



Eco Investor Guide





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Introduction

The Eco Investor Guide's purpose is to introduce you to the emerging sector of Eco investing, including the companies, funds and indexes currently available for investment. This guide is intended to help you to making better decisions about your Eco investments. After reading this guide, you should be better prepared to make investment decisions within the Eco sector or speak with an investment adviser about Eco investing.

The Eco Investor Guide does not take positions for or against individual companies, funds or indexes as investments. The guide is not intended as a complete guide to investing in general and assumes some level of investment knowledge with respect to the various types of investment products (i.e. mutual funds and exchange traded funds) as well as the corresponding classifications and risks pertaining to financial products.



What is Eco investing?

Eco investing involves making investments in public companies that stand to profit in the near future from our transition to a carbon neutral and sustainable world. These Eco companies primarily operate in the sectors of Renewable Energy, Building and Efficiency, Transportation, Water and Eco Living, which generally supports human health and nutrition.

It is important to realize that all companies in every sector of our economy will eventually begin to use renewable energy and sustainable, energy-efficient methods. In the longer term, they will ultimately evolve to become more environmentally conscious. Details on how traditional companies like Nike, Dell and Virgin America are incorporating sustainable methods into their business can often be found in sustainability reports available on the companies' websites. We define Eco investing as focusing on the companies providing and profiting from the new technologies that will allow other companies, individuals and governments alike to achieve their sustainable living goals.

For Eco investors who prefer to invest in a basket of companies or to have a professional select their investments, a variety of financial products exist in the Eco sector including, but not limited to, indexes, mutual funds, exchange traded funds (ETF), hedge funds, unit trusts, exchange traded notes and other vehicles.

Currently, these products focus on areas such as:

- ~ Alternative Energy
- ~ Biofuel
- ~ Carbon Emissions
- ~ Climate Change
- ~ Eco Sector
- ~ Healthy Living
- ~ Smart Materials
- ~ Solar
- ~ Sustainable Business Practices
- ~ Transportation
- ~ Water
- ~ Wind

Check out
**Understanding
the Eco Sectors**
for complete
definitions of our
sectors

Because of the excitement and rapid pace of growth and change in the Eco sector, some disagreement exists between Eco investors regarding what can be classified as an Eco company. We consider an Eco company to be any company with a strong focus in our stated sectors and that stands to profit in the near future from our transition to a carbon neutral and sustainable world. We select Eco companies based on individual products and services rather than the percent of business they derive from the Eco sector. For example, one auto maker may lead the field in the transition to hybrid vehicles and yet still produce a range of low efficiency passenger trucks. We would include them for their leadership in the hybrid field.

Additionally, we have chosen the word "Eco" as opposed to "green" to indicate that while many of these companies support the environment and the green philosophy, the sector also may include companies that do not fit the traditional definition of green because some of their practices are less sustainable. As an example, a solar company creating world class panels produced in a country with lax environmental or workplace standards might be included. We, therefore, generally avoid judgments and instead focus on the product or services that make each company an Eco company and that promote a more sustainable future. This being said, we reserve the right to 'delist' any company that we feel does not exhibit an authentically Eco business practice.



Socially Responsible Investing Vs. Eco Investing

Socially Responsible Investing (SRI), also known as sustainable investing or ethical investing, is an investment strategy that seeks to maximize both financial return and social good by promoting the well being of the human race, animals and the environment. Generally, socially responsible investors favor corporate practices that promote environmental stewardship, consumer protection, human rights and diversity. Some SRI investors also avoid businesses involved in alcohol, tobacco, gambling, weapons and the military.

Eco Investing differs from SRI by concentrating on companies positioned to profit from the move to sustainable living. These companies often are focused on renewable energy (solar, wind, geothermal, etc.), climate change and environmental abatement, including carbon reduction, clean technologies, green building and efficiency, transportation and water issues.

It is important to note that neither SRI nor Eco investors make investment decisions solely based on a company's focus in these areas. Managers of these types of indexes and funds complete a comprehensive traditional financial analysis of a company's performance before including it in an investment vehicle, as should individual Eco investors with their own portfolios.

Why Investors are going Eco

Investors usually become interested in Eco investing for one of two reasons: they want to align and assert their environmental values with their investment portfolio, or they believe the sector holds profit and growth potential for the future. Many, of course, believe both reasons are sound rationale for including Eco investing in their financial plan.

Philosophical Reasons:

The concept of ethical investing began several hundred years ago and is generally referred to now as Socially Responsible Investing (SRI, see SRI vs. Eco Investing above). In this sense, Eco investing can be thought of as a sub-sector of SRI that focuses primarily on environmental and technology issues rather than on social or human rights issues.

Financial Reasons:

Many investors are becoming interested in Eco investing because they believe that the potential growth of the Eco market, even in the current economic climate, looks as promising as ever. With the International Energy Agency projecting \$36 trillion in needed investment in the energy sector over the coming two decades and recent growth rates of 20 percent to 40 percent for solar and wind energy companies, investors looking for the next "big thing" are increasingly looking to go Eco.

Other Financial Facts:

~ President Obama promised to use his executive authority to accelerate the construction of renewable energy installations on public lands.

~ The American Recovery and Reinvestment Act, signed into law by President Obama last year, includes more than \$70 billion for the Eco sector, including \$11 billion towards a Smart Grid, which



will use digital technology to save energy, reduce costs and increase the reliability of the transmission grid, and \$6 billion to subsidize loans for renewable energy projects.

~ Clean Edge, which has been tracking the growth of clean-tech markets for nearly a decade, reports that global revenues for solar photovoltaics, wind power and biofuels companies expanded from \$181.1 billion in 2010 to and grew 31 percent to \$246.1 billion in 2011, to grow to \$385.8 billion over the next decade. (Source: Clean Edge, Clean Energy Trends 2012)

~ Because the green building market is growing rapidly, the associated market for green building products has also grown, and will be a \$50 billion to \$180 billion market by 2015. (Source: Green Building products initiative)

~ According to a report by CNN Money, “The federal government spent \$24 billion on energy subsidies in 2011, with the vast majority going to renewable energy sources.” (Source: CNN Money. “Energy subsidies total \$24 billion, most to renewable.” 2012)

Understanding the Eco Sectors

We have sorted the various technologies in Eco investing into convenient sub-sectors. This is especially helpful for Eco investors who believe a particular sub-sector is of greater investment interest. As you conduct your own research, you will probably begin to notice that everyone classifies the sub-sectors slightly differently, and many overlap. Be sure to read, for example, a mutual fund’s prospectus to fully understand their investment methodology before investing. Consider the following a quick introduction to the sectors – you’ll need to do your own homework to fully understand the technologies and why you would or would not consider investing in them.

The Eco Investor Guide’s Company Sectors

RENEWABLE ENERGY

This sector involves all companies working to create, refine or bring to scale renewable energies to replace coal and oil. The sector is also referred to as “Alternative Energy” and can be further classified by the type of technology used.

Solar

Includes companies that build solar panels; supply solar panel parts, raw materials or services; or build, finance or service large-scale projects to create electrical energy from sunlight.

Wind

Includes companies that build wind turbines and subassemblies; supply related parts or services; or develop, engineer, finance or service large-scale wind farms that use wind to create electricity.

Energy Storage / Battery / Fuel Cells

Includes companies that employ various technologies to efficiently store energy in large capacities, especially renewable energies and fuels for automotive use.



Biofuel / Biomass

Includes companies that operate facilities or supply equipment that uses biological material, such as algae, or plant and plant-derived material, such as corn or waste wood, to produce fuels.

Geothermal

Includes companies that build or operate facilities or create equipment that utilizes heat from within the earth's surface to create electric energy.

Hydroelectric

Includes companies that build or operate facilities and equipment that captures electric energy from the movement of water - including rivers, tides and waves - as well as from temperature differences in ocean water.

Natural Gas

Includes companies that facilitate or supply equipment that utilizes cleaner burning natural gas for energy.

Utilities / Transmission

Includes utility companies that emphasize and incorporate renewable energy and sustainability into their business, as well as companies that supply equipment or services to these utilities.

BUILDING AND EFFICIENCY

Includes companies that offer Eco building products and energy efficiency technology as well as engineering, architecture and environmental services. This includes Eco companies offering building products such as energy efficient glass, insulation, lighting and many other materials. Also included are recycling companies, residential energy conservation companies and smart grid

technology companies, such as those developing water meters and energy efficiency software.

ECO LIVING

Includes companies that offer consumer-based healthy and sustainable goods and services focused on nourishment, health, physical activity and well-being. This includes agricultural companies that specialize in Eco friendly nutrition and natural foods, including organic farming and aquatic farming, Eco-friendly pesticides, animal health and plant development, as well as restaurants using these products. Also included are health care, pharmaceutical and medical products developers that encourage and support healthy, sustainable living.

FINANCIAL

Includes companies that are creating financial products or services to serve the Eco market, such as carbon trading indexes, and capital investment, as well as mutual funds and indexes covering the Eco sector.

TRANSPORTATION

Includes companies that are producing energy-efficient and low pollution vehicles for sea, land and air or that supply parts or services to such companies. Also included are those that are involved in public transportation systems, such as high speed rail and intelligent roads. Other companies may offer logistical technologies and toll and pricing systems.

WATER

Includes companies that specialize in areas of water treatment, desalinization, water-conserving products and services, purification products and services, water infrastructure and distribution, sewage treatment, irrigation equipment, testing and measurement services, and surface and groundwater management.



The Eco Investor Guide's Fund and Index Sectors

When looking at the various fund and index financial products, you may wonder why their managers have chosen some other sector classifications than those we've used. The simple answer to this is that everyone defines and divides up these sectors just a little bit differently.

For instance, many of the funds are listed as focusing on "Alternative Energy," while we've chosen to call the field "Renewable Energy." Both names describe companies focused on solar, wind, etc. Yet we believe that in the very near future these energy types will not be used as alternatives to coal and oil, but rather as a mainstream replacement for these fossil fuels, and we're planning ahead to call them what they are – clean, renewable energies.

Another distinction in classification can be seen with, for example, the MSCI Global Climate 100, which promotes investment in 100 public companies that demonstrate the greatest potential for mitigating immediate and long-term causes of climate change. By definition, this fund comprises most, if not all, of our categories.

For this reason, we've organized the fund and index financial products as their issuers describe them, rather than by our own distinctions. You will need to refer to their prospectus or website

to understand their exact classifications. Note that several of our categories do not exist yet as specialized funds or indexes -- there is no Geothermal fund. However, keep a look out for such funds developing over the next few years!

ALTERNATIVE ENERGY

Includes financial products that track companies covering the spectrum of what we call "Renewable Energy" and consists of companies in the fields of solar, wind, energy storage, battery, fuel cells, biofuels, biomass, geothermal, hydroelectric and natural gas. Frequently these funds will invest in related sectors as well.

BIOFUELS

Includes financial products that track companies operating facilities or supplying equipment that uses biological material, such as algae, as well as plant and plant-derived material, such as corn or waste wood, to produce fuels. Also includes financial products that invest in exchange traded futures contracts of commodities that represent biofuels or the raw materials used in their production, such as canola, soybeans, corn and sugar.

CARBON EMISSIONS

Includes financial products that track companies offering the lowest carbon intensity amongst the most heavily impacted sectors.

CLIMATE CHANGE

Includes financial products that track companies providing technology, products and services designed to alleviate, delay or help overcome the effects of climate change.

ECO SECTOR

Includes financial products that are listed as green, Eco, environmental, global warming, clean-tech or similar comprehensive descriptions that include, but are not limited to, all of our sectors.



ECO LIVING

Includes financial products that track companies providing consumer-based, healthy and sustainable goods and services focused on nourishment, health, physical activity and well-being.

SMART MATERIALS

Includes financial products tracking companies that offer products and services in the area of extraction and efficient consumption of raw materials, the recycling of used resources and the development of innovative alternative materials.

SOLAR

Includes financial products tracking companies that build solar panels; supply solar panel parts, raw materials or services; or build, finance or service large scale solar projects.

SUSTAINABLE BUSINESS PRACTICES

Includes financial products that track broadly diversified, sector-neutral companies based on environmental, social and governance (ESG) rankings. Sustainability refers to the degree to which companies address the social and environmental needs of the present without compromising the quality of life of future generations. *These products are not specifically Eco funds and often incorporate a wide array of companies not in our sectors. However, we include those products that exhibit a strong environmental focus.*

TRANSPORTATION

Includes financial products that track companies producing energy-efficient and low pollution vehicles for sea, land and air, or that supply parts or services to such companies. Also included are those that are involved in public transportation systems, such as

high speed rail and intelligent roads. Other companies may offer logistical technologies and toll and pricing systems. They may also include biofuels and natural gas companies, battery technology companies and related transportation companies.

WATER

Includes financial products that track companies that specialize in areas of water treatment, desalination, water conserving products and services, purification products and services, water infrastructure and distribution, sewage treatment, irrigation equipment, testing and measurement services, and surface and groundwater management.

WIND

Includes financial products tracking companies that build wind turbines and subassemblies; supply related parts or services; or develop, engineer, finance or service large scale wind farms.

A Note on Financial Products and Companies for Investment

Eco Investor Guide does not take positions for or against individual companies, funds or indexes. For Eco investors wishing to dig deeper into technical and other factors to decide which Eco companies to invest in, we highly encourage you to do so. There are a variety of stock evaluation methods that exist; however, we do not support or encourage any one particular method. Ultimately, your decision to invest in a particular company or financial product is a highly personal decision.



Eco Funds Currently Available In the United States

For the Eco investor looking to add renewable energy, building and efficiency, transportation and other Eco companies to their portfolio, investment has become easier over the last several years with the introduction of several exchange traded funds (ETFs) and mutual funds covering the sector. Although several of the more recent funds have only a short track record, there are now a number of options for Eco investors who would rather leave the work of choosing companies to a professional.

As anyone who has read a newspaper or magazine in the past several years knows, “Green” is big. But which companies are going to deliver on the promise of producing cheap, abundant energy to reduce carbon output and decrease dependence on foreign oil? Which will provide the building know-how to produce efficient and sustainable building products? These are tougher challenges to predict – and riskier for the independent investor. Today’s high-flying solar company could be tomorrow’s dog when a better technology is discovered. To mitigate risk, funds invest in a variety of these competing technologies and companies.

One of the most popular ETF’s today is the PowerShares WilderHill Clean Energy Portfolio ETF (PBW). PBW invests in about 50 of the leading clean energy companies around the world, aiming to “define and track the clean energy sector: specifically, businesses

Mutual Fund

An investment vehicle that is made up of a pool of capital collected from many investors for the purpose of investing in securities, such as stocks, bonds, money market instruments and similar assets. Mutual funds are operated by money managers who invest the fund's capital in multiple companies and/or assets and attempt to produce capital gains and income for the fund's investors. A mutual fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus.

Exchange Traded Fund

An exchange traded fund (or ETF) is an investment vehicle traded on stock exchanges much like a stock. An ETF holds assets such as stocks or bonds and trades at approximately the same price as the net asset value of its underlying assets over the course of the trading day. Most Eco ETFs track an index in the Eco sector, such as the Eco Index or Ardour Index. Unlike a mutual fund, which is priced daily, an ETF is priced continuously, is optionable and can be sold short.

Index

A stock market index is a method of measuring a section of the stock market. Many indexes – including the Dow Jones Industrial Average and the S&P 500 – are cited by news or financial services firms and are used to benchmark the performance of portfolios, such as mutual funds. Stock market indexes may be classed in many ways. A broad-based index represents the performance of a whole stock market and, by proxy, reflects investor sentiment on the state of the economy. Specialized indexes exist to track the performance of specific sectors of the market, such as the Eco sector. Indexes are also a common basis for exchange traded funds; for instance, the First Trust ISE Global Wind Energy Index ETF Fund (FAN) is based on the ISE Global Wind Energy Index (GWE).

that stand to benefit substantially from a societal transition toward use of cleaner energy and conservation.”

Other popular funds include the Winslow Green Growth Fund (WGGFX), Van Eck Market Vectors Global Alternative Energy ETF (GEX), and New Alternative Fund (NALFX). All three funds focus on



growth companies that have a positive or neutral impact on the environment and provide targeted exposure to companies that are engaged in the renewable energy and Eco industry. Both WGGFX and NALFX are mutual funds and have among the longest track records in the industry, beginning in 2001 and 1982, respectively.

Mutual funds differ from ETFs in that they are traded only once daily and require minimum investments. There are other differences between mutual funds and ETFs, and you should speak with your Eco investment advisor to choose the right type of fund for you.

Funds available for investing include PowerShares Global Clean Energy Portfolio ETF (PBD), Calvert Global Alternative Energy Fund (CGAEX) and Guinness Atkinson Alternative Energy Fund (GAAEX), which came on line in the last two years and are similar in focus to those already mentioned.

Recently, even more narrowly defined funds have entered the market. The Guggenheim Solar ETF (TAN) invests in the top 25 solar companies, while the First Trust ISE Global Wind Energy Index Fund (FAN) is focused solely on wind energy companies. Although very new, investors can expect these funds to be of even higher risk/reward and potentially greater volatility than the funds covering a greater number of renewable energy sectors.

A variety of Eco indexes used by money managers and other investors are maintained by financial and research companies.

Several of these indexes are used as the basis for ETFs in the sector, while others are used as investable financial vehicles. The family of indexes from Jefferies Global Clean Technology Composite Index, Schroeder's ISF Global Climate Change Equity, Bloomberg World Energy-Alternate Sources Index and the MSCI Global Climate Index are just a few examples of indexes available. Often, investors must be a client or contact these firms directly in order to invest in an index.

Beyond mutual funds and ETFs, several other financial vehicles exist for Eco investors. The ELEMENTS MLCX Biofuels Exchange Traded Note (FUE) is designed to track the return of a specific underlying market measure. This type of debt security differs from other types of bonds and notes because ETN returns are based upon the performance of a market index minus applicable fees, no period coupon payments are distributed, and no principal protections exists.

Other types of financial products with focused Eco sector offerings include unit investment trusts (UITs) and hedge funds. UITs, such as the Renewable and Alternative Energy Portfolio (CRAENX) offered by Claymore Investments, are fixed, unmanaged portfolios of securities having a specified lifetime (much like a CD). Hedge funds, like the Ardsley Partners Renewable Energy Fund, are investment funds open to a limited range of usually high net worth investors who are permitted by regulators to undertake a wider range of investment and trading activities than other investment funds.



6. Disruptive technology may cause volatility – A new technology in one area may suddenly overtake previous leaders. For example, a sudden breakthrough in solar or battery technology that is cheap and easily scalable could have sudden and severe price effects

on competitors. In this rapidly evolving sector, with ongoing private and governmental research and development, it is nearly impossible to predict winners and losers in the space.

7. Promising technologies may fail to scale-up – Almost daily we hear of new research and developments – new types of more efficient solar panels, or most recently, the Bloom Box fuel cell in development by Bloom Energy. However, the ability to scale up these technologies to offer a product that competes megawatt for megawatt in cost and reliability with traditional energy sources is a much harder task. Many companies with revolutionary technology are volatile and ultimately fail because they are unable to make this transition.

8. Green today may not be green tomorrow – Technologies that enjoy the support and investment of green dollars now may turn out to be not as green in the future. Ethanol again is a good example. Initially thought to be a promising renewable source of fuel, concern of its effects on food prices and the carbon savings it provided caused it to fall out of favor among environmentalists and investors. Currently, the lithium used in many new battery technologies is being questioned as to its availability and green credentials, and whether it is trading one scarce, non-renewable resource for another.

9. Oil and fossil fuel energy prices may remain low – Much debate exists over the long term price and availability of oil and other fossil fuels. Although it remains a certainty that availability will decrease and cost will increase in the long term, the time frame in which this will happen is unclear. Because of this, the direct cost competitiveness and demand of other renewable energies will remain unknown and volatile in tandem with traditional energies. In 2008 as oil prices reached \$150 a barrel, consumer demand for more efficient vehicles including hybrid and electric cars began to surge, dropping off as oil prices decreased dramatically over the next year.

10. Climate Change “debate” may continue to plague the sector – The effects of climate change may remain incremental in the short term and its validity may continue to be challenged. Recent incidents have spurred a renewed media-fueled effort to deny the overwhelming science behind climate change. A resurgent effort to deny the need to reduce carbon emissions may delay the governmental policies and support that will drive new business and investment. While many other reasons exist for greening the economy, acceptance of climate change remains the overriding call for action, so its perception may continue to effect support and investment.

After reading and understanding the variety of risks involved with Eco Investing, you’ll have to make your own conclusions. What we can suggest is this: Balance your portfolio according to your risk tolerance, research your investments carefully, diversify your holdings with mutual funds and ETFs in volatile sectors, and seek professional guidance if you need more information.



Conclusion

The Eco universe of companies, funds and indexes is clearly growing, with \$257 billion in investment in renewable energy alone in 2012 according to the report, "Global Trends in Renewable Energy Investment 2012" based on data from Bloomberg New Energy Finance. Vast amounts of capital, both public and private, are pouring into the sector. Political pressure is growing globally to combat climate change by reducing carbon output, and Eco technologies will be at the forefront of this transition to a cleaner, sustainable world. Consumers are beginning to demand change and are making buying choices that reflect a growing Eco awareness. Companies are realizing that transitioning to sustainable products and services makes sense not only for the environment, but economically as well.

Looking to the future, experts predict a return to higher coal and gas energy prices, brought about by increased demand, taxes on carbon, or both. Simple economics of supply and demand, coupled with technology advances, will in time bring about a parity of prices for energy technologies like wind, solar and geothermal that will transition them from "alternative" energy to the mainstream.

For the investor looking to invest responsibly, but also desiring above average returns, becoming an Eco investor is the perfect fit.

A Note on Working with an Investment Advisor

We consider becoming an Eco investor a sub-sector of being an investor, so we've avoided discussing investment strategies and portfolio make-up. We would like to give you a few final thoughts on investing as they pertain to Eco investing and working with advisors. As an investor, you should understand that Eco investing is a high risk category of investment, dealing with often small cap companies and emerging technologies. For this reason, the percentage of your portfolio dedicated to Eco investing should reflect your risk level. A good investment advisor can guide you in this respect. A good Eco investment advisor can advise you both on your comprehensive portfolio strategy and on the risks and returns of Eco investing.



Eco Investor Guide

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