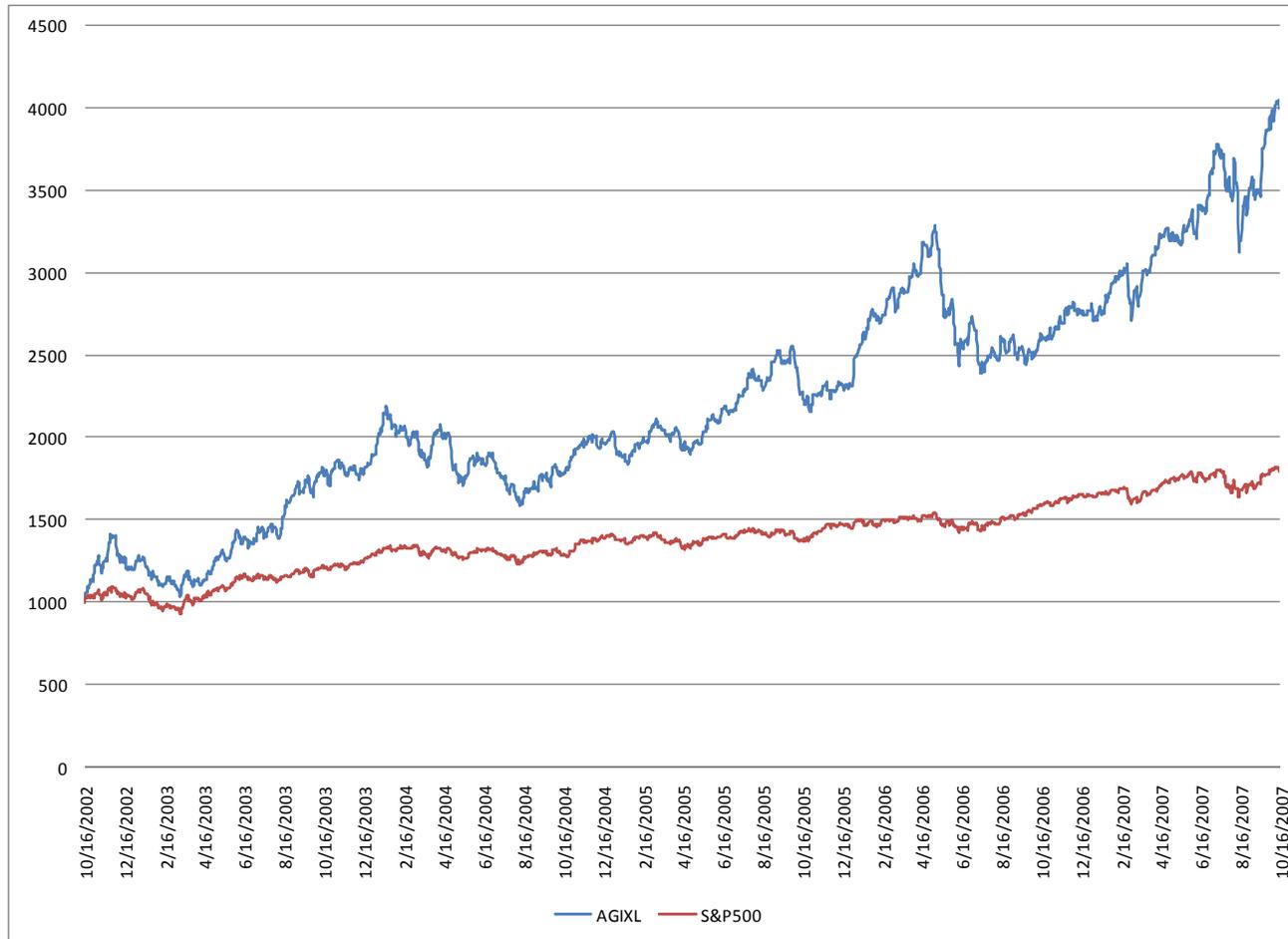
WWW.ARDOURGLOBALINDEXES.COM

# AGIGL vs. S&P 500 Price Performance



WWW.ARDOURGLOBALINDEXES.COM

# AGIXL vs. S&P 500 Price Performance



WWW.ARDOURGLOBALINDEXES.COM

# Statistical Analysis



Key Statistics			
	<i>S&amp;P 500</i>	<i>AGI USD</i>	<i>AGIXL USD</i>
5-Year Non-Annualized Return	79.42%	327.83%	299.76%
Standard Deviation	0.6903%	1.1411%	1.1672%
Sharpe Ratio	0.571076	1.210716786	1.127699675
Daily Mean	0.0344%	0.0861%	0.0827%
Variance	0.0048%	0.0130%	0.0136%
5-Year Statistics vs S&P 500			
		<i>AGI</i>	<i>AGIXL</i>
Beta		1.111251088	1.16599037
r-Square		0.451959769	0.475600883
Correlation		67.228%	68.964%
Covariance		0.005%	0.006%
Annualized Returns			
	<i>S&amp;P 500</i>	<i>AGI USD</i>	<i>AGIXL USD</i>
5 Years	12.521%	31.358%	30.112%
3 Years	11.652%	32.699%	28.993%
1 Year	12.832%	56.514%	44.007%
YTD to 10/16/07	8.795%	53.962%	44.403%
Annualized Standard Deviation			
	<i>S&amp;P 500</i>	<i>AGI USD</i>	<i>AGIXL USD</i>
5 Years	13.171%	21.771%	22.268%
3 Years	11.371%	19.746%	19.903%
1 Year	13.141%	21.123%	21.738%

Data as of October 16, 2007

WWW.ARDOURGLOBALINDEXES.COM

# Index Characteristics



AGIXL Key Statistics	
Total Market Capitalization ( <i>billion</i> )	\$146.77
Average Market Capitalization ( <i>billion</i> )	\$4.89
Median Market Capitalization ( <i>billion</i> )	\$2.80
Largest Market Capitalization ( <i>billion</i> )	\$21.68
Smallest Market Capitalization ( <i>billion</i> )	\$0.39
Index Weighted Revenues Growth Rate*	85.90%
Index Weighted EBITDA Growth Rate*	117.70%
Index Weighted Net Income Growth Rate*	243.20%
Index Weighted ROE	18.60%
Trailing P/E Ratio	52.9X

Data as of October 16, 2007

[WWW.ARDOURGLOBALINDEXES.COM](http://WWW.ARDOURGLOBALINDEXES.COM)

# Data Distribution

---



- Dow Jones Indexes (a unit of Dow Jones & Co.) is the calculation agent responsible for compilation, maintenance, calculation, and dissemination.
- Data Available Through all Major Financial Data Vendors
- AGI Web Site
  - ~ Real Time & Historic Data
    - ~ AGI
    - ~ Regional Indexes
    - ~ Related Data Sets (S&P 500, NASDAQ 100 & WTI)\*
    - ~ Charting Capabilities\*
    - ~ Company Abstracts
    - ~ News & Information
- Other Media Outlets

# Applications

---



- Leading Indicator
  - ~ Alternative Energy
  - ~ Overall Technology Sector
  - ~ Energy Sector
- Benchmarking
  - ~ SRI Funds
  - ~ Pension Funds
- Public Investment Products
  - ~ Futures
  - ~ ETFs
  - ~ Notes
  - ~ Unit Investment Trusts
  - Options
  - Closed-End Funds
  - Certificates

# Announced Licenses



Product	Jurisdiction	Licensee
UIT	USA	Van Kampen
Certificates	Germany	UBS
Certificates	Switzerland	UBS
Exchange Traded Fund (ETF)	USA	Van Eck Global
Futures	USA	New York Mercantile Exchange
Options on Futures	USA	New York Mercantile Exchange

[WWW.ARDOURGLOBALINDEXES.COM](http://WWW.ARDOURGLOBALINDEXES.COM)

# Market Vectors Global Alternative Energy ETF

---



- Ticker Symbol: GEX
- Exchange Listing: NYSE
- Listing Date: May, 2007
- Arca Trading: 4am – 8pm
- Key Features:
  - ~ Marginable
  - ~ No Uptick Rule
  - ~ Listed Options Expected (NYSE/Arca)
- Manager: VanEck Global

[WWW.ARDOURGLOBALINDEXES.COM](http://WWW.ARDOURGLOBALINDEXES.COM)

**Ardour Global**<sup>TM</sup>  
Alternative Energy Indexes



---

# Ardour Capital Investments, LLC.

Walter Nasdeo  
Ardour Capital Investments, LLC  
[wnasdeo@ardourcapital.com](mailto:wnasdeo@ardourcapital.com)  
212-375-2958