

Investing in Sustainability Leaders

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Summary

- Global temperatures will continue to rise and “the net damage costs of climate change are likely to be significant and increase over time” (IPCC). Paris Agreement is the United Nations’ effort to bring all nations into a common cause to combat climate change and adapt to its effects.
- Investors’ interests to climate change and other environmental, social and governance (ESG) related matters have also surged in recent years. The Nasdaq Future Global Sustainability Leaders Index (NQFGSL) is one of the innovative ESG solutions that Nasdaq offers.
- The NQFGSL index implements a passive portfolio management approach that avoids exposure to the fossil fuel industry and climate change risk, and instead seeks investment in global climate leaders (excluding Australia) that consist with certain responsible investment screens.
- It is a well-diversified index with many well-known global climate leaders. Its outperformance, both in the long term for about 10 years and in 2020 with the pandemic prevailing, further proved the robustness and attractiveness of the “Climate Leaders” investment concept.

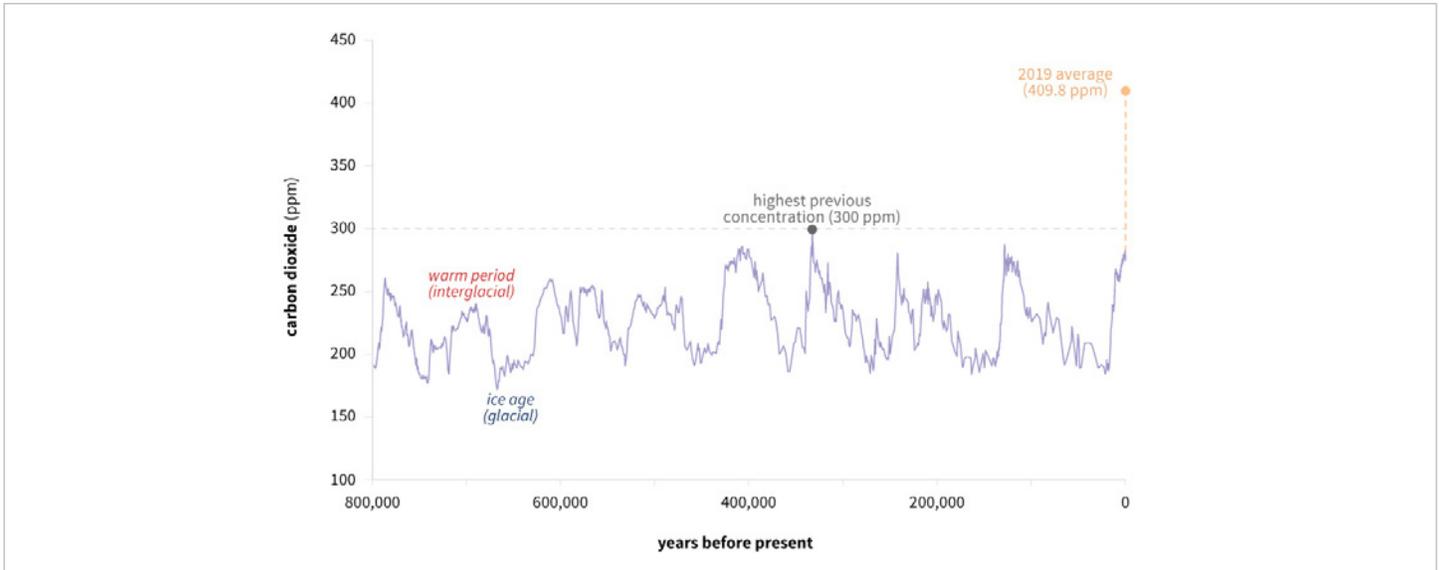
The Cost of Ignoring Climate Change

Do you know that Carbon dioxide levels in the air are at their highest in 650,000 years? Nineteen of the twenty warmest years on record have occurred since 2001. The global average sea level has risen about 8” (20 cm) over the past 100 years. These are just a few astonishing points that NASA has revealed in their most recent research on climate change ¹.

¹ NASA Global Climate Change website: climate.nasa.gov

Illustration 1: Atmospheric CO₂ has increased since the Industrial Revolution

Graph to compare the atmospheric samples contained in ice cores and more recent direct measurements. (Credit: Luthi, D., et al. 2008; Etheridge, D.M., et al. 2010; Vostok ice core data/J.R. Petit et al.; NOAA Mauna Loa CO₂ record.)

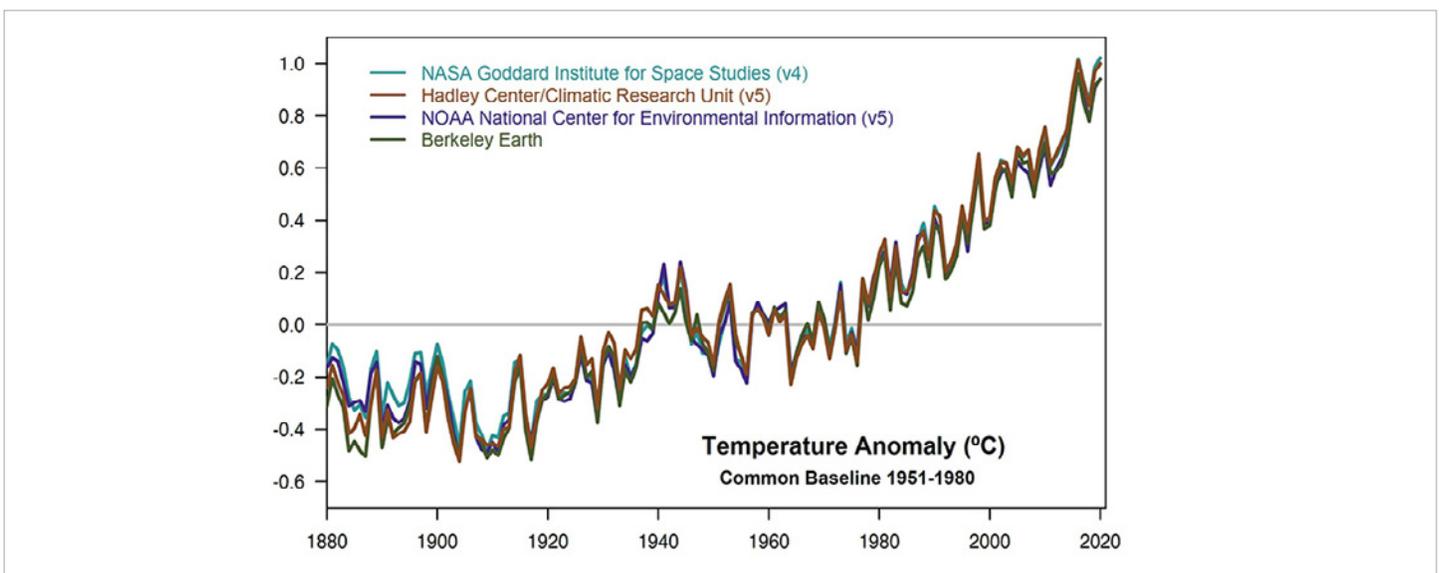


Source: NASA/NOAA

In fact, the majority of the worldwide climate scientists all agree that most of the climate-warming in the recent decades can be attributed to human activities², especially greenhouse gas emissions. Scientists also predict that the global temperature will continue to rise and “the net damage costs of climate change are likely to be significant and increase over time” (IPCC). The NASA Global Climate Change website listed the potential future effects of global climate change, which include more frequent wildfires, longer periods of drought in some regions and an increase in the number, duration and intensity of tropical storms.

Illustration 2: Rapid Rising of Earth’s Average Temperature in the Past Decades

The Earth’s average temperature has increased about 2.05 degrees Fahrenheit (1.14 degrees of Celsius) since the late 19th century. Does two degrees sound like a big deal? Nasa states that the average temperature when the Earth was at the end of the last ice age was only 5 to 9 degrees cooler than today.



Source: NASA/NOAA

² Joint science academies’ statement: Global response to climate change (2005)

The Paris Agreement and the Trend of ESG Investing

On December 12, 2015, parties of the United Nations Framework Convention on Climate Change (UNFCCC) agreed to sign the Paris Agreement to bring all nations into a common cause to combat climate change and adapt to its effects³. The central aim of the Paris Agreement was to keep the global temperature rise within the century by well below 2 degrees Celsius above the pre-industrial levels; and pursue efforts to limit the temperature rise even further to 1.5 degrees Celsius. Additionally, the agreement will also help countries to increase the ability to deal with the impacts of climate change, and make finance flows consistent with a low Green House Gas (GHG) emissions and climate-resilient pathway.

Investors' interests in climate change and other environmental, social and governance (ESG) related matters have surged in recent years. ESG investing, goes beyond the traditional shareholder value theory, focuses on the long-term, non-financial risks and opportunities and seeks to promote social awareness and positive changes by corporations. This means that ESG consideration not only has its moral value but also the economic value proposition, specifically in areas of risk reduction and long-term alpha generation. According to the CFA Institute⁴, the investment community has increasingly recognized that "systematically considering ESG issues will likely lead to more complete investment analyses and better-informed investment decisions".

Table 1: Examples of ESG Issues

ENVIRONMENTAL ISSUES	SOCIAL ISSUES	GOVERNANCE ISSUES
<ul style="list-style-type: none"> Climate change and carbon emissions Air and water pollution Biodiversity Deforestation Energy efficiency Waste management Water scarcity 	<ul style="list-style-type: none"> Customer satisfaction Data protection and privacy Gender and diversity Employee engagement Community relations Human rights Labor standards 	<ul style="list-style-type: none"> Board composition Audit committee structure Bribery and corruption Executive compensation Lobbying Political contributions Whistleblower schemes

Source: CFA Institute

A clear sign for the increasing popularity of ESG investing is the rapid growth of the signatories to the Principles for Responsible Investment (PRI). PRI's signatories are global-based asset owners, investment managers and service providers that are willing to publicly demonstrate their commitments to including environmental, social and governance (ESG) factors in their investment decision making and ownership. According to the latest PRI annual report 2020⁵, the PRI signatory base grew throughout 2020 despite the pandemic. The collective AUM represented by PRI signatories increased by 20%, from US\$86.3 trillion to US\$103.4 trillion as of March 31 2020, in total representing 3,038 signatories.

According to another research piece published by the Harvard law school forum of corporate governance⁶, net flows into ESG funds are continuing to grow across the Atlantic Ocean. In Europe, ESG funds attracted \$132 billion of inflows in 2019⁷. While in U.S., ESG fund inflows topped \$20.6 billion in 2019, nearly four times of the amount in 2018⁸. Moreover, about 70% of ESG funds outperformed in the first four months of 2020⁹, and majority of ESG funds have outperformed the wider market over the past ten years¹⁰.

3 United Nations Climate Change (<https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement>)

4 Environmental, Social and Governance Issues in Investing: A Guide for Investment Professionals, CFA Institute (2015)

5 <https://www.unpri.org/pri/about-the-pri/annual-report>

6 <https://corpgov.law.harvard.edu/2020/08/01/introduction-to-esg/>

7 <https://www.bloomberg.com/news/articles/2020-01-30/european-esg-funds-pulled-in-record-132-billion-in-2019>

8 <https://www.cnbc.com/2020/01/14/esg-funds-see-record-inflows-in-2019.html>

9 "ESG funds continue to outperform wider market," Financial Times (April 3, 2020)

10 "Majority of ESG funds outperform wider market over 10 years," Financial Times (June 13, 2020)

The Nasdaq Future Global Sustainability Leaders Index

The Nasdaq Future Global Sustainability Leaders Index (NQFGSL) is one of the innovative ESG solutions that Nasdaq provides for global investors.

The NQFGSL index is a climate risk focused ESG product. Originally designed for Australian investors but also available for global investors, the index implements a passive portfolio management approach that looks to avoid exposure to the fossil fuel industry and climate change risk, and instead seeks investment in global (excluding Australia) companies considered to be climate leaders.

To be eligible for inclusion in the index, a security must meet the following criteria:

- a member of the Nasdaq Developed Markets Index (NQDM) excluding those listed on an exchange in Australia;
- have a market capitalization of at least \$2 billion USD;
- have a minimum three-month average daily dollar trading volume of \$1 million USD;
- has been identified by the Responsible Investment Committee as a “Climate Leader”;
- passed certain responsible investment screens designed to exclude companies that have direct or significant exposure to the fossil fuel industry or that are engaged in other activities deemed inconsistent with responsible investment considerations (detail outlined below).

The Responsible Investment Committee has played a critical role in the index’s security selection process. It is an external advisory committee responsible for determining the list of securities that pass the “Climate Leader” and responsible investment screens.

To be considered a “Climate Leader”, a company must have a carbon efficiency that places it in the top one-third of companies in its industry (where carbon efficiency is based on the greenhouse gas emissions from a company’s operations, fuel use and supply chain, divided by its annual revenues) or is otherwise a superior performer on Scope 4 carbon emissions (also known as “avoided emissions”).

To pass the responsible investment screens, a company must avoid the following:

Table 2: Responsible Investment Screening Exclusions

INDUSTRY/ACTIVITY	EXPOSURE LIMIT GUIDELINES (% OF TOTAL REVENUE)	EXPLANATORY NOTES
Fossil Fuels	0%	Companies which have fossil fuel reserves, fossil fuel infrastructure, or involved in the mining, extraction, burning of fossil fuels.
Fossil Fuel Service Providers	5% for products and services. Exclude the largest global financiers of fossil fuels, and financiers of significant fossil fuel infrastructure	Companies which provide products, services or finance which is specific to and significant for the fossil fuel industry, as well as companies with very high use of fossil fuels (except where more than 50% of company revenue is derived from renewable energy, resource efficiency, environmental solutions or energy efficient products and services).
Gambling	0% for casinos and manufacture of gaming products 5% for distribution of gambling products	
Tobacco	0% for production or manufacture 5% for sale of tobacco products	
Uranium and Nuclear Energy	0% for uranium mining and nuclear energy 5% for products and services to nuclear energy	

INDUSTRY/ACTIVITY	EXPOSURE LIMIT GUIDELINES (% OF TOTAL REVENUE)	EXPLANATORY NOTES
Armaments and Militarism	0% for manufacture of armaments and weapons 5% for specific and significant services to military and armaments manufacture	
Destruction of Valuable Environments	0%	Companies which have direct negative impact on recognized World Heritage and High Conservation areas.
Animal Cruelty	0%	Companies involved in live animal export, animal testing for cosmetic purposes, factory farming, or controversial animal products (ivory, foie gras etc.).
Chemicals of Concern	0%	Companies which produce or use chemicals of concern recognized by UN Environmental Program, Gold and Silver miners, controversial agricultural chemicals.
Mandatory Detention of Asylum Seekers and for-profit prisons	0%	Companies which operate detention centers or for-profit prisons.
Alcohol	20%	Companies which produce or sell alcohol.
Junk Foods	33%	Companies which produce or sell junk foods.
Pornography	0% for production of pornography	
Human and Labour Rights	n/a	Evidence of human rights violations including child labour, forced labour, sweatshops, bribery and corruption.
Board Diversity	n/a	No women on board of directors.

The index is evaluated in May each year. At each evaluation, the Responsible Investment Committee will identify a new list of globally sustainable companies and the largest 200 stocks by market capitalization are first selected. If less than 5 of the 200 securities are Climate Leaders based on Scope 4 carbon avoidance, then Scope 4 Climate Leader companies will replace the companies with the lowest market capitalization in the index until 5 stocks are Scope 4 Climate Leaders or until there are no additional Scope 4 Climate Leaders to add to the Index.

Finally, the index applies a float adjusted modified market cap weighting approach with single security weight capped at 4% and the aggregated ICB industry weights of the Index cannot exceed the corresponding Industry Weight of the NQDM Index by more than 3%. All the corresponding evaluation and rebalance are made effective after the close of trading on the third Friday in May.

The Nasdaq Future Sustainability Leaders Index Family

The Nasdaq Future Sustainability Leaders Indexes are a family of Nasdaq index products developed under the same Future Sustainability Leaders framework described in the above section. These include:

The Nasdaq Future Global Sustainability Leaders index (NQFGSL) is denominated in Australian dollars and it is available to Australian investors through the BetaShares Global Sustainability Leaders ETF (ETHI AU)¹¹.

The Nasdaq Future Global Sustainability Leaders USD index (NQFGSLUSD) is denominated in U.S. dollars and it is available to Canadian investors through the Horizons Global Sustainability Leaders Index ETF (ETHI CN)¹².

For Australian investors wishing to reduce foreign exchange risk, Nasdaq also has the Nasdaq Future Global Sustainability Leaders Currency Hedged AUD Index (NQFGSLAUDMH) with performance that more or less mimics NQFGSLUSD, the USD version of NQFGSL, but hedged into Australian dollars. The tracking product listed in Australia

¹¹ <https://www.betashares.com.au/fund/global-sustainability-leaders-etf/>

¹² <https://www.horizonsetfs.com/etf/ethi>

is accessible through the BetaShares Global Sustainability Leaders ETF - Currency Hedged (HETH AU)¹³.

Last, but not least, the Nasdaq Future Australian Sustainability Leaders Index (NQFASL) is solely invested in Australian companies classified as “sustainability leaders” and it is accessible through the BetaShares Australian Sustainability Leaders ETF (FAIR AU)¹⁴.

Table 3: The Nasdaq Future Sustainability Leaders Index Family

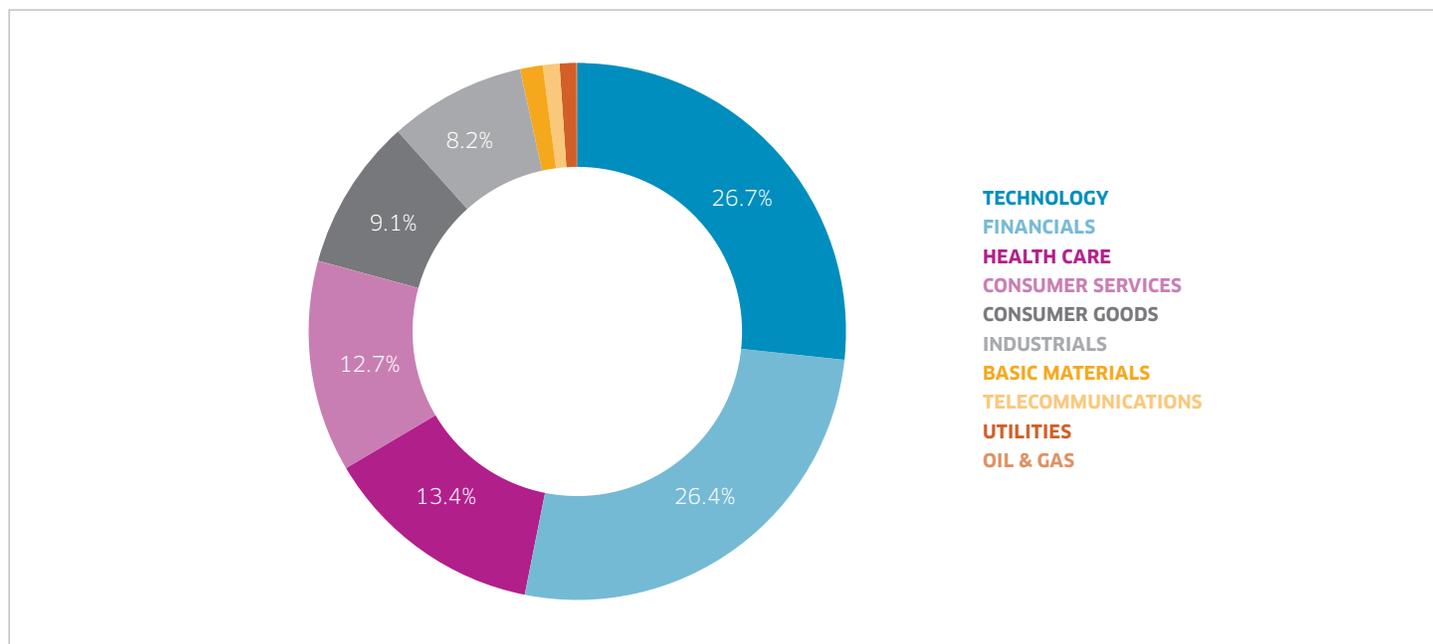
INDEX NAME	INDEX TICKER	ETF SPONSOR	ETF TICKER	CURRENCY
The Nasdaq Future Global Sustainability Leaders Index	NQFGSL	BetaShares	ETHI AU	AUD
The Nasdaq Future Global Sustainability Leaders USD Index	NQFGSLUSD	Horizons	ETHI CN	USD*
The Nasdaq Future Global Sustainability Leaders Currency Hedged AUD index	NQFGSLAUDMH	BetaShares	HETH AU	AUD
The Nasdaq Future Australian sustainability Leaders Index	NQFASL	BetaShares	FAIR AU	AUD

* The ETF (ETHI CN) is hedged into Canadian dollars.

Portfolio and Performance Review

The NQFGSL index is a well-diversified portfolio with Technology (26.7%), Financials (26.4%), Health Care (13.4%), and Consumer Services (12.7%) as its top four sectors. Top four country allocations are US (71%), Japan (8%), Switzerland (4%) and Netherlands (4%). Its top holdings include many well-known names that deem to be the “Climate Leaders”: Apple, NVIDIA, Tesla, MasterCard, Visa, PayPal, etc.

Illustration 3: NQFGSL Breakdown by ICB Sectors as of October 31, 2020

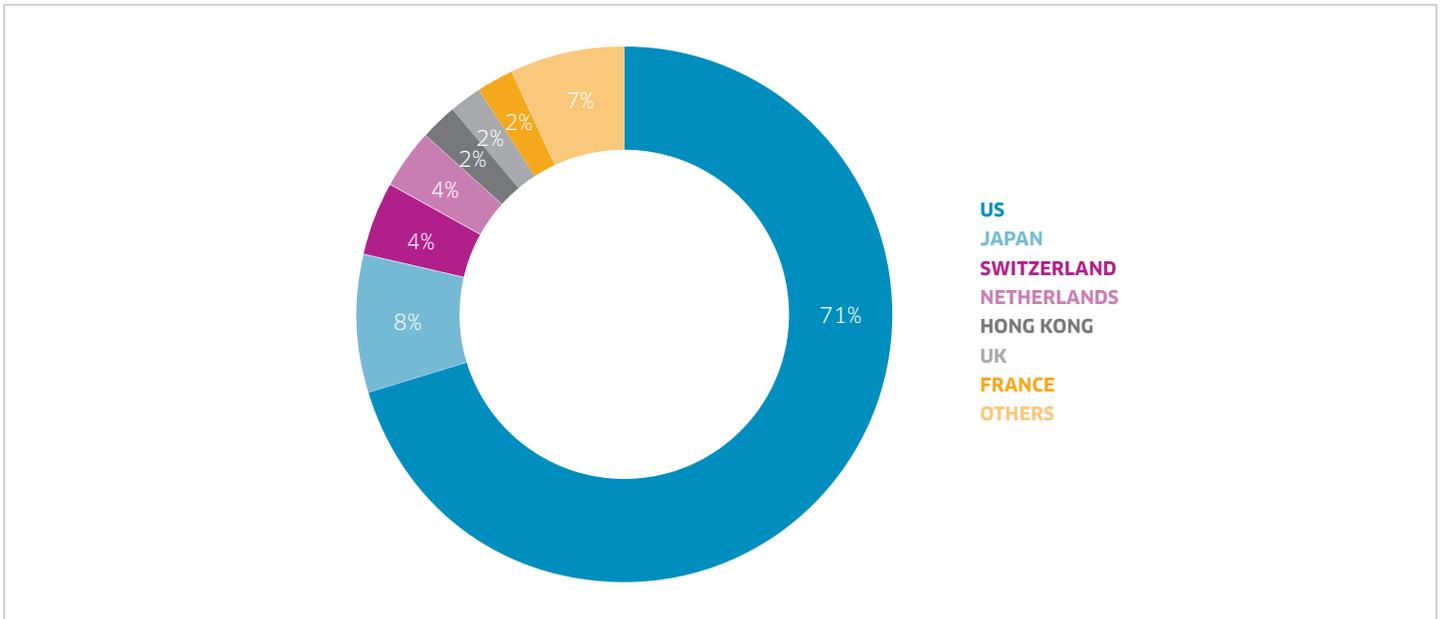


Source: Nasdaq

¹³ <https://www.betashares.com.au/fund/global-sustainability-leaders-etf-currency-hedged/>

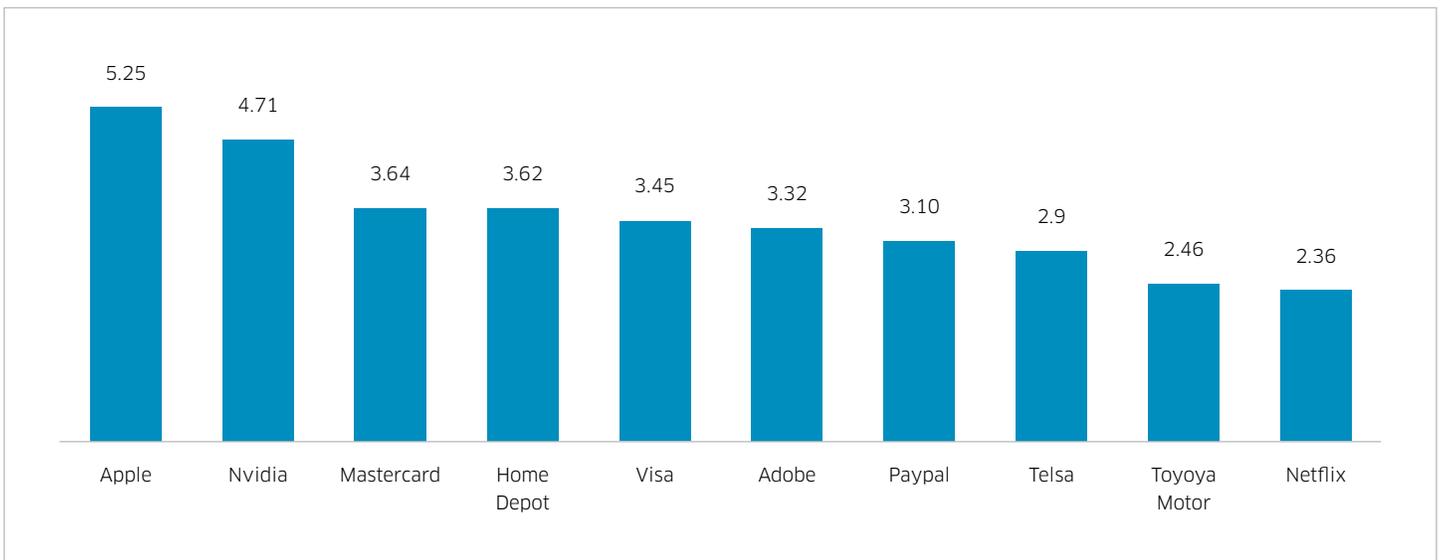
¹⁴ <https://www.betashares.com.au/fund/australian-sustainability-leaders-etf/>

Illustration 4: NQFGSL Breakdown by Countries as of October 31, 2020



Source: Nasdaq

Illustration 5: Top 10 Holdings of the NQFGSL Index as of October 31, 2020

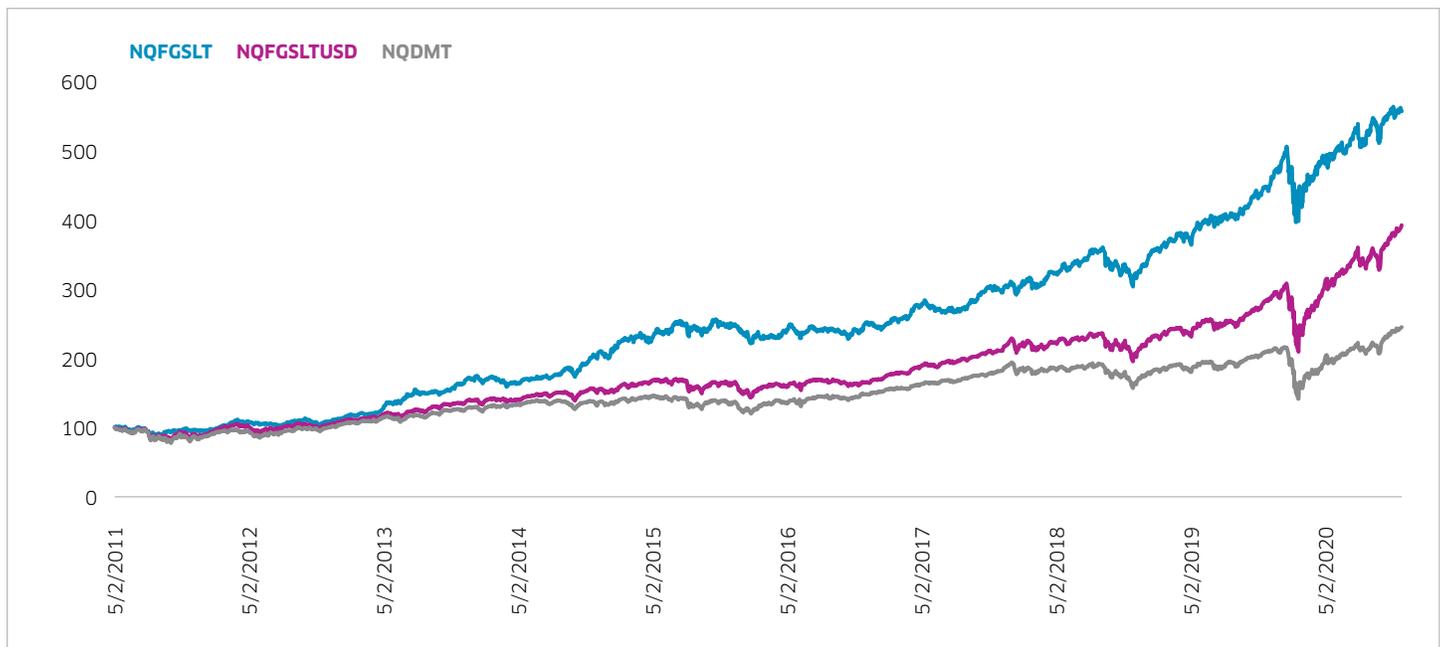


Source: Nasdaq

The Nasdaq Future Global Sustainability Leaders Total Return Index (NQFGSLT) values are calculated in Australian dollars. So it's more appropriate to use the Nasdaq Future Global Sustainability Leaders USD Total Return Index (NQFGSLTUSD) or the Nasdaq Future Global Sustainability Leaders Currency Hedged AUD Total Return Index (NDFGSLTAUDMH) to compare with the Nasdaq Global Development Market Total Return Index (NQDMT), since all of them are calculated in U.S. dollars.

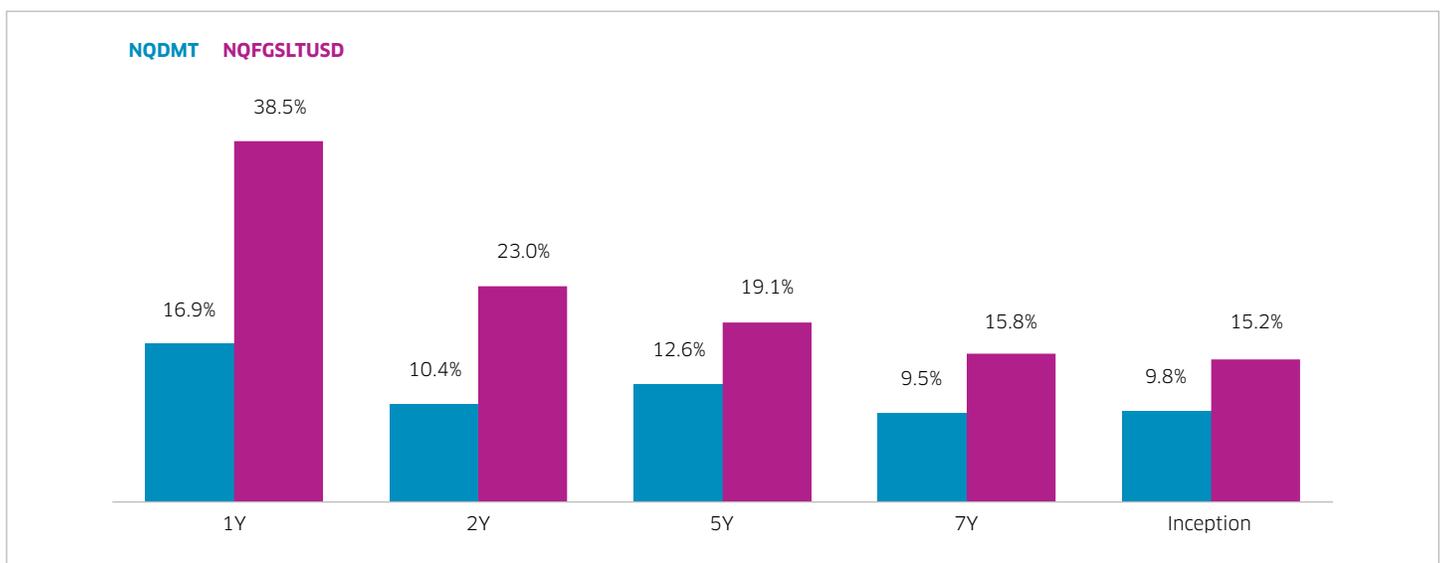
Our performance results (illustrations 6 and 7) have shown that all three Nasdaq Future Global Sustainability Leaders indexes outperformed the Nasdaq Developed Markets Index (NQDMT) within our lookback period from May 2, 2011 to December 31, 2020. Even if we don't take into account the (AUD) currency appreciation, by only using the USD version of the index (NQFGSLTUSD), the Nasdaq Future Global Sustainability Leaders still performed better than the NQDMT with a 5.5% annualized excess return.

Illustration 6: Sustainability Leaders Outperformed the Global Equity Benchmark



Source: Nasdaq total return history from May 2, 2011 to Dec. 31, 2020

Illustration 7: Cumulative Annualized Total Returns



Source: Nasdaq total return history from May 2, 2011 to Dec. 31, 2020

The NQFGSLTUSD has performed better than the NQDMT almost every calendar year since May 2, 2011 (the start day of our comparison), except for 2016. In 2016, the NQFGSLTUSD returned a flat 0.4% vs. the 8.8% from NQDMT. This was triggered by the dramatic recovery of crude oil prices in 2016 (WTI went from \$37.04 to \$53.72, a 45% return) that temporarily boosted stocks prices of many traditional energy companies. The 2020 performance of 38.5% vs. the 16.9% from NQDMT further approved the robustness and attractiveness of the “Climate Leaders” investment concept.

Table 4: Calendar Year and Cumulative Performance Summary

YEAR	NQFGSLT (AUD)	NQFGSLTAUDMH (AUD HEDGED)	NQFGSLTUSD (USD)	NQDMT (USD)
2011	-5.1%	-8.2%	-11.5%	-13.9%
2012	17.3%	23.0%	19.3%	17.9%
2013	54.4%	37.8%	33.0%	28.0%
2014	19.8%	15.7%	9.6%	5.0%
2015	19.7%	10.2%	6.4%	-0.3%
2016	0.8%	1.8%	0.4%	8.8%
2017	18.8%	28.1%	28.4%	23.5%
2018	9.4%	-1.0%	-1.5%	-9.6%
2019	36.9%	35.5%	36.7%	27.5%
2020	26.1%	33.2%	38.5%	16.9%
1Y	26.1%	33.2%	38.5%	16.9%
3Y	23.6%	21.3%	23.0%	10.4%
5Y	17.7%	18.4%	19.1%	12.6%
7Y	18.3%	16.8%	15.8%	9.5%
Inception	19.5%	17.1%	15.2%	9.8%

Source: Nasdaq total return history from May 2, 2011 to Dec. 31, 2020

Conclusion

Climate change is real. Global scientists have warned the catastrophic outcomes in the future if human society doesn't take immediate actions. Paris Agreement is the UN's effort to bring all nations together to combat climate change and adapt to its effects. Investment society's interests to environmental, social and governance (ESG) related matters have also surged. The collective AUM represented by PRI signatories, the investment companies that committed to ESG investment decision making, has increased to US\$103.4 trillion as of March 31, 2020, and in total represented 3,038 signatories.

Nasdaq's innovative ESG offerings include the Nasdaq Future Global Leader Sustainability Leaders Index (NQFGSL). It implements a passive portfolio management approach that avoids exposure to the fossil fuel industry and climate change risk, and instead seeks investment in global climate leaders (excluding Australia) that consist with certain responsible investment screens. The NQFGSL index is a well-diversified index with top four industries focused on Technology, Financials, Health Care and Consumer Services, and geographies focused on US, Japan, Switzerland and Netherlands. Finally, the index outperformed the NQDM benchmark with an annualized excess return of 5.5% in our comparison period from May 2, 2011, to Dec. 31, 2020.

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