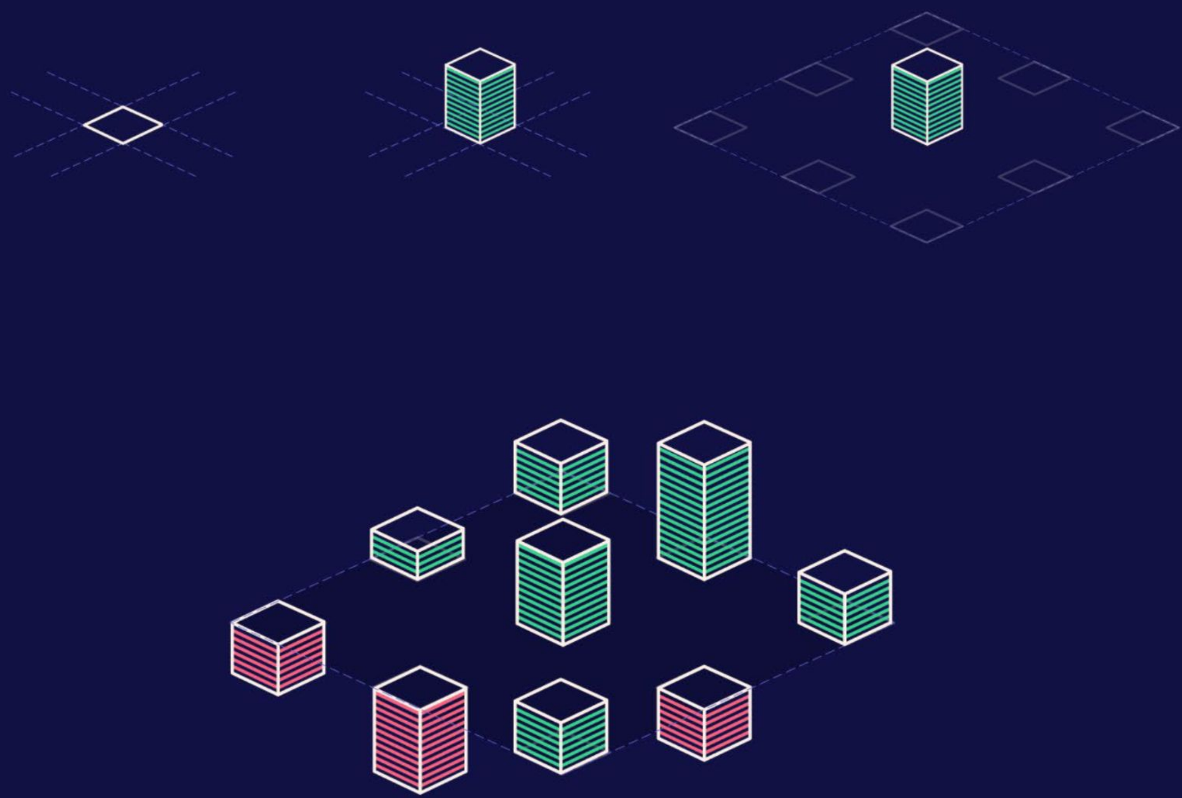
Util

August 2022

Impact Investment **Leaders** and **Laggards**

Highest positive and negative contributing **investment funds** relative to each of the **17 UN Sustainable Development Goals**



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"In a tightly integrated global economy, there are few obvious and absolute 'good' or 'bad' investments."

Introduction

Why does it matter?

For asset managers, 2022 will be remembered as the year that put sustainable investing to the test.

High-profile greenwashing scandals undermined trust in the fund label. Russia's invasion of Ukraine and the ensuing energy crisis called into question its definition. Market volatility, affecting growth stocks disproportionately, destabilised assumptions about compromise-free benefits to people, planet, pocket.

Markets are cyclical, but the challenges on which it sits are structural. There is no 'taking a backseat'. Deloitte estimates climate change inaction will cost the world economy US$178 trillion by 2070. Given the relative scale of capital needed for adaptation and mitigation, a finance industry focused on profit exclusively is not something we can afford.

Growing regulatory action and client demand are powerful tailwinds. They must be met with sophisticated ESG and impact data with which to measure and improve material outcomes.

This report reveals the highest positive- and negative-contributing funds relative to the world's critical issues. More importantly, it shines a light on which industries drive those contributions — and why. We hope to evidence a core thesis of Util: In a complex global economy, there are few obvious, absolute 'good' or 'bad' investments. Inevitable tradeoffs exist in every value chain, the implications of which change depending on the social, environmental, or economic goal in question.

Each objective must be approached uniquely, yet their outcomes overlap considerably. Bundled ESG scores aren't the answer. Nor, however, is the Economist's recent suggestion of "emissions only."

Only with comprehensive company, industry, and fund data can tradeoffs be understood and managed, and positive impact optimised.

Util uses machine learning to measure the impact of every listed company, empowering investors to make better-informed decisions. Objective, universal, and sophisticated, our analytics capture the myriad ways in which 45,000 listed companies — of every size, geography, sector — affect the 17 United Nations Sustainable Development Goals and thousands of other concepts. Investors work with Util to report on portfolios, screen for stocks, and engage with companies against critical issues.

Key findings

What should you know?

01 Bundled scores the Schrödinger's cat of sustainability

There's no such thing as a 'sustainable investment.' Almost every company, industry, and fund impacts some goals positively, others negatively. The difference is explicit among 'economic', 'social', and 'environmental' pillars. Resource extraction, for instance, undermines the latter two but drives vital economic growth in developing countries.

Even on one metric, an investment can be 'good' and 'bad'. Social media supports and undercuts gender equality in different measures. Despite well-documented abuses, it improves women's healthcare and education: distinct targets with correlated outcomes.

Why it matters: Time to unbundle E, S, G; planet, people, prosperity; et al. Each represents a suite of different, even conflicting, objectives. An acronym or catchall concept obscures valuable information and misdirects flows. Without looking at the data inside Schrödinger's box, it's impossible to know and optimise your investment impact.

02 Critical tradeoffs in a very un-green green transition

The transition to a low-carbon economy is a case study in sustainability tradeoffs. Among positive-contributing funds, the biggest commonality is exposure to renewable energy. Conversely, metals & mining, upon which renewable development depends entirely, is among the most consistently held industries of negative-contributing funds.

The inconvenient truth? Solving climate change is, at once, the lynchpin of global sustainable development and its major conundrum. Building renewables at necessary scale is a mine-digging, energy-burning, acid-leaching, waste-dumping business, the effects of which are — like climate change — distributed unevenly. But it is necessary.

Why it matters: Investors need sophisticated impact *and* ESG data to navigate tradeoffs. What are the positive and negative externalities of the industry? Its value chain? In the face of which, how responsibly does a company manage its operations? Its supply chain?

03 Financial inequality impedes sustainable development

Poorer countries are in urgent need of sustainable investment. They bear less responsibility for climate change and are yet more exposed and less resilient to its effects. Equally, investing in developing markets has a far higher relative positive impact.

Counterintuitively, a recent study revealed ESG diverts capital flows *away* from those countries in most dire need of investment.[2] In effect a risk-mitigation tool, ESG is biased towards large companies with reporting resource and against those in developing markets, due to perceived social and governance flaws and straightforward data gaps.

Why it matters: The UN identifies poverty eradication as "the greatest global challenge and an indispensable requirement for sustainable development."[1] Every SDG depends on international prosperity. Investors and governments need better data coverage to activate flows towards, and spur economic growth within, countries that need it most

1. United Nations. Transforming our world: the 2030 Agenda for Sustainable Development.
2. Intellidex. 2022. DRIVERS OF INVESTMENT FLOWS TO EMERGING AND FRONTIER MARKETS.

Framework

The UN Sustainable Development Goals

The 17 UN Sustainable Development Goals (SDGs) are designed as a "blueprint to achieve a better and more sustainable future for all". Established in 2015, they have a 'due date' of 2030. Each goal has a number of sub-targets (169 total), focused on "outcomes" (what do we want?) or "means of achieving" (how do we get there?) and indicators (232 total), which measure **progress towards the goals.**

Methodology

Util methodology

We apply natural-language processing to 120 million peer-reviewed texts to extract relationships between any product and the SDGs, their sub-targets, and an underlying 2,000 concepts. Companies are evaluated as an aggregation of their product revenues; funds, their constituent holdings. Results are adjusted for the geography in which a product is sold, taking into account its regional impact.

Report universe

We evaluate all US-domiciled equity funds as an aggregation of their holdings, per latest filings (at time of writing). Positive funds drive, negative funds undercut, progress towards the SDG. Statistics about industries or products relating to SDGs derive from Util's 120 million peer-review texts. Results are geographically adjusted, meaning companies are afforded a greater weight if they operate in regions where products have a greater impact. This is reflected in the funds data relative to each SDG.

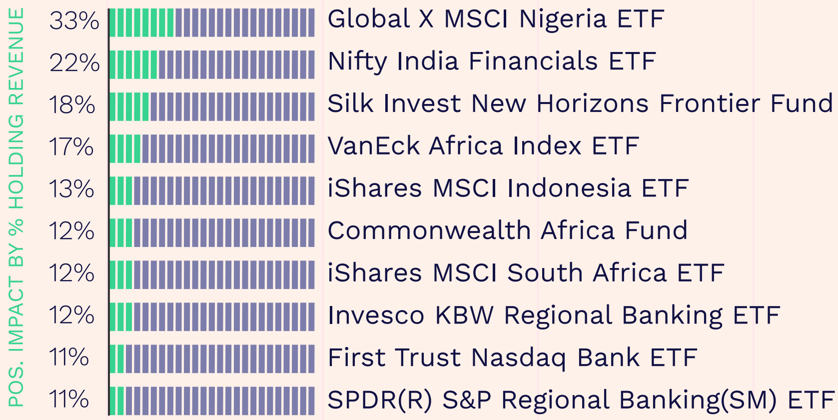
01 **No Poverty**

End poverty in all its forms everywhere

Targets aim to improve climate resilience and access to economic resources and financial services. Income inequality between nations is the primary determinant of income inequality within nations. Those rich in resources are, frequently, poor in capital: Commodity exportation is associated with price volatility, currency strength, and industry exploitation. Critically, the UN observes nations facing the highest adversity from climate change (the primary driver of which is fossil fuels) are least equipped to bear the cost.

SDG 01 **Leaders**

Highest positive contributors



Industry exposure

Positive contributors share a moderate exposure to **banking** and **insurance**. Access to **credit** and **investment** reduces **income inequality** and fast tracks **economic growth** in developing markets, while mitigating **fiscal stress** on **households** and **businesses**. **Insurance** increases **community** and **household resilience** to and protection from **disaster risk**, which is increasingly crucial due to **climate change**.

SDG 01 **Laggards**

Highest negative contributors

Industry exposure

Negative contributors share a moderate exposure to upstream **oil & gas** and **metals & mining**. Extractive industries contribute to **poverty, inequality, conflict,** and **corruption** in the regions in which they operate. They also reduce **agricultural productivity** and **access to water**. **Fossil fuel consumption** is, moreover, the primary cause of **climate change**, the cost of which hits developing countries hardest.

02 Zero Hunger

End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Targets aim to make food more accessible; agriculture, more productive, sustainable, and resilient. Poverty is the foremost impediment to food access. As they do for poverty, extractive industries have manifold effects on food production. Mismanaged operations lay waste to land. Reliance on fertilizers and fossil fuels ties crop yield to that of other commodities. Finally, two of the greatest threats to food security — climate change and conflict — are exacerbated by the world's dependence on fossil fuels.

SDG 02 **Leaders**

Highest positive contributors

Industry exposure

Positive contributors share a moderate exposure to **agriculture** and **food distribution,** as well as **renewable energy companies.** Applied to agriculture, **renewables** are associated with **sustainable food security**. **Agricultural biotechnology** increases **food supply** and **security**, too, but the degree to which abundant supply minimises global **hunger** and **famine** depends on effective **food distribution.**

SDG 02 **Laggards**

Highest negative contributors

Industry exposure

Negative contributors share a high exposure to upstream **oil & gas** and **metal & mining**. The **mining industry** 'crowds out' **farmland** and pollutes **rivers** and **crops**, perpetuating regional **environmental degradation** and **food insecurity**. Negative impact is amplified across the value chain. **Fossil fuels** are the primary cause of **climate change**, which causes **drought** and thus **famine** in developing countries.

03 **Good Health & Wellbeing**

Ensure healthy lives and promote well-being for all at all ages

Targets aim to reduce premature death and disease and improve health coverage and financing. COVID-19 catalysed a dramatic evolution in healthcare innovation but underscored significant geographic disparities in access. The UN warns these grow more material as climate change (driven, primarily, by fossil fuel emissions) erodes health determinants — clean air, drinking water, food, and shelter — and aggravates disease. Better infrastructure, particularly in developing countries, is a prerequisite to universal coverage.

SDG 03 **Leaders**

Highest positive contributors

Industry exposure

Positive contributors share a high exposure to **healthcare, pharmaceuticals** and **biotechnology**. All three industries promote **longer** and **better-quality lives** via the prevention and treatment of **disease, illness** and **injury**. **Insurance** and **telecommunications** are also well represented among positive contributors as they provide **financial risk protection** and **access to healthcare systems**, respectively.

SDG 03 **Laggards**

Highest negative contributors

Industry exposure

Negative contributors share a high exposure to **oil & gas** and **metals & mining**. Extractive industries generate hazardous **water** and **land pollution** on site, and **fossil fuels** generate additional **air pollution** when burned. Detrimental to human health, **pollution** causes **cancer, stroke** and **respiratory** and **cardiovascular disease**. **Fossil-fuel emissions**, alone, account for 20% of **annual deaths** globally.[1]

1. Karn Vohra, Alina Vodonos, Joel Schwartz, Eloise A. Marais, Melissa P. Sulprizio, Loretta J. Mickley. Global mortality from outdoor fine particle pollution generated by fossil fuel combustion. 2021. Environmental Research, Volume 195.

04 Quality Education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Targets aim to equip the population with education and skills for upward socioeconomic mobility. Improving access to education via digital learning improves economic opportunity in developing countries, attenuating income and gender inequalities. The UN emphasises that access is just one, albeit important, component of SDG 4. Digitisation and globalisation have accelerated the pace of economic change and disruption, requiring new skills of the global workforce. Education systems must keep pace.

SDG 04 **Leaders**

Highest positive contributors

Industry exposure

Positive contributors share a moderate exposure to **telecommunications**, which has transformed contemporary education. As **digital adoption** lowers barriers to **Internet access**, **literacy** and **academic performance** are rising in rural regions. Globally, the shift is one of both function and form. 'Any time, any place, any pace' **information** engenders more **democratic**, **collectivist** and **collaborative learning**.

SDG 04 **Laggards**

Highest negative contributors

Industry exposure

Negative contributors share a small exposure to **alcohol** and **tobacco** via the **consumer staples sector.** Excessive or chronic **alcohol consumption** can lead to **memory** and **learning deficits**, as well as **poor impulse control. Prenatal tobacco exposure**, meanwhile, is associated with **neurocognitive** and **behavioral problems** that can disrupt **learning** and **school performance** in childhood.

05 Gender Equality

Achieve gender equality and empower all women and girls

Targets aim to empower women through healthcare, technology, and economic rights and access. Widespread discrimination and violence (the latter experienced by one in three women, globally) are chief barriers to gender equality. Notwithstanding well-documented abuses, technology is, according to the UN, vital to closing the gender gap. It facilitates access to education and healthcare, and elevates women's rights in policy and media. Today, however, men are 21% to 52% more likely to have Internet access.

SDG 05 **Leaders**

Highest positive contributors

Industry exposure

Positive contributors share a moderate exposure to **healthcare** and **telecommunications**. Globally, **healthcare** is associated with better **female** and **maternal health**, **reproductive rights,** and **access to contraception**. **Telecommunications**, including **social media**, is associated with higher adoption of **healthcare** and **contraception**, as well as **equal rights, feminism** and **freedom of speech.**

SDG 05 **Laggards**

Highest negative contributors

Industry exposure

Negative contributors share a moderate exposure to **tobacco** and **alcohol** via the **consumer staples sector. Tobacco** increases the risk of **cervical cancer** and — more so for women than men — **cardiovascular** and **respiratory disease**. **Tobacco** and **cannabis** are associated with **infertility; alcohol,** an eightfold increase in the likelihood of **domestic abuse,** and high rates of **assualt**, **rape,** and **femicide**.[1]

1. Phyllis Sharps, Jacquelyn Campbell, Doris Campbell, Faye Gary, Daniel Webster. The Role of Alcohol Use in Intimate Partner Femicide. 2001. The American Journal on Addictions. 10. 122 - 135.

06 Clean Water & Sanitation

Ensure availability and sustainable management of water and sanitation for all

Targets aim to make water safe and affordable by improving water quality, treatment, and efficiency. Over two billion people lack clean drinking water; over four billion, sanitation. By 2025, 50% of the world's population will live in water-stressed areas:[1] a climate change-induced crisis that aggravates precarious water systems in developing nations. As clean water improves hygiene, health and so prosperity, the levers identified by the UN — technology and management — are imperatives both economic and humanitarian.

SDG 06 **Leaders**

Highest positive contributors

POS. IMPACT BY % HOLDING REVENUE	
34%	Global X Wind Energy ETF
33%	Global X Solar ETF
31%	Fidelity Clean Energy ETF
31%	Invesco Solar ETF
28%	Global X YieldCo & Renewable Energy Income ETF
28%	Global X Renewable Energy Producers ETF
25%	Global X Clean Water ETF
23%	Global Clean Equity Fund
23%	Ecofin Global Renewables Infrastructure Fund
23%	Kayne Anderson Renewable Infrastructure Fund

Industry exposure

Positive contributors share a high exposure to **water utilities** and **renewables**. Better **infrastructure** improves **water access,** while **treatment technologies** — such as **renewable desalination** — alleviate **water scarcity**. **Renewables** reduce **water stress** on the demand side, too. As an alternative to nuclear and fossil fuel thermal plants, **renewables** are a far less **water-intensive** source of electricity.

SDG 06 **Laggards**

Highest negative contributors

NEG. IMPACT BY % HOLDING REVENUE	
61%	First Trust Natural Gas ETF
61%	Invesco Dynamic Energy Exploration & Production ETF
60%	iShares MSCI Global Gold Miners ETF
59%	iShares U.S. Oil & Gas Exploration & Production ETF
59%	WisdomTree Efficient Gold Plus Gold Miners Strategy Fund
59%	U.S. Global GO GOLD and Precious Metal Miners ETF
58%	VanEck Gold Miners ETF
58%	Sprott Gold Miners ETF
58%	First Trust Nasdaq Oil & Gas ETF
57%	Rydex Precious Metals Fund

Industry exposure

Negative contributors share a very high exposure to upstream **oil & gas** and **metals & mining**. **Metal mining** depletes and contaminates local **water resources** via **ore processing** and **wastewater discharge**, respectively. Similarly, **oil mining** has a twofold negative impact. **Fracking** creates **water pollution** locally. **Fossil fuels** are the leading cause of **climate change**, itself the leading cause of **water stress** globally.

1. Alberto Boretti, Lorenzo Rosa. Reassessing the projections of the World Water Development Report. 2019. Clean Water 2, 15.

07 Affordable & Clean Energy

Ensure access to affordable, reliable, sustainable and modern energy for all

Targets foster research, technology, and investment in clean energy as a share of global energy mix. SDG 7 is a paradox. It reflects the bigger paradox inherent in the SDG framework: namely, how do you meet social, environmental, and economic goals collectively? Affordable and reliable energy is the bedrock of socioeconomic development and the driving target, but the UN advances the vital role of clean energy technology and infrastructure. Without it, temperatures climb and social and economic goals suffer.

SDG 07 **Leaders**

Highest positive contributors

POS. IMPACT BY % HOLDING REVENUE	
39%	Global X Wind Energy ETF
38%	Fidelity Clean Energy ETF
37%	Global X YieldCo & Renewable Energy Income ETF
37%	Global X Solar ETF
37%	Global X Renewable Energy Producers ETF
36%	MainStay VP Fidelity Institutional AM Utilities Portfolio
36%	VIP Utilities Portfolio
36%	Fidelity Advisor Utilities Fund
36%	Ecofin Global Renewables Infrastructure Fund
36%	Fidelity Select Utilities Portfolio

Industry exposure

Positive contributors share a high exposure to **energy distribution**: primarily **renewables**, but also **natural gas**. While **renewable energy** is more **affordable** and **sustainable** than fossil fuels in theory, high upfront investment in infrastructure and variable output means it is not universally **accessible** and **efficient**. **Natural gas** and **biofuel** are two energy sources that straddle 'affordable' and 'clean'.

SDG 07 **Laggards**

Highest negative contributors

NEG. IMPACT BY % HOLDING REVENUE	
0%	N/A
0%	N/A
0%	N/A
0%	N/A
0%	N/A
0%	N/A
0%	N/A
0%	N/A
0%	N/A
0%	N/A

Industry exposure

While many funds contribute nothing at all to SDG 7, none of the funds, companies, or products in our universe is an active negative contributor. To contribute in any direction, a fund must have exposure to **energy**. Because, however, every source of **energy** — inevitably one or any blend of affordable, reliable, sustainable, or modern — facilitates **energy access** invariably, few products or companies undercut SDG 7.

08 Decent Work & Economic Growth

Promote sustained, inclusive, sustainable economic growth, full and productive employment and decent work

Targets promote international trade, job creation, and enterprise finance to lift national economies. The relative impact of economic growth is most dramatic in the developing world, which is singled out and set an economic target of 7% annual GDP growth by the UN. For many resource-rich developing countries, extractive industries are a chief source of employment and revenue, accounting for a major share of GDP. Given the mineral demands of the the energy transition, they will continue to have outsized importance.

SDG 08 **Leaders**

Highest positive contributors

POS. IMPACT BY % HOLDING REVENUE	
51%	Global X MSCI Pakistan ETF
45%	U.S. Global GO GOLD and Precious Metal Miners ETF
44%	iShares MSCI Peru ETF
44%	Commonwealth Africa Fund
43%	iShares MSCI South Africa ETF
43%	Amplify Pure Junior Gold Miners ETF
42%	WisdomTree Efficient Gold Plus Gold Miners Strategy Fund
41%	VanEck Gold Miners ETF
41%	Midas Fund
41%	Sprott Gold Miners ETF

Industry exposure

Positive contributors share a high exposure to **metals & mining** and moderate exposure to **insurance**. The **metals & mining** industry is associated with higher **productivity** and **sustainable economic development**. It is a key driver of **employment**, particularly in developing countries, where **insurance**, too, supports **sustainable economic development**, **capital accumulation** and **productivity growth**.

SDG 08 **Laggards**

Highest negative contributors

NEG. IMPACT BY % HOLDING REVENUE	
18%	KraneShares CICC China Consumer Leaders Index ETF
17%	Global X MSCI China Consumer Staples ETF
13%	USA Mutuals Vice Fund
11%	iShares MSCI Belgium ETF
10%	B.A.D. ETF
9%	Krane UBS China A Share Fund
9%	Pacer CSOP FTSE China A50 ETF
8%	AdvisorShares Vice ETF
7%	UBS All China Equity Fund
6%	John Hancock Funds Fundamental Global Franchise Fund

Industry exposure

Negative contributors share a moderate exposure to **alcohol** (well-represented in China's indices) via the **consumer staples sector**. Excessive **alcohol consumption** impedes **productivity, economic growth,** and **educational attainment** and **employment**, while fuelling **disease, workplace accidents** and **poor health.** Its **global economic cost** is estimated at 2.6% GDP, of which 61.2% is due to **productivity loss**.[1]

1. Jakob Manthey, Syed Ahmed Hassan, Sinclair Carr, Carolin Kilian, Sören Kuitunen-Paul, Jürgen Rehm. What are the Economic Costs to Society Attributable to Alcohol Use? A Systematic Review and Modelling Study. 2021. PharmacoEconomics.

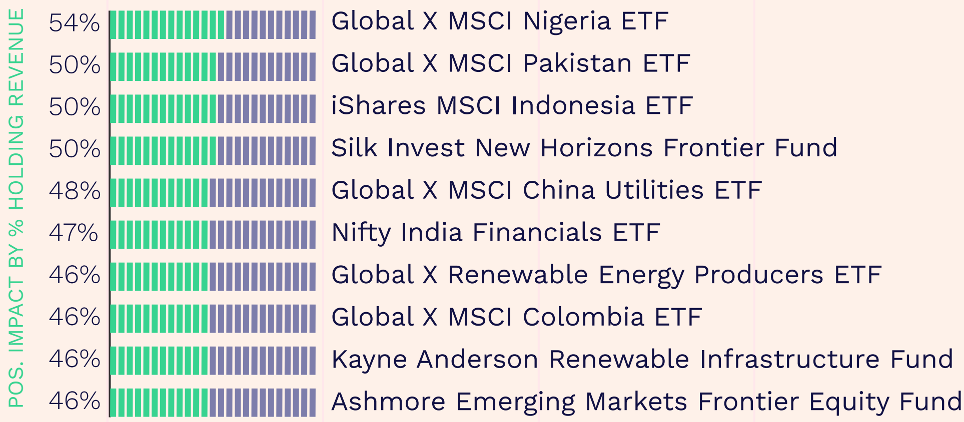
09 **Industry, Innovation & Infrastructure**

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Targets aim to activate finance and research to make industry and infrastructure more sustainable. Manufacturing — particularly of technology — is a core driver of industry, innovation, and infrastructure and key to unlocking the SDGs. Investment in clean energy technology and infrastructure will simultaneously unlock economic growth and mitigate the social, environmental, and economic effects of climate change. This presents the mining industry with both an opportunity and challenge to improve sustainable operations.

SDG 09 **Leaders**

Highest positive contributors



Industry exposure

Positive contributors share a very high exposure to **renewables** and **materials**, the latter well represented in emerging market indices. **Raw materials** drive **economic, social and technological advancement. Energy, metal, and chemical commodities** underpin **industrialisation** and **breakthrough innovation**, including of **renewable energy**: itself a driver of **sustainable infrastructure and industrialisation.**

SDG 09 **Laggards**

Highest negative contributors

Industry exposure

Negative contributors share a high exposure to **metals & mining.** While the industry supports economic growth, it is not associated with ***sustainable* industrialisation** nor ***resilient* infrastructure**: two key metrics for SDG 9. The industry, particularly **gold mining,** has had a significant detrimental impact on the **environment** and **biodiversity**, as well as **human health** in resource-rich mining regions.

10 **Reduced Inequalities**

Reduce inequality within and among countries

Targets promote social, political, and financial initiatives, especially in and of developing countries. While SDG 10 takes aim at social and political discrimination, particularly by sex, disability, and race, the majority of its targets foster financial inclusion. Equitable prosperity is the bedrock upon which social equality thrives. Accordingly, the UN aims to close income inequality between and among countries, improving, for developing nations, trade conditions, institutional representation, and financial access.

SDG 10 **Leaders**

Highest positive contributors

POS. IMPACT BY % HOLDING REVENUE	
34%	iShares MSCI Indonesia ETF
34%	iShares MSCI Kuwait ETF
32%	Hennessy Small Cap Financial Fund
29%	Invesco KBW Regional Banking ETF
29%	Global X FTSE Southeast Asia ETF
29%	First Trust NASDAQ ABA Community Bank Index Fund
29%	SPDR(R) S&P Regional Banking(SM) ETF
28%	John Hancock Regional Bank Fund
28%	RMB Mendon Financial Services Fund
27%	iShares U.S. Regional Banks ETF

Industry exposure

Positive contributors share a high exposure to **banking** and moderate exposure to **telecommunications.** Access to **credit** eases **income inequality** and, by extension, improves **social equity and stability** and supports **economic development**. **Digital** and **financial access** are symbiotic: **Financial inclusion** (and the socioeconomic benefits thereof) rise with **mobile** and **Internet** adoption. **Fintech** is a crucial bridge.

SDG 10 **Laggards**

Highest negative contributors

NEG. IMPACT BY % HOLDING REVENUE	
37%	U.S. Global GO GOLD and Precious Metal Miners ETF
37%	iShares MSCI Global Gold Miners ETF
36%	WisdomTree Efficient Gold Plus Gold Miners Strategy Fund
36%	VanEck Gold Miners ETF
36%	Sprott Gold Miners ETF
36%	Rydex Precious Metals Fund
35%	Global Gold Fund
33%	iBET Sports Betting & Gaming ETF
32%	Roundhill Sports Betting & iGaming ETF
32%	VanEck Gaming ETF

Industry exposure

Negative contributors share a high exposure to **metals & mining**. **Mine** (unlike **oil & gas**) **production** creates **national income inequality** on a gross and net basis and drives **gender inequality, fiscal instability**, and **corruption**. Often, benefits fail to lift the welfare of mining communities, which may be trapped in **cycles of poverty**. **Gambling funds** are highly represented among SDG 10 laggards, as **gambling** exacerbates poverty.

11 Sustainable Cities & Communities

Make cities inclusive, safe, resilient, and sustainable

Targets aim to improve municipal housing, transport, and health, and broaden financial access. Access to financial services has the most dramatic relative impact in the developing world, where insurance and credit can dramatically improve living conditions. (By contrast, financial services can exaggerate inequality in developed markets.) Climate change is a core consideration for SDG 11 and concern for developing countries. The UN highlights disaster risk management (e.g. insurance) as a key resilience builder.

SDG 11 **Leaders**

Highest positive contributors

POS. IMPACT BY % HOLDING REVENUE	
41%	Nifty India Financials ETF
40%	Global X MSCI Nigeria ETF
33%	Silk Invest New Horizons Frontier Fund
32%	iShares MSCI Indonesia ETF
29%	Global X MSCI China Financials ETF
27%	KraneShares MSCI China Clean Technology Index ETF
27%	VanEck Africa Index ETF
27%	iShares MSCI Qatar ETF
26%	SPDR(R) S&P Regional Banking(SM) ETF
26%	Invesco KBW Regional Banking ETF

Industry exposure

Positive contributors share a high exposure to **banking** and **insurance.** At a state level, access to **credit** drives **sustainable economic development** and **social stability**. **Financing** stimulates **rural and agricultural development**, while **mortgage financing** is associated with **affordable, quality housing** and fewer **slums**. **Insurance** plays a leading (and increasingly crucial) role in **disaster risk reduction**.

SDG 11 **Laggards**

Highest negative contributors

NEG. IMPACT BY % HOLDING REVENUE	
45%	iShares MSCI Global Gold Miners ETF
43%	WisdomTree Efficient Gold Plus Gold Miners Strategy Fund
43%	VanEck Gold Miners ETF
42%	Amplify Pure Junior Gold Miners ETF
42%	USAA Precious Metals and Minerals Fund
41%	Midas Fund
41%	Sprott Gold Miners ETF
40%	Global Gold Fund
40%	U.S. Global GO GOLD and Precious Metal Miners ETF
39%	Global X Silver Miners ETF

Industry exposure

Negative contributors share a high exposure to **metals & mining** and moderate exposure to **oil & gas.** Both industries cause **environmental degradation.** Particularly in developing countries, **mine production** displaces and contaminates **freshwater sources and arable land**. In dense cities, widespread use of **petroleum products** in transport and industry creates **air pollution** that erodes **civilian health**.

12 Responsible Consumption & Production

Ensure sustainable consumption and production patterns

Targets encourage resource efficiency via responsible waste management and sustainable energy. The objective of SDG 12 is to mitigate the “triple planetary crises” of climate change, biodiversity loss, and pollution, easing poverty in the process. Of particular focus is resource waste, including that of food and energy, and the management of toxic waste and chemicals. The shift to low-carbon economy through renewable investment and infrastructure is the lynchpin of more sustainable global consumption patterns.

SDG 12 **Leaders**

Highest positive contributors

POS. IMPACT BY % HOLDING REVENUE	
30%	Fidelity Clean Energy ETF
29%	Global X Hydrogen ETF
29%	Defiance Next Gen H2 ETF
28%	Invesco Solar ETF
26%	Global X YieldCo & Renewable Energy Income ETF
26%	Global X CleanTech ETF
25%	Global X Renewable Energy Producers ETF
25%	Global X Solar ETF
25%	VanEck BDC Income ETF
24%	Global X Wind Energy ETF

Industry exposure

Positive contributors share a high exposure to **renewables** and associated **infrastructure.** Harnessing **water, wind, thermal,** and **solar power** is an essential step towards achieving **global sustainable energy**: the bedrock for environmentally responsible **consumption and production.** Supporting **infrastructure and technology**, such as **distributed generation**, is key to improving renewable **energy distribution.**

SDG 12 **Laggards**

Highest negative contributors

NEG. IMPACT BY % HOLDING REVENUE	
41%	Midas Fund
39%	iShares MSCI Global Gold Miners ETF
39%	Invesco Dynamic Energy Exploration & Production ETF
38%	WisdomTree Efficient Gold Plus Gold Miners Strategy Fund
37%	VanEck Oil Refiners ETF
37%	VanEck Gold Miners ETF
37%	First Trust Natural Gas ETF
36%	iShares U.S. Oil & Gas Exploration & Production ETF
36%	USAA Precious Metals and Minerals Fund
35%	Rydex Precious Metals Fund

Industry exposure

Positive contributors share a high exposure to **metals & mining** and upstream **oil & gas.** Both are responsible for **toxic waste** and **resource depletion**. **Mine production** is associated with **biodiversity, forest, and land loss**. Its **‘tailing’ waste** contaminates **rivers and crops**. **Drilling and refining** generates **waste** and **accidental spills**, while **fossil fuel consumption** exacerbates **pollution** and **climate change**.

13 Climate Action

Regulate emissions and promote developments in renewable energy

Targets foster mitigation and adaptation strategy and technology as solutions to minimise risk. Global development depends on affordable energy. Equally, its greatest threat is climate change. Replacing high-emission with low-emission energy is, therefore, a global imperative, but it will not halt climate risk. Mitigation may enjoy more publicity, but the UN recognises adaptation — the annual cost of which could hit $300 billion by 2030 — is in urgent need of finance. Today, less than 2% comes from private sources.[1]

SDG 13 **Leaders**

Highest positive contributors

POS. IMPACT BY % HOLDING REVENUE	
50%	Global X Hydrogen ETF
50%	Fidelity Clean Energy ETF
49%	Invesco Solar ETF
49%	Global X Solar ETF
47%	KraneShares MSCI China Clean Technology Index ETF
46%	ALPS Clean Energy ETF
46%	iShares U.S. Insurance ETF
44%	Global X Wind Energy ETF
44%	Global X CleanTech ETF
43%	Invesco KBW Property & Casualty Insurance ETF

Industry exposure

Positive contributors share a high exposure to **renewables** and a moderate exposure to **insurance**. The most effective tool with which to lower **GHG emissions**, renewable energy is central to **climate change mitigation**. Mitigation, however, is only half of the solution. Insurance plays a key role in **climate change adaptation**, reducing the financial impact of **extreme weather events** and improving **resilience**.

SDG 13 **Laggards**

Highest negative contributors

NEG. IMPACT BY % HOLDING REVENUE	
81%	Invesco S&P 500 Equal Weight Utilities ETF
80%	John Hancock Multifactor Utilities ETF
80%	ProShares Ultra Utilities
80%	ProFund VP Utilities
80%	The Utilities Select Sector SPDR Fund
80%	Rydex Utilities Fund
80%	Fidelity MSCI Utilities Index ETF
79%	Vanguard Utilities Index Fund
79%	JNL/Mellon Utilities Sector Fund
79%	Invesco Dynamic Energy Exploration & Production ETF

Industry exposure

Negative contributors share a very high exposure to **energy utilities** and particularly **oil & gas**. Almost 75% of **global GHG emissions** derive from **energy consumption** (**electricity**, **heat**, **transport**), of which 84% is supplied by **fossil fuels**: mostly **oil & gas**. Despite its significant bearing on **climate change**, post-sale **oil & gas consumption** is considered a Scope 3 emission and so remains broadly unreported by producers.

1. World Bank. Enabling Private Investment in Climate Adaptation and Resilience: Current Status, Barriers to Investment and Blueprint for Action. 2021.

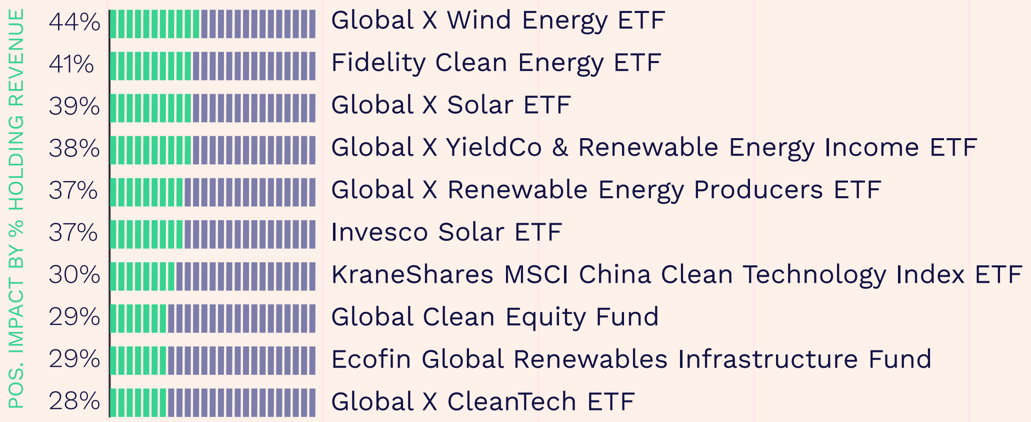
14 Life Below Water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Targets promote policy, technology, and finance as levers to protect and restore marine ecosystems. Oceans make the planet inhabitable. They regulate rainfall and temperature and are home to its largest ecosystem, on which a third of global livelihoods depend. Those benefits are threatened, however, by acidification caused by rising atmospheric CO2. This, combined with warming, pollution, and overfishing, is decimating marine life. Long term, the ocean's ability to regulate climate hangs in the balance.

SDG 14 **Leaders**

Highest positive contributors

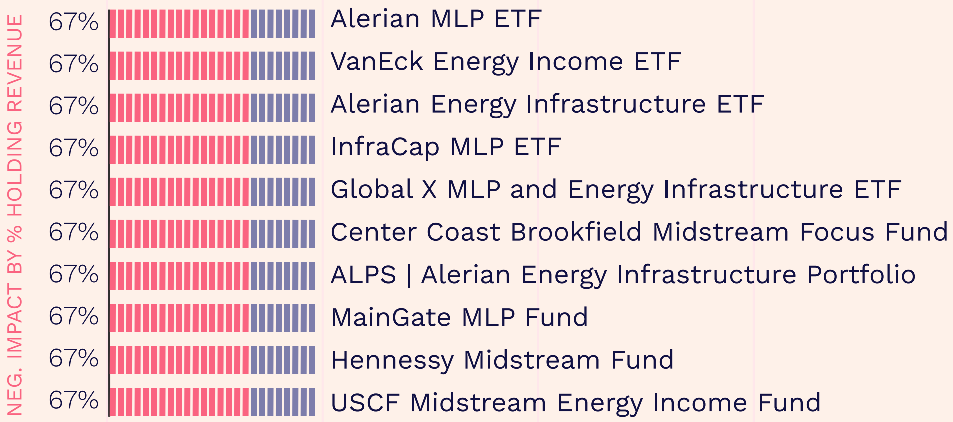


Industry exposure

Positive contributors share a high exposure to **renewables**. As a replacement for fossil fuels, **renewable energy** reduces **climate change**, the warming effects of which are absorbed primarily by the ocean and cause **coral bleaching** and **biodiversity loss**. Fewer emissions also means less **air pollution** and less **acidification** and **eutrophication**, which has further devastating consequences for **aquatic ecosystems**.

SDG 14 **Laggards**

Highest negative contributors



Industry exposure

Negative contributors share a very high exposure to midstream **oil & gas**. The **overseas transportation** of petroleum products leads to **water pollution** and occasional **oil spills** — the risk of which is exacerbated by **offshore drilling** — at the significant detriment of **marine life**. Alongside **oil tankers**, land-based **oil storage and terminals** are responsible for the majority of **discharge** and **spills** causing **water pollution**.

15 **Life On Land**

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation, and halt biodiversity loss

Targets promote investment into sustainable consumption and production to protect biodiversity. Land conservation underpins many other goals. On top of habitation, healthy ecosystems provide food and water and natural climate regulation. Notably, SDG 15 sits in the crosshairs of the energy transition. To meet the Paris Agreement, the world needs to mine billions of tons of materials for renewable technology.

SDG 15 **Leaders**

Highest positive contributors

POS. IMPACT BY % HOLDING REVENUE

40%	Global X Solar ETF
40%	Invesco Solar ETF
36%	Fidelity Clean Energy ETF
34%	Global X YieldCo & Renewable Energy Income ETF
33%	Global X Renewable Energy Producers ETF
28%	Global Clean Equity Fund
27%	ALPS Clean Energy ETF
26%	Global X CleanTech ETF
25%	ProShares S&P Kensho Cleantech ETF
25%	iShares Global Clean Energy ETF

Industry exposure

Positive contributors share a high exposure to **renewables.** As a replacement for fossil fuels, **renewable energy** reduces **climate change** and thus **desertification, deforestation,** and associated **biodiversity loss**. Among renewables, **wind power** scores less highly for SDG 15 than SDG 14, as it poses some risk to local **habitats** and **wildlife**. Thematic **pet care funds** are highly represented among SDG 15 leaders.

SDG 15 **Laggards**

Highest negative contributors

NEG. IMPACT BY % HOLDING REVENUE

73%	U.S. Global GO GOLD and Precious Metal Miners ETF
73%	First Trust Natural Gas ETF
73%	Invesco Dynamic Energy Exploration & Production ETF
72%	iShares U.S. Oil & Gas Exploration & Production ETF
72%	iShares MSCI Global Gold Miners ETF
72%	WisdomTree Efficient Gold Plus Gold Miners Strategy Fund
72%	VanEck Gold Miners ETF
71%	BlackRock Energy and Resources Trust
71%	BlackRock Energy Opportunities Fund
70%	Invesco S&P 500 Equal Weight Utilities ETF

Industry exposure

Negative contributors share a very high exposure to **metals & mining** and **oil & gas**. **Mining operations** cause **deforestation** and **land degradation**, as well as **soil pollution** via **'tailing' discharge** and **acid rain**, which results in **biodiversity loss**. While **oil & gas production** has a similar effect, **climate change** caused by **oil & gas consumption** is overtaking **human land use** as the greatest threat to **biodiversity**.

16 **Peace, Justice & Strong Institutions**

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Targets aim to minimise violence and crime by elevating governance, security, and human rights. Civil unrest and political instability grew 10% over the course of COVID-19, aggravating violent crime, human trafficking, and forced labour. Climate change, geopolitical conflict, and economic instability will further stoke tensions, against which, the UN notes, information access and free press are crucial safeguards.

SDG 16 **Leaders**

Highest positive contributors

POS. IMPACT BY % HOLDING REVENUE	Fund
25%	Fidelity Select Telecommunications Portfolio
23%	Global X Cybersecurity ETF
22%	Gabelli Media Mogul Fund
20%	ProShares Ultra Telecommunications
19%	Roundhill Streaming Services & Technology ETF
19%	iShares Cybersecurity and Tech ETF
19%	iShares U.S. Telecommunications ETF
19%	ProFund VP Telecommunications
18%	Rydex Telecommunications Fund
18%	WisdomTree Cybersecurity Fund

Industry exposure

Positive contributors share a high exposure to **telecommunications**, **technology**, and **cybersecurity**. **Telecommunications**, via new media, has augmented **global knowledge and integration** as well as institutional **accountability** and **transparency**. **Digital adoption** facilitates **access to information** and **freedom of expression**, but also **cybercrime**, against which **cybersecurity** is a critical measure.

SDG 16 **Laggards**

Highest negative contributors

NEG. IMPACT BY % HOLDING REVENUE	Fund
58%	Invesco Dynamic Energy Exploration & Production ETF
53%	iShares U.S. Oil & Gas Exploration & Production ETF
53%	SPDR(R) S&P(R) Oil & Gas Exploration & Production ETF
50%	First Trust Natural Gas ETF
45%	iShares MSCI Global Energy Producers ETF
45%	The Energy Select Sector SPDR Fund
44%	Invesco DWA Energy Momentum ETF
44%	JNL/Mellon Energy Sector Fund
44%	Vanguard Energy Index Fund
44%	Fidelity Advisor Energy Fund

Industry exposure

Negative contributors share a high exposure to upstream **oil & gas** and **metals & mining**. **Extractive industries** are associated with regional **corruption**, **bribery**, **violence,** and **political instability**, as well as **armed conflict** and **war** over resources. Thematic **cryptocurrency** and **gambling** funds are highly represented among SDG 16 laggards, due to correlation with **financial** and **violent crime**, respectively.

1. Institute for Economics & Peace. 2021. Global Peace Index 2021: Measuring Peace in a Complex World.

17 Partnership For The Goals

Strengthen the means of implementation and revitalize the global partnership for sustainable development

Targets foster international investment and trade to drive economic growth and lift the goals.
The UN estimates an annual $5–7 trillion is needed to meet the SDGs. It requires major financial action among and within nations, to which end private and public sectors play a vital part. With progress stalled by by COVID-19, climate change, and geopolitical tension — and with even strong economies, such as the US, lacking the resources to improve domestic conditions — private finance will grow only more integral.

SDG 17 **Leaders**

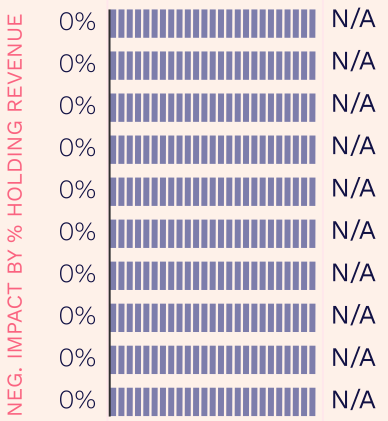
Highest positive contributors

Industry exposure

Positive contributors share a high exposure to **financial services** — particularly in regions with fewer **domestic resources and funding** — and a small exposure to **shipping** and **telecommunications**. Achieving **global sustainable development** hinges on correlated **economic stability and growth,** the levers for which are **equitable trade** and **investment mobilisation** at an international and national level.

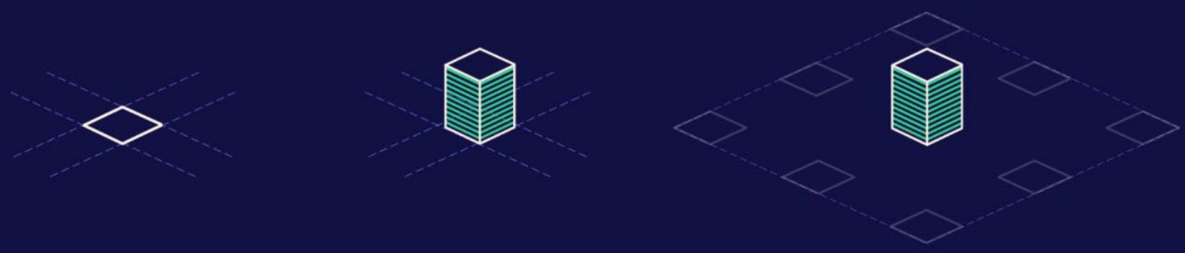
SDG 17 **Laggards**

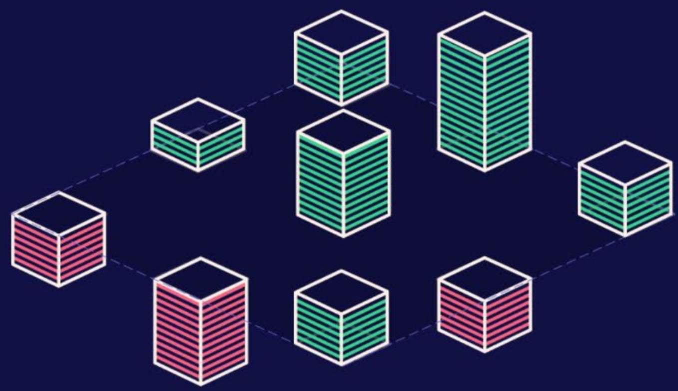
Highest negative contributors



Industry exposure

While many funds contribute nothing to SDG 17, no fund or company in our universe is a negative contributor. To contribute positively or negatively, a fund must be positively or negatively associated with **economic stability, trade** and **innovation**, respectively. Because almost every product and industry either derives from or perpetuates those themes by virtue of their existence, few undercut SDG 17.





About Util

Util uses machine learning to measure the real-world impact of every company and portfolio, empowering investors to make better-informed decisions. Objective, global, and sophisticated, Util's analytics capture the myriad ways in which 45,000 listed companies—of every size, geography, and sector—affect the 17 United Nations Sustainable Development Goals and thousands of other sustainability concepts.

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