

Excerpt from Alt Energy Stocks, December 11, 2010

http://www.altenergystocks.com/archives/2010/12/the_best_clean_and_renewable_energy_etfs.html

[Note this is brief except from a very useful, much more-in-depth piece. Their website has many interesting articles, is recommended! <http://www.altenergystocks.com>]

The Best Clean and Renewable Energy ETFs

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For short term holders, the Powershares Wilderhill Clean Energy ETF (PBW) is the best

If cost is the most important factor, an individual investor without the time or expertise to build a clean energy stock portfolio should choose one of the clean energy Exchange Traded Funds (ETFs).

I recently reversed my former stance, and now believe that cost should not be the only factor, because the evidence suggests that, in clean energy at least, the active management available from a mutual fund or an advisor who works with individual stocks can consistently outperform the passive approach used by the ETFs.

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Diversification

While the indexes the funds track sound fairly similar, there are some salient differences. I think they can be best summarized as "Clean Energy" (most funds) vs. "cleantech" (...), and domestic (PBW and ...) vs. global (... PBD...) For most investors, the reason to buy an ETF instead of common stocks is to achieve quick and easy diversification at relatively low cost. Hence, most investors should prefer the global ETFs to the domestic ETFs. Since cleantech is a broader sector which includes clean energy, an investor seeking diversification may also prefer ... to the other global ETFs because of the broader diversification, but this comes at a price of diluting exposure to the energy sector.

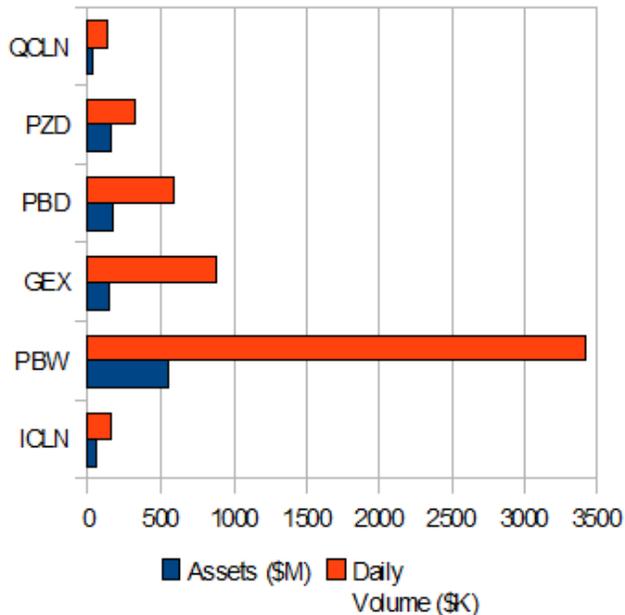
Size and Liquidity

The chart to the right summarizes the assets held and the daily turnover (in dollars) of each ETF. Large investors, and investors expecting to trade frequently using market orders should care about trading volume, which is a measure of the ETFs liquidity.

Market orders to buy or sell an ETF with high trading volume will generally be executed closer to the quoted price than orders to buy or sell an ETF with low trading volume. Traders using limit orders or placing trades equal to a small fraction of an ETF's daily volume can expect to have minimal price impact,

and so are likely to be less concerned about fund liquidity.

The ETF with by far the best liquidity is the oldest of the ETFs, PowerShares' PBW. Among the global clean energy funds providing somewhat better diversification, the most liquid is



Fund Costs

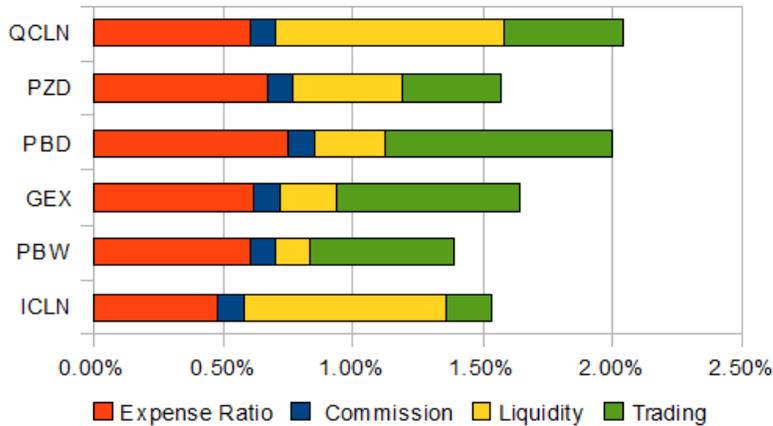
Investors in ETFs can expect to bear several costs. First, they pay a management fee, which is publicly disclosed as the expense ratio. They also pay a commission to buy the ETF, and liquidity costs from any price impact of their trade. Finally, they pay the internal trading costs of the fund, which occur when index components or weightings change over time, and is captured in the ETF's Turnover Ratio (see the [discussion of Turnover for mutual funds](#).) Since it's typically cheaper to trade domestic stocks than international stocks, the domestic ETFs probably pay lower trading costs than global ETFs given the same turnover.

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The costs for broker commission and liquidity are both one-time transaction costs, and will decrease for longer holding periods or increase for shorter holding periods than the five years I assumed. When estimating a fund's internal trading costs, I assumed that larger funds would have higher internal liquidity costs because of larger transaction sizes, and also that domestic ETFs had lower trading costs than global ETFs. My estimates for both liquidity costs and the funds' internal trading costs are very rough, and could be off by as much as a factor of 2 or 3 since I have limited information to go on. My estimates are shown in the graphs below.

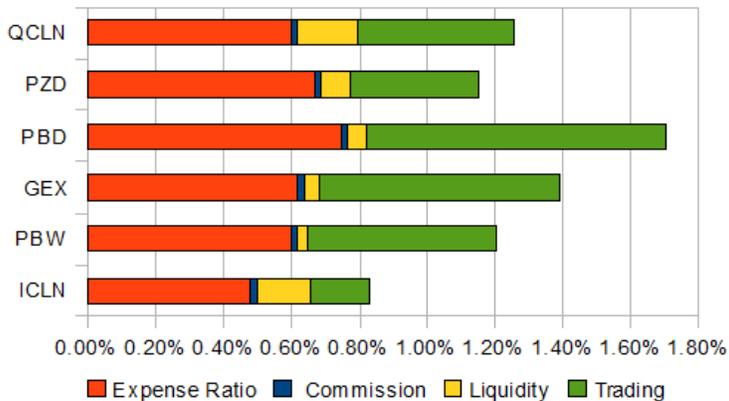
Estimated Annual ETF Costs

For a \$1000 investment and a 1 year holding period



Estimated Annual ETF Costs

For a \$1000 investment and a 5 year holding period



As you can see, short holding periods favor the the [PowerShares Clean Energy \(PBW\)](#) ETF because of its greater liquidity. However, the flip side of having better liquidity is a large funds size, which in turn leads to higher internal trading costs. For longer term investors, the ETF's expense ratios and internal trading costs become much more important. For a five year holding period, the ... is the clear winner. ... not only has the lowest Expense and Turnover Ratios, it also has a small fund size. Although the small fund size leads to lower liquidity and higher costs for investors trading in and out of the fund, it also means that the fund's internal trading costs will be lower because smaller trades usually have lower market price impact.

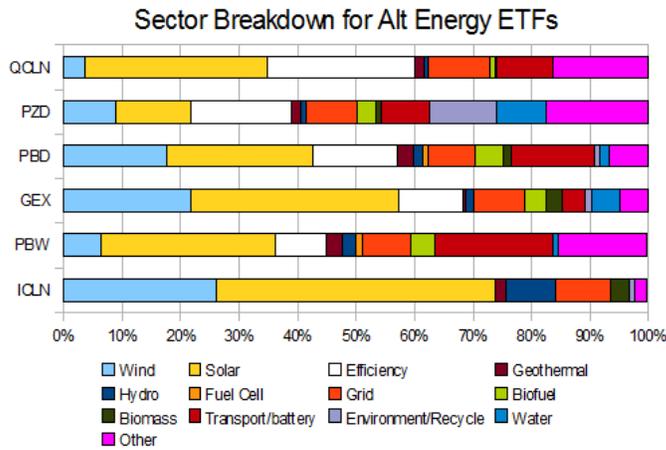
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Sector Allocation

As I discussed in my look at the [sector allocation of Alternative Energy Mutual Funds](#), I believe investors will do best with a relatively low allocation to [solar PV stocks](#), and a high allocation to [energy efficiency stocks](#). I also like investments in Alternative Transportation, the Electric Grid, Biomass,

Geothermal, and Hydro, although these sectors are relatively small parts of all the portfolios. Finally, since we are looking for an allocation to clean energy, a low allocation to "Other" which represents companies and parts of companies with operations that are not related to clean energy should be as small as possible.

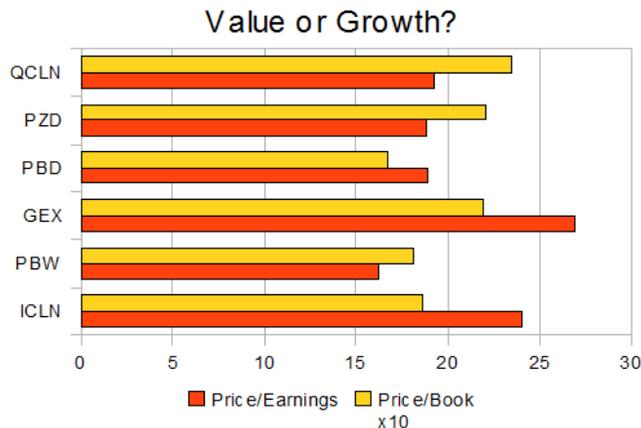
Below is my analysis of the sector allocation of the ETFs, based on the complete lists of fund holdings from the fund sponsor websites:



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Value

Renewable energy is generally considered a growth sector. After all, it's relatively new, and growing from a very small base as a percentage of our energy mix. But that does not mean that there are no value stocks in renewable energy. Over longer time periods, value stocks have consistently outperformed growth stocks in the broad market, and I see no reason to believe that they will not continue to do so. Hence I prefer ETFs which put more emphasis on value stocks.

ETFs disclose the average Price/Earnings (P/E) and Price/Book (P/B) ratios of their portfolio holdings, and I've compiled them in the following chart:



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