

Excerpt from Morningstar, December 7, 2021

What's Inside the 4 Largest Clean Energy ETFs

There's much more to these funds than meets the eye.

.... In our April 2021 report "Investing in Times of Climate Change", we outlined the different approaches that asset managers have taken to address this issue, which range from decarbonizing portfolios to building ones aimed at investing in green solutions.

To date, investors appear most interested in investing in green solutions. Specifically, clean energy funds have enjoyed the highest inflows of any subcategory of climate-aware funds over the past two years. They currently claim a major slice of market share in the climate funds space. Here, I will take a close look at the four largest clean energy ETFs available in the United States, featured in Exhibit 1.

Exhibit 1 The Largest Clean Energy ETFs

Fund	Ticker	Inception Date	Index	Fee %	Assets (\$Bil)	Net YTD Flows (\$Bil)	Number of Holdings
iShares Global Clean Energy ETF	ICLN	6/24/2008	S&P Global Clean Energy	0.41	6.4	3.0	95
ALPS Clean Energy ETF	ACES	6/27/2018	CIBC Atlas Clean Energy	0.65	1.0	0.3	41
First Trust NASDAQ Clean Edge Green Energy ETF	OCLN	2/8/2007	NASDAQ Clean Edge Green Energy	0.60	3.2	1.1	61
Invesco WilderHill Clean Energy ETF	PBW	3/3/2005	WilderHill Clean Energy	0.61	1.9	0.4	73

Source: Morningstar Direct. Data as of October 31, 2021.

At face value, these four seem awfully similar. But their underlying indexes can have very different approaches to defining clean energy and determining which stocks qualify for inclusion.

.... There are many different definitions of clean energy. The definitions employed by clean energy indexes can vary widely. Some only include

.... ... and ... weight stocks based on their market cap. ... assigns weights based on the product of stocks' market cap and an energy exposure score, which corresponds to the revenue thresholds mentioned above. The more

revenue generated from clean energy, the higher stocks' exposure score and greater weight in ... 's portfolio. PBW is the only fund in the group employing equal weighting. To avoid capacity issues, the minority of PBW's constituents with less than \$200 million in market cap receive an equal weight of 0.5%. The rest of the holdings receive an equal share of their respective sector weights, which are determined by the index provider.

Exhibit 3 features each of the four funds' top 10 holdings.

Exhibit 3 Top Holdings Comparison

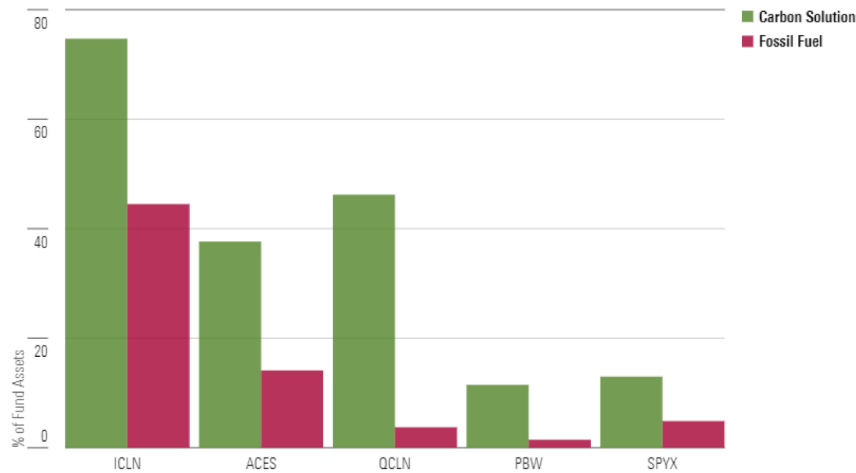
ICLN			ACES		
Weight %	Stock	Industry	Weight %	Stock	Industry
8.96	Enphase Energy ENPH	Solar	6.74	Tesla TSLA	Auto Manufacturers
7.95	Vestas Wind Systems A/S VWS	Specialty Industrial Machinery	6.43	Plug Power PLUG	Electrical Equipment & Parts
5.68	Plug Power PLUG	Electrical Equipment & Parts	5.91	Enphase Energy ENPH	Solar
5.33	SolarEdge Technologies SEDG	Solar	5.64	First Solar FSLR	Solar
5.31	Orsted A/S ORSTED	Utilities - Renewable	5.62	Sunrun RUN	Solar
5.04	Consolidated Edison ED	Utilities - Regulated Electric	4.73	NextEra Energy Partners LP NEP	Utilities - Renewable
3.87	Iberdrola SA IBE	Utilities - Diversified	4.28	Brookfield Renewable Partners LP BEP.UN	Utilities - Renewable
3.57	EDP - Energias de Portugal SA EDP	Utilities - Diversified	4.21	Northland Power NPI	Utilities - Renewable
3.41	Sunrun RUN	Solar	4.04	Hannon Armstrong Sustainable Infra HASI	REIT - Specialty
3.40	First Solar FSLR	Solar	3.73	Ballard Power Systems BLDP	Specialty Industrial Machinery
QCLN			PBW		
Weight %	Stock	Industry	Weight %	Stock	Industry
10.38	Tesla TSLA	Auto Manufacturers	2.08	SunPower SPWR	Solar
7.63	Enphase Energy ENPH	Solar	2.03	Standard Lithium SLI	Other Industrial Metals & Mining
7.16	Albemarle Corp ALB	Specialty Chemicals	2.01	Bloom Energy Class A BE	Electrical Equipment & Parts
6.87	NIO ADR NIO	Auto Manufacturers	1.87	Enovix ENVX	Electrical Equipment & Parts
5.06	ON Semiconductor ON	Semiconductors	1.86	Tesla TSLA	Auto Manufacturers
5.03	Plug Power PLUG	Electrical Equipment & Parts	1.82	Enphase Energy ENPH	Solar
4.19	SolarEdge Technologies SEDG	Solar	1.80	Sunnova Energy International NOVA	Solar
3.76	XPeng ADR XPEV	Auto Manufacturers	1.78	Renewable Energy Group REGI	Oil & Gas Refining & Marketing
3.48	WolfSpeed WOLF	Semiconductors	1.78	Sunrun RUN	Solar
3.18	First Solar FSLR	Solar	1.76	Plug Power PLUG	Electrical Equipment & Parts

Source: Morningstar Direct. Data as of October 31, 2021.

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Exhibit 4 shows the percentage of each fund invested in companies with fossil-fuels exposure as well as the portion invested in companies providing carbon solutions. Revenue from fossil fuels (thermal coal or oil & gas) production and power generation will be counted toward the funds' fossil-fuels exposure. On the other hand, those sales stemming from renewable energy production and ancillary services, energy efficiency, and green infrastructure and transportation will be counted toward carbon solutions exposure. For the sake of comparison, I've also included the data for ... Fossil Fuel Reserves Free ... which holds only ... without fossil-fuel

Exhibit 4 Fossil Fuel and Carbon Solution Involvement



Source: Morningstar Direct. Data as of October 31, 2021.

Exhibit 5 shows company-level product involvement of the top 10 holdings for each fund. ... runs into a similar issue as ..., as some of its top holdings are power producers that are involved in both renewable and traditional energy generation, such as Northland Power and NextEra Energy

Exhibit 5 Company-Level Product Involvement

ICLN				ACES			
Weight %	Stock	Fossil Fuel	Carbon Solutions	Weight %	Stock	Fossil Fuel	Carbon Solutions
8.96	Enphase Energy ENPH	None	50%–100%	6.74	Tesla TSLA	None	50%–100%
7.95	Vestas Wind Systems A/S VWS	None	50%–100%	6.43	Plug Power PLUG	None	None
5.68	Plug Power Inc PLUG	None	None	5.91	Enphase Energy ENPH	None	50%–100%
5.33	SolarEdge Technologies SEDG	None	50%–100%	5.64	First Solar FSLR	None	50%–100%
5.31	Orsted A/S ORSTED	5%–9.9%	50%–100%	5.62	Sunrun RUN	None	50%–100%
5.04	Consolidated Edison ED	10%–24.9%	5%–9.9%	4.73	NextEra Energy Partners LP NEP	25%–49.9%	50%–100%
3.87	Iberdrola SA IBE	10%–24.9%	25%–49.9%	4.28	Brookfield Renewable Partners LP BEP.UN	0%–4.9%	50%–100%
3.57	EDP - Energias de Portugal SA EDP	10%–24.9%	5%–9.9%	4.21	Northland Power NPI	25%–49.9%	50%–100%
3.41	Sunrun RUN	None	50%–100%	4.04	Hannon Armstrong Sustainable Infra HASI	None	None
3.40	First Solar FSLR	None	50%–100%	3.73	Ballard Power Systems BLDP	None	None
QCLN				PBW			
Weight %	Stock	Fossil Fuel	Carbon Solutions	Weight %	Stock	Fossil Fuel	Carbon Solutions
10.38	Tesla TSLA	None	50%–100%	2.08	SunPower SPWR	None	50%–100%
7.63	Enphase Energy ENPH	None	50%–100%	2.03	Standard Lithium SLI	N/A	N/A
7.16	Albemarle ALB	None	None	2.01	Bloom Energy Class A BE	None	50%–100%
6.87	NIO Inc ADR NIO	None	50%–100%	1.87	Enovix ENVX	N/A	N/A
5.06	ON Semiconductor ON	None	None	1.86	Tesla TSLA	None	50%–100%
5.03	Plug Power PLUG	None	None	1.82	Enphase Energy ENPH	None	50%–100%
4.19	SolarEdge Technologies SEDG	None	50%–100%	1.80	Sunnova Energy International NOVA	None	50%–100%
3.76	XPeng Inc ADR XPEV	None	50%–100%	1.78	Renewable Energy Group REGI	None	None
3.48	Wolfspeed WOLF	None	50%–100%	1.78	Sunrun RUN	None	50%–100%
3.18	First Solar FSLR	None	50%–100%	1.76	Plug Power PLUG	None	None

Source: Morningstar Direct. Data as of October 31, 2021.

Both ... and PBW currently have no fossil-fuels exposure among their top 10 holdings and low exposure overall. This is partly because of their broader scope. Including related clean energy businesses allows them to avoid owning power providers with higher fossil-fuels exposure.

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... As there is no consensus on what exactly qualifies as clean energy, the many approaches to indexing this space still require deep due diligence on the part of fund investors.