



Humankind Benefit Corporation
**2022 Annual
Benefit Report**

Ticker:
HKND

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Investors are never only investors. We are human beings.



Executive Summary

Investors are never only investors. We are human beings. Yet, traditional corporate structures enshrine the investor as the only kind of stakeholder that truly matters, essentially ignoring the fact that investors are people with additional interests beyond those of an abstract investor robot.

We created the **Humankind Benefit Corporation** to help provide an alternative to the traditional investing approach. The Humankind Benefit Corporation is an innovative creature in the corporate world: it is a registered investment company with a single fund, the **Humankind US Stock ETF (Ticker: HKND)**, as well as a Maryland Benefit Corporation with a legal mission that goes beyond just trying to make a profit for its investors. As a Benefit Corporation, we strive to optimize benefits not only for people as investors, but also for people in their roles as customers, employees, and members of society at large.

This is our second Annual Benefit Report, which details the degree to which we believe we have fulfilled our general and specific public benefit missions as of December 31, 2022. This report explains how companies are selected as investment opportunities for HKND, with the goal of maximizing exposure to companies that are benefiting humanity while minimizing exposure to those hurting humanity. The Humankind Benefit Corporation and its investment advisor, Humankind Investments, have also engaged with companies to encourage them to improve their **value for humanity** and have worked to promote the United Nations Principles for Responsible Investment. These activities are further detailed in this Benefit Report.

Introduction

The Humankind Benefit Corporation is the first Benefit Corporation fund family to register with the United States Securities and Exchange Commission.

At Humankind Investments, we use the Benefit Corporation structure to better align the mission of the funds we create with our investors' socially responsible investment goals.

Whereas other fund families are constrained by their mission statements that may only benefit their investors' portfolios, the Humankind Benefit Corporation works to benefit investors, customers, employees, and society at large. In other words, we recognize that we as investors aren't ever only investors — we are also human beings. This is our second Annual Benefit Report. As currently required by Maryland law governing Benefit Corporations, we will report on how we believe we have measured up to our stated mission each year, using a third-party standard. Our chosen third-party standard currently is the UNPRI — six general principles that will help guide our assessment.

As of December 31, 2022, the Humankind Benefit Corporation had a single fund: the Humankind US Stock ETF, that held approximately \$126,149,317 in net assets at that time.¹ In this Annual Benefit Report, we will outline the basis of our assessment of HKND's impact on humanity, as derived from our research. While doing so, we will address the extent to which this fulfills the specific public benefit mission of the Humankind Benefit Corporation, with reference to the UNPRI Principles as our third-party standard.

Humankind
US STOCK ETF

\$126,149,317

in net assets as of December 31, 2022



Public Benefit

According to the Articles of Incorporation of the Humankind Benefit Corporation,² the company was formed with the following utilitarian public benefit in mind:

Creating the specific public benefit of supporting socially optimal economic outcomes. In particular, any corporate actions or investments made by or through the Benefit Corporation will be evaluated through the lens of social responsibility. The Benefit Corporation defines its socially responsible philosophy as follows: the benefits and costs of economic activity to company owners will be evaluated together with the benefits and costs provided to or imposed upon all other stakeholders, including, but not limited to, consumers, employees, and members of society at large, to determine the economic value provided to humankind.

This report will focus on quantitatively assessing the degree to which the specific public benefit shown above has been achieved by the Humankind US Stock ETF, as the sole fund of the Benefit Corporation investment company.

Third-Party Standard

We have chosen the UNPRI's six Principles³ as the third-party standard against which to measure our progress toward achieving our public benefit mission. We believe that these principles are broad enough that they do not conflict with our specific public benefit mission. Furthermore, we believe the UNPRI is a well-intentioned non-profit organization and that there is enough substance in these principles to provide us with a structure to assess the degree to which we are fulfilling our socially responsible investment mission. The UNPRI's Principles are as follows:



Principle 1
We will incorporate ESG issues into investment analysis and decision-making processes.



Principle 2
We will be active owners and incorporate ESG issues into our ownership policies and practices.



Principle 3
We will seek appropriate disclosure on ESG issues by the entities in which we invest.



Principle 4
We will promote acceptance and implementation of the Principles within the investment industry.



Principle 5
We will work together to enhance our effectiveness in implementing the Principles.



Principle 6
We will each report on our activities and progress towards implementing the Principles.

ESG stands for Environmental, Social, and Governance. ESG investing is essentially a catch-all term for many different kinds of socially responsible investing. To show how we have measured up against these Principles, we have organized our assessment into three sections:

01. Selective Investment
covering Principle 1

02. Engagement
covering Principles 2 and 3

03. UNPRI Citizenship
covering Principles 4, 5, and 6





01. Selective Investment

In this section we will detail the kinds of companies that HKND is invested in, as a result of its tracking of the Humankind US Equity Index.⁴ It all comes down to the overall impacts that the individual companies we invest in have on humanity, as measured by the portfolio's Humankind Value. Humankind Value is a proprietary metric that aims to put a dollar value on the economic impacts that companies have on humanity.

Humankind Value

When you look at the top of your brokerage statement and see the value of your investment portfolio, it is important to remember that this number is just one out of many different numbers that can have an economic impact on your life. The insurance premiums that you'll pony up, the medical bills you'll have to pay, your salary, the value of your employment benefits, the money you spend on the goods and services that you need to survive — these and others are all numbers that can be just as impactful, if not more so. So, when we invest, why would we only care about how our investments impact our portfolio? Shouldn't we also think about how companies in which we invest are impacting us in other areas of our lives?

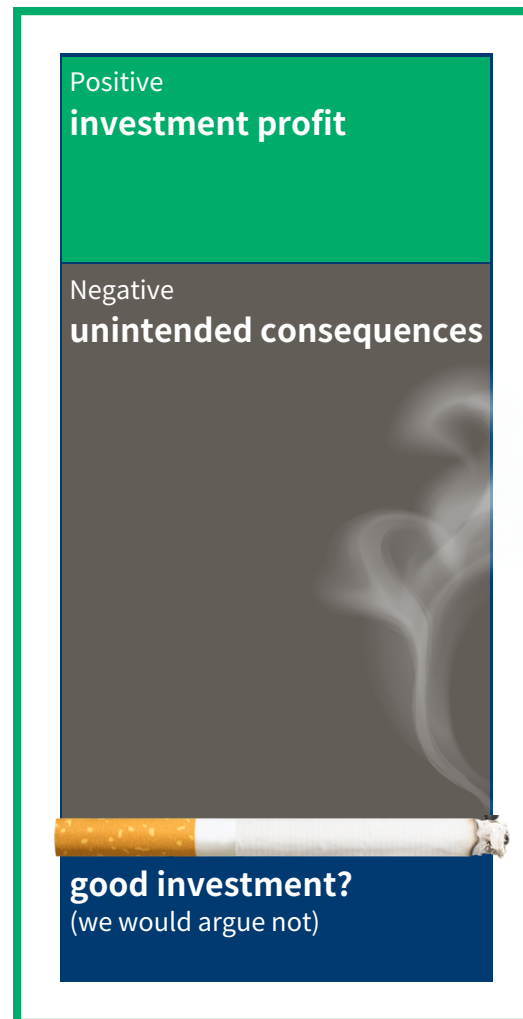
Let's say you invest in a tobacco company — an easy punching bag, to be fair, but it helps to drive the point home. Maybe you make \$1,000 in your investment portfolio as a result of the investment — good so far. But then imagine someone in your family starts smoking that brand of cigarettes and gets sick, and now you have to shell out \$10,000 to help get them well (and that's before taking into account the quality-of-life reduction and stress associated with the whole episode).⁵ **So, the question is — was this a good investment?** We would argue not. This is a simple example of a kind of bad trade that people often make when they myopically focus on their portfolio's investment value. Different types of companies are putting money into our right pockets as investors, while sneaking money out of our left pockets in other areas of our lives. We can't think of a reason why we should let them keep doing things this way. Investors hold the ultimate power over what companies get funding, and they legally control the actions that companies take through the voting power associated with their shares, so we believe it is within our hands as investors to push companies to make a change for the better.

The challenge is that things are not always as clear-cut as the example above. In order to judge how much a company is helping or hurting us in other areas of our lives, we must try to quantify every impact that a company has on people. This is why we created the concept of Humankind Value.

Definition of Humankind Value

A company's Humankind Value is defined as its impact on humanity, including investors, customers, employees, and society. Is the company making a profit for its investors, or are the investors being defrauded? Is the company providing its customers with an inexpensive service that offers great value, or is it selling a toxic product? Is the company treating its employees fairly, or is it engaging in discrimination or wage theft? Is the company providing a free service that helps society, or is it polluting the air that we breathe? We work to put a dollar value on each of these impacts and add them up to arrive at a company's **direct Humankind Value**. Then, we try to account for all the direct Humankind Values associated with each company's supply chain partners, or the **indirect Humankind Value**. Finally, we combine the direct and indirect values into a single total Humankind Value for each company.

Humankind Investments calculates a single dollar value of a company's Humankind Value, which is intended to capture the aggregate worth of a company based upon its economic impact on humanity, defined as investors, customers, employees, and society at large. It's important to understand that this single dollar value of Humankind Value for a company is not a precise measurement of the economic impact that companies have on humanity — rather, it represents a best faith estimate based on our internal model of how these companies behave and what the estimated impact on humanity of their behavior is. In other words, we've created a simplified mathematical representation of the real world, and are using that to derive this single dollar value for a company.



Examples of Specific Factors Considered in Calculating Humankind Value of a Company

Our research process involves accounting for the traditional economic impacts that companies have on investors, customers, and employees, alongside the human impact issues that our researchers work to identify and quantify and to then assign to companies based on their contribution (positive or negative) to, and responsibility for, each issue. The issues that we have covered in our research so far include the following:

- food production and distribution
- water and sanitation access
- healthcare benefits
- greenhouse gas emissions
- free digital services
- air pollution
- tobacco
- alcohol production
- breastmilk substitute production
- firearms manufacturing
- consumer data harvesting
- discrimination
- food addiction
- for-profit healthcare
- gambling
- noise pollution
- nuclear power generation
- opioid production
- predatory lending
- overincarceration
- plastic pollution
- shelter
- slave labor
- travel injuries
- war
- water pollution
- workplace injuries
- adult entertainment
- + among others

Each of these factors is quantified in terms of a dollar value such that the economic impacts of all factors can be meaningfully compared with one another. That enables us to say which issues have larger economic impacts on people's lives and to weight these issues in our analysis accordingly.

In addition to making different issues comparable, this quantitative approach allows us to make a statement about when certain companies become uninvestable from the perspective of humanity. We can provide an estimate as to whether the positive impacts the company is creating outweigh the negative ones.

We ask — if a company, as a whole, is destroying value for humanity year after year, why would we, as humans, ever invest in it? A net negative Humankind Value result for a company in our view naturally precludes it from being considered for investment.

Of course, there's no such thing as a perfect company. Companies that are responsible for some negative impact can still make it into the HKND portfolio if they are, on balance, providing enough positive value so

that it dwarfs the negative value. Nevertheless, there are some general themes that come out of our analysis. Our approach tends to favor companies that are contributing positively by, for example, providing access to food, clean water, healthcare, or free digital services. Meanwhile, companies that hurt people, for example by contributing significantly to climate change or selling toxic products, tend to not make the cut.

Our humanity-first approach broadens the perspective of the investor from "what is good for me as an investor" to "what is good for me as a human being." We believe that more investors taking this approach to investing can lead to more people being better off economically. Practically speaking, different people are impacted by different companies in different ways. However, by working together, we can accomplish something that would be impossible to do alone. One can imagine investors globally making billions of variations of the following agreement: "I won't let my company pollute the river near your town if you won't let your company pollute the air in mine."



HKND's Impact on Humanity

At Humankind, we believe that money has power, and therefore, those who invest it bear responsibility for how their investments impact people.

HKND was constructed by intentionally aiming to optimize its Humankind Value — companies with higher Humankind Values are typically given greater weights in the Humankind US Equity Index, the proprietary index that HKND tracks. It should come as no surprise then that HKND has done well when it comes to the impact that it has on humanity, according to our estimates.

HKND had approximately \$126,149,317 in net assets on December 31, 2022. The breakdown of HKND's industry allocation as compared with that of its broad-based benchmark, the S&P 1500 index, helps to clarify the extra responsibility that we believe HKND's investors had for positive human impacts and reduced responsibility for negative human impacts. These positive impacts and reduced negative impacts are the result of the types of companies HKND invests in, as HKND favors investments in companies with high "humankind value" – a proprietary metric utilized by HKND. Arguably, it is this difference that best expresses the extra positive impact that we believe investors are responsible for as a result of their investment in HKND. Below is a sampling of measurable differences resulting from the industry exposure choices of HKND compared to its broad-based benchmark.

Compared to the holdings in the S&P 1500 index,⁶ as of December 31, 2022, we estimate that HKND investors were responsible for:⁷

- 1,200** more people fed due to agricultural production
- 6,700** more people with access to safe water
- 80** fewer tonnes of coal mined
- 1,700** fewer tonnes of CO2e emitted
- 8,100** fewer tonnes of refined oil produced
- 600,000** fewer cubic meters of natural gas extracted

Of course, HKND investors did not directly cause these impacts. Rather, by investing in this way, they have chosen to be responsible for the actions of the companies that are working to build the world that we all want to live in. As more people invest in this way, the opportunity for even greater impact grows.

02.

Engagement

A key part of the Humankind Benefit Corporation's public benefit mission is to evaluate companies' actions with the goal of supporting socially optimal outcomes. One way for HKND to make an impact is through its advisor, Humankind Investments, by engaging with companies. The advisor engages with them to share how they can improve their impacts on humanity and to encourage them to make those changes.

As of December 31, 2022, Humankind Investments engaged with companies held in the Humankind US Stock ETF in the following ways:



Writing letters to companies



Meeting individually with company representatives



Voting in shareholder meetings

Humankind Investments worked to connect with these companies in a way that aligns with the Fund's public benefit mission. These actions serve to encourage companies in HKND to improve their Humankind Values and related actions. In 2022, Humankind:

- Wrote letters to more than **1,000** companies
- Shared meaningful information interacting with over **30** companies
- Had live meetings with **7** companies

In addition to direct communication, Humankind Investments has engaged the services of a third-party proxy voting firm to help vote the shares of the companies that HKND owns in a socially responsible way. In doing so, **we are working to vote the shares of HKND in a way that we hope will improve the Humankind Value of the companies that it is invested in.**

We believe engagement can help us support socially optimal outcomes. Given the actions taken as described above, we have honored this aspect of our mission in 2022.



03.

UNPRI Citizenship

The Humankind Benefit Corporation chose the UNPRI's Principles as its third-party standard against which it will judge itself in this Annual Benefit Report. By doing so, it bestows additional legitimacy on the Principles. Additionally, it helps to promote the Principles, given that anyone who reads the Annual Benefit Report will also be exposed to the Principles themselves. All in all, the Humankind Benefit Corporation is clearly a strong proponent of the UNPRI.

Generally, HKND, by providing a fund vehicle for others to invest in that is aligned with the UNPRI, is holding itself out as a way for people to invest in accordance with the UNPRI. A variety of investors are shareholders of HKND. By simply providing this investment option for others to use, and by having them use it, we are, by definition, working with others to implement the UNPRI, which fulfills the fifth of the six UNPRI Principles.

Lastly, we expect that this Annual Benefit Report satisfies the UNPRI's final Principle of reporting on the degree to which we are fulfilling the Principles.

HKND's advisor, Humankind Investments, is organized as a Benefit Company under Delaware law. Humankind Investments is also a UNPRI signatory. This Annual Benefit Report also serves to document how Humankind Investments' investment advisory services to the Humankind Benefit Corporation fulfilled the general benefit mission of Humankind Investments by measuring up to its elected third-party standard, which, like that of the Humankind Benefit Corporation, is the UNPRI's Principles.



Conclusion

This is the second Annual Benefit Report of the Humankind Benefit Corporation — the first registered investment company to be structured as a Benefit Corporation. The Humankind Benefit Corporation's ETF, HKND, is composed of investments that, according to our research, provide greater exposure to companies that create more value for humanity. HKND's investment advisor works to engage with companies to encourage them to improve on the value that they provide humanity, as well as to vote the shares owned by HKND in a socially responsible way. In addition, HKND works to promote, implement, and report on its progress in living up to the UNPRI's Principles. We believe that all the activities mentioned here serve to promote the Humankind Benefit Corporation's specific benefit purpose of supporting socially optimal economic outcomes as a member of the investment world. But this is only the beginning.

We are continuously in the process of developing our research further. We are working to launch new funds and to expand our engagement with companies. We are excited to report on our progress in next year's Annual Benefit Report.

We look forward to continuing to report on the steps we are taking to fulfill our public benefit mission to support socially optimal economic outcomes for years to come.



Notes

- ¹ The Humankind US Stock ETF's Annual Shareholder Report, containing information about assets as of December 31, 2022, can be downloaded from www.humankindfunds.com.
- ² The Humankind Benefit Corporation's Articles of Incorporation have been filed with the United States Securities and Exchange Commission and are publicly available here: https://www.sec.gov/Archives/edgar/data/1821080/000114036120018566/brhc10014470_ex99-a1.htm.
- ³ More information about the UNPRI's six principles can be found here: <https://www.unpri.org/about-us/what-are-the-principles-for-responsible-investment>.
- ⁴ HKND is a passively managed ETF that seeks to provide investment results that, before fees and expenses, correspond generally to the total return performance of the Humankind US Equity Index. The Index's methodology is proprietary, owned and compiled by Humankind Investments, LLC, HKND's investment advisor, which is wholly-owned by Humankind USA, LLC, and utilizes an independent index calculation agent, Solactive AG, to calculate, publish and maintain the index market value on a daily basis. The Humankind US Equity Index's Methodology can be downloaded from www.humankindfunds.com.
- ⁵ See www.sciencedirect.com/science/article/abs/pii/S0169500215300490. Medical bills can vary significantly from the cited figure, depending on the patient and their unique circumstances. This example is intended to be illustrative.
- ⁶ The S&P Composite 1500 Index is a broad measure of the investable US equity market, which includes the stocks of large-cap, mid-cap, and small-cap issuer companies. Unless otherwise stated, index returns do not reflect the effect of any applicable fees, expenses, or taxes. It is not possible to invest directly in an index.
- ⁷ Refer to the "Impact Calculations" section located at the end of this document for further details.

Investors should carefully consider the investment objectives, risks, charges and expenses of the Humankind US Stock ETF. This and other important information about the Humankind US Stock ETF is contained in the prospectus, which can be obtained by calling 888-557-6692. The prospectus should be read carefully before investing. The Humankind US Stock ETF is distributed by Northern Lights Distributors, LLC member FINRA/SIPC. Humankind Investments LLC and Northern Lights Distributors, LLC are not affiliated.

Investment Objective: The Humankind US Stock ETF (the "Fund") seeks to provide investment results that, before fees and expenses, correspond generally to the total return performance of the Humankind US Equity Index (the "Index"). The Fund's investment objective may be changed without the consent of the shareholders of the Fund.

Important Risk Information: The Fund is a recently organized, diversified management investment company with limited operating history.

There is no assurance that the Fund will achieve its investment objective, and you can lose money investing in this Fund. The Fund's principal risks include Socially Responsible Investment ("SRI") risk, which is the chance that stocks screened by the Index Sponsor for SRI criteria generally will underperform the stock market as a whole or that the particular stocks selected for the Index will, in the aggregate, trail returns of other mutual funds or ETFs screened for SRI criteria. In tracking the Index, the Fund may, from time to time, invest more heavily in companies in a particular economic sector or sectors, which would subject the Fund to proportionately higher exposure to the risks of that sector. The profitability of companies in the healthcare sector, as traditionally defined, including healthcare equipment and services companies, may be affected by government regulations and government healthcare programs, increases or decreases in the cost of medical products and services, an increased emphasis on outpatient services, demand for medical products and services and product liability claims, among other factors.

The value of your investment in the Fund is based on the values of the Fund's investments, which may change due to economic and other events that affect markets generally, as well as those that affect particular regions, countries, industries, companies or governments. Although the Fund's shares are approved for listing on the NYSE Arca (the "Exchange"), there can be no assurance that an active trading market will develop and be maintained for Fund shares. Although Fund shares are listed for trading on the Exchange, there can be no assurance that an active trading market for such shares will develop or be maintained. The Fund is not actively managed and therefore would not sell an equity security due to current or projected underperformance of a security, industry or sector, unless that security is removed from the Index. 7311-NLD 04242023

Impact Calculations

Data

Impact calculations are derived from data obtained from sources believed to be reliable, including data self-reported by companies or estimated by data aggregators. Sources used for our impact examples are identified in this section. Data used for impact calculations ranges from 2012 – 2022. Impact data coverage may be limited or vary across companies and industries. Humankind makes a best faith effort to conduct its research using the most current data available. Humankind does not guarantee the accuracy, adequacy, or completeness of third-party data.

Rounding

All final answers follow the convention of significant figures. In cases where a final value is precise to one or more decimal places, but has units that are naturally integers, e.g. “number of deaths,” this value is always rounded down to the lower whole number. More information can be found at [https://chem.libretexts.org/Bookshelves/Analytical_Chemistry/Supplemental_Modules_\(Analytical_Chemistry\)/Quantifying_Nature/Significant_Digits](https://chem.libretexts.org/Bookshelves/Analytical_Chemistry/Supplemental_Modules_(Analytical_Chemistry)/Quantifying_Nature/Significant_Digits). All values are in US Dollars, where M=Million, B=Billion, T=Trillion.

Revenue Exposure

For each company in the portfolio, we work to assess their exposure to different industries based on how much revenue they get from each industry. We use NAICS codes to classify the revenue sources. NAICS, or the North American Industry Classification System, is the standard that Federal statistical agencies use to classify businesses. Each company in the portfolio’s revenue exposure is represented as a fraction of the revenue of that company, and then summed together in a weighted fashion based on its weight in the portfolio and the fraction of the company’s enterprise value held in the portfolio. This yields the portfolio’s exposure to that industry. Each holding is associated with its portfolio weight w , its market value v , and an issuing entity. The issuing entity has an enterprise value e and one or more revenue sources. The *portfolio revenue exposure formula* quantifies the extent to which \$1 invested in a portfolio finances the revenue of a given industry. An industry is defined as one or more NAICS six-digit codes. It can be expressed as the sum, over all holdings in a portfolio, of

$$\frac{w_i v_i r_{i, \text{industry}}}{e}$$

In the expression above, $r_{i, \text{industry}}$ is the amount of revenue for the issuing entity from said industry.

Crop Production

The sector for crop production contains industries with the NAICS code 424510 and any NAICS codes beginning with 111. Per \$1 M invested, HKND and its broad-based benchmark, the S&P 1500 (calculated from the SPDR Portfolio S&P 1500 Composite Stock Market ETF, Ticker: SPTM), have crop production revenue exposures of \$6,648 and \$371, respectively. The difference, \$6,277 of crop production revenue, can be converted to a difference in the number of people adequately nourished by crops. Globally, the crop production sector generates \$4.6 T in revenue (<https://www.businesswire.com/news/home/20210909006054/en/Global-Crop-Production-Market-Report-2021-Long-term-Forecast-to-2025-COVID-19-Impact-and-Recovery-to-2030---ResearchAndMarkets.com>) and provides adequate nutrition for 7,234,000,000 people (<https://ourworldindata.org/hunger-and-undernourishment#how-many-people-are-undernourished>). Combining this information, and scaling for a \$126,149,317 investment, yields an increase of 1,200 people adequately nourished: (\$6,277 Crop Revenue / \$1,000,000 investment) (7,234,000,000 people nourished / \$4,600,000,000,000 Crop Revenue) \$126,149,317 investment ≈ 1,200 people nourished.

Water

The sector for water access is represented by NAICS code 221310. Per \$1 M invested, HKND and the S&P 1500 have water revenue exposures of \$2,306 and \$161, respectively. The difference, \$2,145 of water access revenue, can be converted to a difference in the number of people with access to safe drinking water. Globally, 90% of people have access to at least basic drinking water services (<https://data.unicef.org/resources/progress-on-household-drinking-water-sanitation-and-hygiene-2000-2020/>). With 12.5% of this market served by the private sector (https://www.researchgate.net/publication/264635678_Pinset_Masons_Water_Yearbook_2012-13), there is a total revenue of \$36.41 B (<https://www.grandviewresearch.com/industry-analysis/water-treatment-systems-market>). Combining this information, and scaling for a \$126,149,317 investment, yields an increase of 6,700 people with access to safe drinking water: (\$2,145 Water Revenue / \$1,000,000 investment) (12.5% 90% 8,000,000,000 people with water access / \$36,410,000,000 Water Revenue) \$126,149,317 investment ≈ 6,700 people with water access.

Coal Mining

The sector for coal mining contains the NAICS code 211130. Per \$1 M invested, HKND and the S&P 1500 have crude oil and natural gas extraction revenue exposures of \$0 and \$50, respectively. The difference, -\$50 of coal mining revenue, can be converted to a difference in the quantities of coal mined and greenhouse gas emissions produced. Coal mining had global revenue of \$599.573 B in 2022 (<https://www.ibisworld.com/global/market-size/global-coal-mining/>). This corresponds to 7,574,000,000 tonnes of coal mined (<https://www.iea.org/data-and-statistics/charts/global-coal-production-2018-2021>). This activity generates 2.2% of all greenhouse gas emissions, or 2.2% of 59 B tonnes CO₂e (Page 66, https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf). Combining this information, and scaling for a \$126,149,317 investment, yields a decrease of 80 tonnes coal and 14 tonnes CO₂e: (-\$50 Coal Mining Revenue / \$1,000,000 investment) (7,574,000,000 tonnes coal / \$599,573,000,000 Coal Mining Revenue) \$126,149,317 investment ≈ -80 tonnes coal (-\$50 Coal Mining Revenue / \$1,000,000 investment) (2.2% 59,000,000,000 tonnes CO₂e / \$599,573,000,000 Coal Mining Revenue) \$126,149,317 investment ≈ -14 tonnes CO₂e

CO₂e Combined

Calculations from sections on petroleum refinement, crude oil and natural gas extraction, and coal mining yield a reduction of 1,700 tonnes CO₂e.

Petroleum Refineries

The sector for petroleum refineries is represented by NAICS code 324110. Per \$1 M invested, HKND and the S&P 1500 have petroleum refinery revenue exposures of \$18 and \$9,050, respectively. The difference, -\$9,032 of petroleum refinery revenue, can be converted to a difference in the quantities of petroleum refined and greenhouse gas emissions produced. Globally, 4,000 M tonnes of petroleum refinery output is produced (<https://www.iea.org/data-and-statistics/charts/world-refinery-output-by-product-1971-2019>). This activity generates 1.1% of all greenhouse gas emissions, or 1.1% of 59 B tonnes CO₂e (Page 66, https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf). Global revenue for this sector is \$563.3 B (<https://www.globenewswire.com/en/news-release/2022/10/31/2544811/0/en/Global-Oil-Refinery-market-is-projected-to-grow-at-a-CAGR-of-1-9-By-2032-Visiongain-Reports-Ltd.html>). Combining this information, and scaling for a \$126,149,317 investment, yields a decrease of 8,100 tonnes refined oil and 1,300 tonnes CO₂e: (-\$9,032 Refinery Revenue / \$1,000,000 investment) (4,000,000,000 tonnes refined oil / \$563,300,000,000 Refinery Revenue) \$126,149,317 investment ≈ -8,100 tonnes refined oil (-\$9,032 Refinery Revenue / \$1,000,000 investment) (1.1% 59,000,000,000 tonnes CO₂e / \$563,300,000,000 Refinery Revenue) \$126,149,317 investment ≈ -1,300 tonnes CO₂e

Crude Oil and Natural Gas Extraction

The sector for crude oil and natural gas extraction refineries contains the NAICS codes 211120, 213111, 213112, 211130, 486110, and 486210. 211130. Per \$1 M invested, HKND and the S&P 1500 have crude oil and natural gas extraction revenue exposures of \$21 and \$6,028, respectively. The difference, -\$6,007 of crude oil and natural gas extraction revenue, can be converted to a difference in the quantities of crude oil extracted, natural gas extracted, and greenhouse gas emissions produced. 4,200,000,000 tonnes of crude oil are extracted annually (<https://www.statista.com/statistics/265229/global-oil-production-in-million-metric-tons/>). 4,040,000,000,000,000 liters of natural gas are extracted annually (<https://www.statista.com/statistics/265344/total-global-natural-gas-production-since-1998/#:~:text=Global%20natural%20gas%20production%20amounted,world's%20largest%20natural%20gas%20produce rs>). Global annual revenue for this sector is \$5 T (<https://www.ibisworld.com/global/market-size/global-oil-gas-exploration-production/>). These processes generate 4.4% of all greenhouse gas emissions, or 4.4% of 59 B tonnes CO₂e (Page 66, https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf).

Combining this information, and scaling for a \$126,149,317 investment, yields a decrease of 600 tonnes crude oil, 600,000,000 liters natural gas, and 400 tonnes CO₂e: (-\$6,007 Extraction Revenue / \$1,000,000 investment) (4,200,000,000 tonnes crude oil / \$5,000,000,000,000 Extraction Revenue) \$126,149,317 investment ≈ -600 tonnes crude oil (-\$6,007 Extraction Revenue / \$1,000,000 investment) (4,040,000,000,000,000 liters natural gas / \$5,000,000,000,000 Extraction Revenue) \$126,149,317 investment ≈ -600,000,000 liters natural gas (-\$6,007 Extraction Revenue / \$1,000,000 investment) (4.4% 59,000,000,000 tonnes CO₂e / \$5,000,000,000,000 Extraction Revenue) \$126,149,317 investment ≈ -400 tonnes CO₂e

Humankind
US STOCK ETF

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