

Trucost Portfolio Analytics

IVO Capital Partners 2020

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About Trucost

Trucost is part of S&P Global. A leader in carbon and environmental data and risk analysis, Trucost assesses risks relating to climate change, natural resource constraints, and broader environmental, social, and governance factors. Companies and financial institutions use Trucost intelligence to understand their ESG exposure to these factors, inform resilience and identify transformative solutions for a more sustainable global economy. S&P Global's commitment to environmental analysis and product innovation allows us to deliver essential ESG investment-related information to the global marketplace. For more information, visit www.trucost.com.

About S&P Global

S&P Global (NYSE: SPGI) is a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide. For more information, visit www.spglobal.com.

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Benefits of Trucost Portfolio Analysis

It is well-documented that overuse of environmental resources and emission of pollutant gases is not only unsustainable for the planet but could also have widespread economic and social consequences. As governments, capital markets and consumers start to challenge the status quo, those companies that use resources less efficiently than peers, or are more carbon intensive, could lose their market share, licences to operate and ability to source from suppliers. This has possible operational and financial implications for revenues, profit, cost of capital and valuations.

Trucost's portfolio analysis provides investors with essential intelligence to appraise large numbers of holdings or investments for potential exposure to carbon and other environmental impacts, regardless of asset class, geography or investment style. This report provides an invaluable tool for investors to understand:

- Exposure to rising carbon costs
- Carbon performance of holdings within a sector
- Materiality of different environmental impacts
- Engagement opportunities
- Exposure to possible stranded assets
- The baseline against which to measure improvement over time

Summary of Coverage

Portfolio: IVO Fixed Income Short Duration UCITS

Benchmark: JPM CEMBI Broad Diversified 1-3 years

Analysis Date: December 15, 2020

Holdings Date: October 30, 2020

Asset Classes: :]l YX 'bWta Y

Apportioning Factor: Enterprise value

Largest Contributor Level: Instruments

	VoH Covered EURm	Coverage Rate (% of Starting VOH)	Number of Instruments Analysed	Number of Companies Analysed
Portfolio	11.644	57.49	51/89	47
Benchmark	11.644	83.44	360/433	243

Summary of Results

		Unit	Portfolio	Benchmark	Relative Efficiency
Carbon	Carbon to Revenue	tCO2e/mEUR	888.97	559.96	-59%
	Carbon to Value Invested	tCO2e/mEUR	803.42	556.30	-44%
	Weighted Average Carbon Intensity	tCO2e/mEUR	1,077.26	725.41	-49%
	Absolute CO2e	tonnes	9,355	6,477	-44%
Environmental	EC to Revenue	%	11.20	6.86	-63%
	EC to Value Invested	%	10.12	6.81	-48%
	Weighted Average EC Intensity	%	10.64	7.98	-33%
	Absolute Environmental Costs	mEUR	1.178	0.793	-48%
Fossil Fuels & Stranded Assets	Extractive Industries Revenue Exposure (apportioned)	%	10.35	4.89	-112%
	Extractive Industries Revenue Exposure (weighted average)	%	11.10	4.19	-165%
	Extractive Industries Revenue Exposure (VOH)	%	19.21	13.16	-46%
	Reserves Exposure (VOH)	%	19.21	11.44	-68%
	Absolute CO2e from Reserves	tonnes	382,939	324,802	-18%
	Absolute Fossil Fuel CAPEX	EUR	270,394	140,547	-92%
	Coal Revenue Exposure (apportioned)	%	0.37	0.41	10%
	Coal Revenue Exposure (weighted average)	%	0.57	0.67	15%
	Coal Revenue Exposure (VOH)	%	6.85	5.78	-18%
	Energy Transition	Absolute Fossil Fuel Power Generation	GWh	2.405	2.221
Absolute Renewable Power Generation		GWh	0.663	0.126	428%
Absolute Other Power Generation		GWh	+0.000	0.346	100%
Fossil Fuel Power Revenue Exposure (apportioned)		%	1.92	1.17	-65%
Fossil Fuel Power Revenue Exposure (weighted average)		%	2.17	2.48	12%
Fossil Fuel Power Revenue Exposure (VOH)		%	8.86	8.97	1%
Renewable Power Revenue Exposure (apportioned)		%	0.43	0.07	511%
Renewable Power Revenue Exposure (weighted average)		%	2.07	0.26	691%
Renewable Power Revenue Exposure (VOH)		%	9.97	6.12	63%
Other Power Revenue Exposure (apportioned)		%	+0.00	+0.00	96%
Other Power Revenue Exposure (weighted average)		%	+0.00	+0.00	92%
Other Power Revenue Exposure (VOH)		%	1.02	1.51	32%

Carbon

Introduction

Carbon exposure analysis offers a systematic assessment of the carbon risks and opportunities within a portfolio or index at a point in time. The analysis quantifies greenhouse gas emissions (GHG) embedded within a portfolio presenting these as tonnes of carbon dioxide equivalents (tCO₂e). Comparing the total GHG emissions of each holding relative to either revenues generated or capital invested, gives a measure of carbon exposure that enables comparison between companies, irrespective of size or geography.

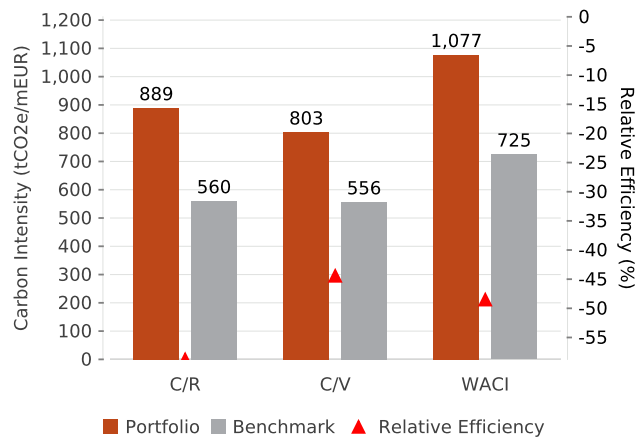
The **Total Carbon Emissions**, **Carbon to Value Invested (C/V)**, **Carbon to Revenue (C/R)**, and **Weighted Average Carbon Intensity (WACI)** are all presented below. For more information on methodological approaches please refer to Appendix 2 and 3.

The scope used in this analysis was Direct Emissions, First Tier Indirect Emissions. For more information on scopes please refer to Appendix 1.

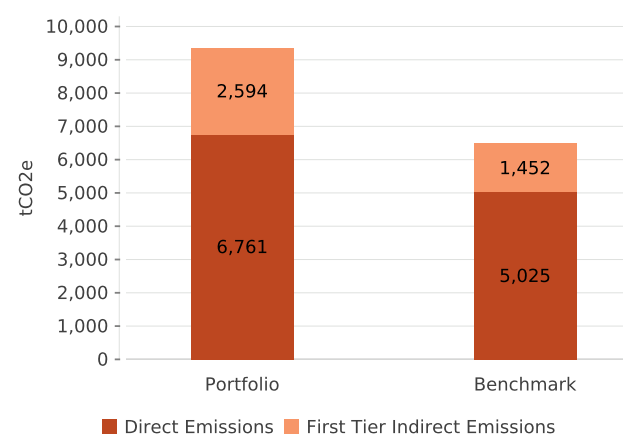
The disclosure rate is measured against the value of holdings (VOH), the share of apportioned GHGs, and number of instruments. : cf`XYHJ]`gžd`YUgY`fYZf`hc`7UFVcb`5ddYbXJ]`(`

Key Findings

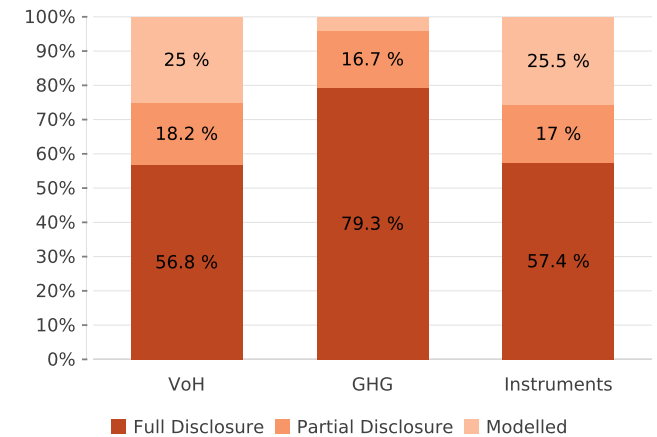
Carbon Intensity by Method



Carbon Apportioned by Scope



Portfolio Disclosure



The portfolio is more carbon intensive than the benchmark across all three of the methodologies used, with the relative efficiency versus the benchmark over -44% for the Carbon to Revenue and Carbon to Value approach. The absolute footprint of the portfolio is around 9k tCO₂e, which is nearly 3k higher than that of the benchmark. 72% of the absolute footprint is made up of direct emissions apportioned to the portfolio. Portfolio disclosure rates are highest when measured by GHG emissions, indicating that the largest emitters in the portfolio tend to be better disclosers.

Carbon

Attribution Analysis - Carbon to Revenue

Carbon to Revenue
(tCO2e/mEUR)

Sector Allocation	Portfolio	Benchmark
Communication Services	74.64	81.39
Consumer Discretionary	695.92	116.68
Consumer Staples	877.45	418.06
Energy	784.13	1,024.88
Financials	12.50	26.54
Health Care		85.57
Industrials	796.47	575.55
Information Technology		51.64
Materials	3,858.76	2,553.37
Real Estate	70.44	330.55
Utilities	2,515.50	4,156.42
	888.97	559.96

Attribution Analysis

Sector Allocation	Company Selection	Total Effect
4.41%	0.11%	4.52%
0.85%	-4.87%	-4.02%
2.96%	-12.15%	-9.19%
1.42%	6.03%	7.45%
-35.68%	0.35%	-35.33%
-1.37%		-1.37%
-0.42%	-7.92%	-8.33%
-1.86%		-1.86%
1.13%	-17.96%	-16.83%
3.06%	4.63%	7.69%
-18.21%	16.73%	-1.48%
-43.71%	-15.04%	-58.76%

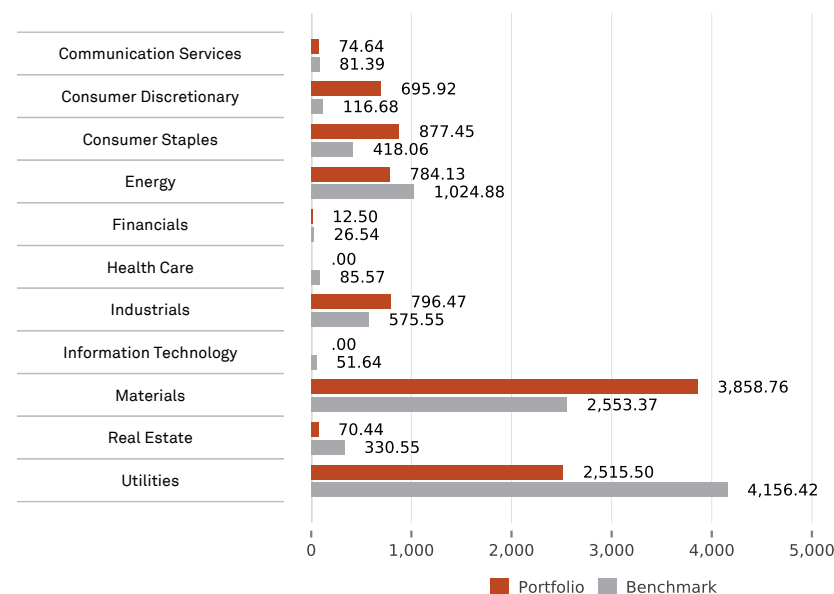
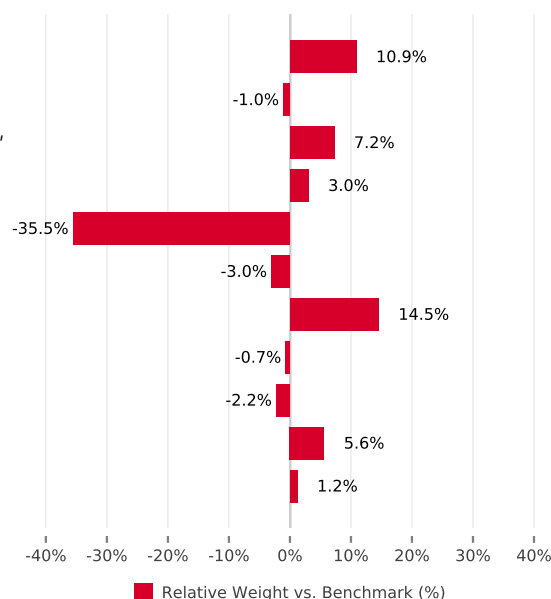
The two principal reasons why the carbon exposure of the portfolio may differ from the benchmark are due to sector allocation decisions and company allocation decisions.

Sector allocation decisions will cause the carbon intensity of the portfolio to diverge markedly from the benchmark where the sector/s are either carbon intensive or low carbon. If the portfolio is overweight in carbon intensive sectors the portfolio is likely to be more carbon intensive than the benchmark.

However, if the companies within a carbon intensive sector are the most carbon efficient companies, it is possible that the portfolio may still have a lower carbon footprint than the benchmark.

Relative Sector Weight plus Sector Efficiency

The table above shows the strength of the sector allocation and company selection attribution effects, by GICS sector. A positive number indicates that it is contributing to creating a lower intensity than the benchmark, while a negative number indicates that it is contributing to a higher intensity. The chart to the immediate right shows whether the portfolio is over or under-weight a GICS sector versus the benchmark, on a value-of-holdings basis. The chart on the far right shows the sector specific carbon intensities.



The portfolio has a negative sector allocation, due mainly to being underweight in the Financial sector, and a negative company selection due mainly to its Materials holdings. These taken together contribute to a negative total effect of -52.16%.

Carbon

Largest Contributors - Carbon to Revenue

The largest contributors to the portfolio's carbon intensity are shown below. Note that a company may appear due to the proportion owned/financed, rather than because it is the most carbon intensive held. The 'C/R Intensity Contribution' is the percentage change in the portfolio's intensity that would be caused by excluding the holding referenced. In other words, it is a measurement of how much a specific holding effects the carbon performance of the portfolio.

Description	Provided Identifier	Holding (mEUR)	Sector	Carbon Apportioned (% of total)	Company C/R Intensity (tCO2e/mEUR)	Rank in Benchmark Sector	C/R Intensity Contribution (%)	Data Source (Scope 1)
Sasol Limited	US80386WAA36	0.333	Materials	20.71	5,920.29	N/A	-18.16	Full Disclosure
Sasol Limited	US803865AA25	0.170	Materials	10.57	5,920.29	27/29	-9.13	Full Disclosure
PT Cikarang Listrindo Tbk	USN5276YAD87	0.176	Utilities	9.14	7,211.65	N/A	-8.11	Full Disclosure
Turkiye Sise Cam Fabrik	XS1961010987	0.348	Industrials	8.59	2,242.53	N/A	-5.37	Full Disclosure
GMR Infrastructure Limited	USY3004WAB82	0.336	Industrials	5.55	8,769.95	N/A	-5.01	Partial Disclosure
YPF SA	USP989MJAY76	0.245	Energy	7.17	1,785.13	24/29	-3.73	Full Disclosure
Pampa Energia S.A.	USP7873PAE62	0.147	Utilities	4.53	2,168.59	14/23	-2.72	Full Disclosure
The AES Corporation	USP1000CAA29	0.119	Utilities	2.23	5,683.18	N/A	-1.89	Partial Disclosure
Marfrig Global Foods S.A.	USG5825AAA00	0.351	Consumer Staples	6.52	1,113.97	N/A	-1.39	Full Disclosure
Gol Linhas Aereas Inteligentes S.	USL4441RAA43	0.134	Industrials	1.47	1,330.94	N/A	-0.49	Full Disclosure

Largest Modelled Contributors - Carbon to Revenue

In order to highlight for engagement purposes, we have identified the largest contributors for which up-to-date disclosures were not available. These are ranked according to the size of their impact on your carbon intensity as estimated by Trucost, using our proprietary environmental profiling model.

Description	Provided Identifier	Holding (mEUR)	Sector	Carbon Apportioned (% of total)	Company C/R Intensity (tCO2e/mEUR)	Rank in Benchmark Sector	C/R Intensity Contribution (%)	Data Source (Scope 1)
Global Ports Holding Plc	XS1132825099	0.126	Industrials	0.39	1,388.00	N/A	-0.14	Modelled
Adani Green Energy Limited	XS1854172043	0.187	Utilities	+0.00	24.24	N/A	0.03	Modelled
PT Tower Bersama	XS2099045515	0.432	Communication Services	0.01	29.24	N/A	0.36	Modelled
Weibo Corporation	US948596AC55	0.328	Communication Services	0.02	33.46	N/A	0.60	Modelled
Emaar Properties PJSC	XS1488480333	0.166	Real Estate	0.08	89.67	N/A	0.72	Modelled
Shriram Transport Finance	USY7758EEC13	0.166	Financials	0.01	15.22	N/A	0.78	Modelled
Tecnoglass Inc.	USG87264AA81	0.180	Materials	1.10	512.55	N/A	0.83	Modelled
Damac Properties Dubai Co.	XS1585453142	0.162	Real Estate	0.11	87.21	20/48	0.99	Modelled
Seplat Petroleum Development	XS1789190243	0.344	Energy	1.54	487.53	5/29	1.30	Modelled
Fosun International Limited	XS2238561794	0.256	Industrials	0.04	24.67	N/A	1.46	Modelled

Carbon

Attribution Analysis - Carbon to Value Invested

Carbon to Value (tCO2e/mEUR)			Attribution Analysis		
Sector Allocation	Portfolio	Benchmark	Sector Allocation	Company Selection	Total Effect
Communication Services	36.21	52.33	9.85%	0.49%	10.34%
Consumer Discretionary	943.67	101.14	-0.84%	-4.75%	-5.59%
Consumer Staples	1,116.44	397.22	2.07%	-13.60%	-11.52%
Energy	729.56	1,509.85	-5.17%	19.12%	13.95%
Financials	26.24	32.61	-33.45%	0.07%	-33.38%
Health Care		45.80	-2.75%		-2.75%
Industrials	680.49	437.00	3.11%	-9.29%	-6.18%
Information Technology		157.14	-0.48%		-0.48%
Materials	3,037.10	1,841.54	5.09%	-19.01%	-13.92%
Real Estate	50.05	115.72	4.42%	1.50%	5.91%
Utilities	1,859.57	2,054.00	-3.24%	2.44%	-0.80%
	803.42	556.30	-21.39%	-23.03%	-44.42%

The two principal reasons why the carbon exposure of the portfolio may differ from the benchmark are due to sector allocation decisions and company allocation decisions.

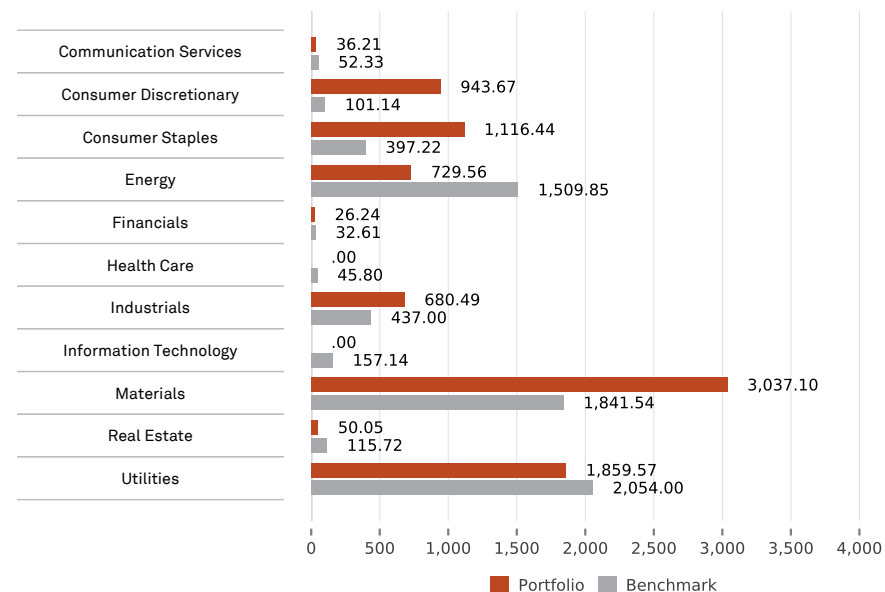
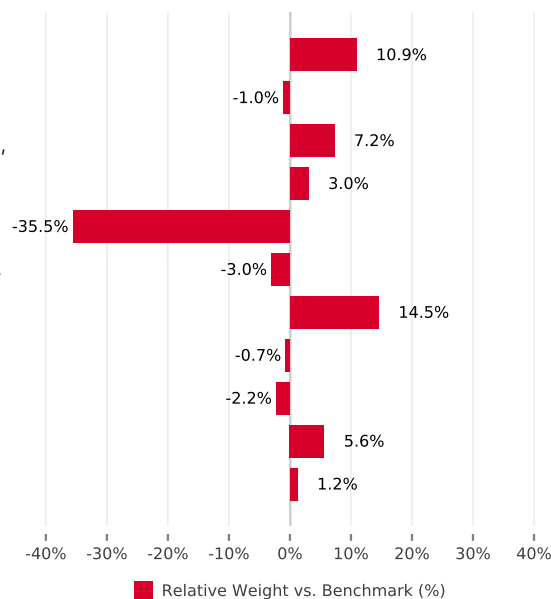
Sector allocation decisions will cause the carbon intensity of the portfolio to diverge markedly from the benchmark where the sector/s are either carbon intensive or low carbon. If the portfolio is overweight in carbon intensive sectors the portfolio is likely to be more carbon intensive than the benchmark.

However, if the companies within a carbon intensive sector are the most carbon efficient companies, it is possible that the portfolio may still have a lower carbon footprint than the benchmark.

Relative Sector Weight plus Sector Footprint

The table above shows the strength of the sector allocation and company selection attribution effects, by GICS sector. A positive number indicates that it is contributing to creating a lower intensity than the benchmark, while a negative number indicates that it is contributing to a higher intensity. The chart to the immediate right shows whether the portfolio is over or under-weight a GICS sector versus the benchmark, on a value-of-holdings basis. The chart on the far right shows the sector specific carbon intensities.

The portfolio has a negative sector allocation, due mainly to being underweight in the Financial sector, and a negative company selection due mainly to its Materials holdings. These taken together contribute to a negative total effect of -47.30%.



Carbon

Largest Contributors - Carbon to Value Invested

The largest contributors to the portfolio's carbon intensity are shown below. Note that a company may appear due to the proportion owned/financed, rather than because it is the most carbon intensive held. The 'C/V Intensity Contribution' is the percentage change in the portfolio's intensity that would be caused by excluding the holding referenced. In other words, it is a measurement of how much a specific holding effects the carbon performance of the portfolio.

Description	Provided Identifier	Holding (mEUR)	Sector	Carbon Apportioned (% of total)	Company C/V Intensity (tCO2e/mEUR)	Rank in Benchmark Sector	C/V Intensity Contribution (%)	Data Source (Scope 1)
Sasol Limited	US80386WAA36	0.333	Materials	20.71	5,819.83	N/A	-18.37	Full Disclosure
Sasol Limited	US803865AA25	0.170	Materials	10.57	5,819.83	18/29	-9.25	Full Disclosure
PT Cikarang Listrindo Tbk	USN5276YAD87	0.176	Utilities	9.14	4,870.42	N/A	-7.75	Full Disclosure
Turkiye Sise Cam Fabrik	XS1961010987	0.348	Industrials	8.59	2,309.76	N/A	-5.78	Full Disclosure
YPF SA	USP989MJAY76	0.245	Energy	7.17	2,735.93	11/29	-5.17	Full Disclosure
Marfrig Global Foods S.A.	USG5825AAA00	0.351	Consumer Staples	6.52	1,736.55	N/A	-3.61	Full Disclosure
Pampa Energia S.A.	USP7873PAE62	0.147	Utilities	4.53	2,877.25	10/23	-3.31	Full Disclosure
GMR Infrastructure Limited	USY3004WAB82	0.336	Industrials	5.55	1,543.74	N/A	-2.74	Partial Disclosure
PT Japfa Comfeed Indonesia Tbk	XS1588422201	0.345	Consumer Staples	4.87	1,318.54	N/A	-1.96	Partial Disclosure
Tupy S.A.	USL9326VAA46	0.176	Consumer Discretionary	2.79	1,484.70	N/A	-1.30	Partial Disclosure

Largest Modelled Contributors - Carbon to Value Invested

In order to highlight for engagement purposes, we have identified the largest contributors for which up-to-date disclosures were not available. These are ranked according to the size of their impact on your carbon intensity as estimated by Trucost, using our proprietary environmental profiling model.

Description	Provided Identifier	Holding (mEUR)	Sector	Carbon Apportioned (% of total)	Company C/V Intensity (tCO2e/mEUR)	Rank in Benchmark Sector	C/V Intensity Contribution (%)	Data Source (Scope 1)
Tecnoglass Inc.	USG87264AA81	0.180	Materials	1.10	574.46	N/A	0.45	Modelled
Global Ports Holding Plc	XS1132825099	0.126	Industrials	0.39	292.26	N/A	0.70	Modelled
Damac Properties Dubai Co.	XS1585453142	0.162	Real Estate	0.11	61.41	6/48	1.31	Modelled
Ellaktor S.A.	XS2092381107	0.180	Industrials	0.22	113.75	N/A	1.35	Modelled
Emaar Properties PJSC	XS1488480333	0.166	Real Estate	0.08	44.89	N/A	1.37	Modelled
Shriram Transport Finance	USY7758EEC13	0.166	Financials	0.01	7.57	N/A	1.43	Modelled
Seplat Petroleum Development	XS1789190243	0.344	Energy	1.54	417.78	2/29	1.46	Modelled
Adani Green Energy Limited	XS1854172043	0.187	Utilities	+0.00	0.37	N/A	1.63	Modelled
Fosun International Limited	XS2238561794	0.256	Industrials	0.04	15.04	N/A	2.20	Modelled
Weibo Corporation	US948596AC55	0.328	Communication Services	0.02	6.63	N/A	2.87	Modelled

Carbon

Attribution Analysis - Weighted Average Carbon Intensity

WACI (tCO2e/mEUR)			Attribution Analysis		
Sector Allocation	Portfolio	Benchmark	Sector Allocation	Company Selection	Total Effect
Communication Services	67.07	72.36	9.78%	0.12%	9.91%
Consumer Discretionary	665.87	112.59	-0.87%	-2.39%	-3.26%
Consumer Staples	866.71	488.37	2.37%	-5.48%	-3.12%
Energy	679.17	1,100.25	-1.56%	7.91%	6.35%
Financials	13.02	18.89	-34.60%	0.05%	-34.55%
Health Care		85.57	-2.65%		-2.65%
Industrials	1,726.51	417.92	6.15%	-38.30%	-32.14%
Information Technology		69.76	-0.60%		-0.60%
Materials	3,279.38	2,385.28	5.04%	-10.90%	-5.86%
Real Estate	61.74	297.95	3.29%	4.13%	7.42%
Utilities	2,808.61	4,499.45	-6.26%	16.27%	10.01%
	1,077.26	725.41	-19.90%	-28.60%	-48.50%

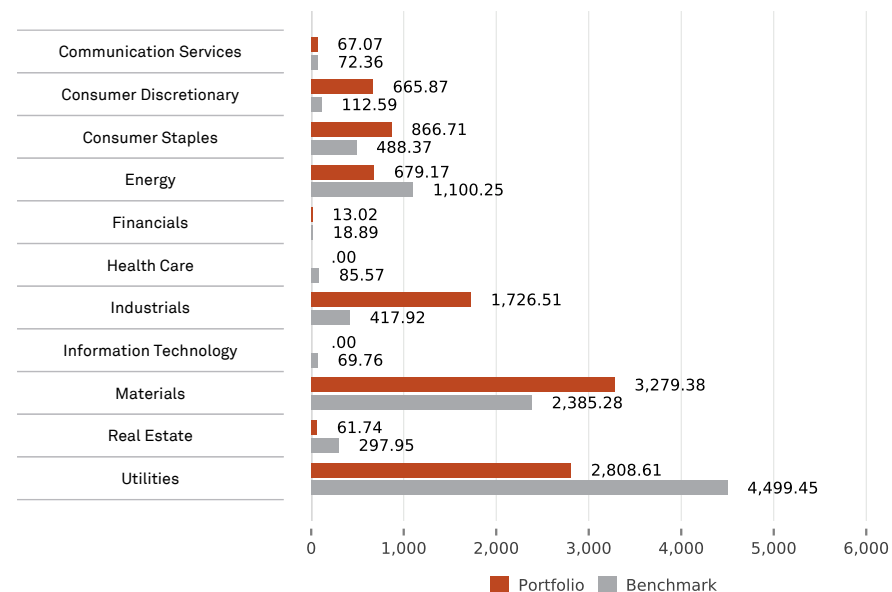
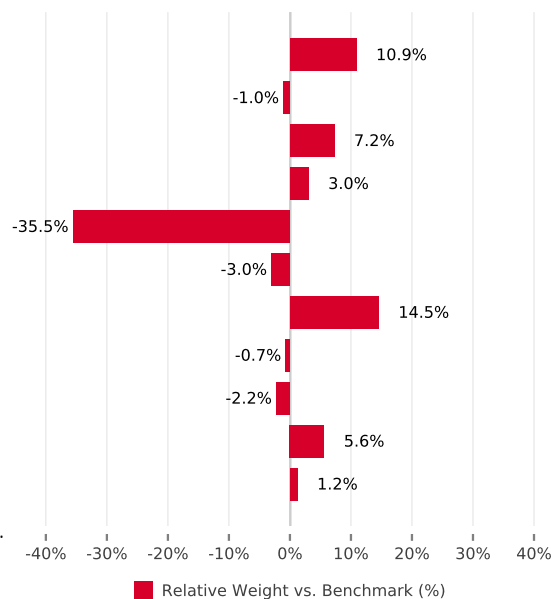
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However, if the companies within a carbon intensive sector are the most carbon efficient companies, it is possible that the portfolio may still have a lower carbon footprint than the benchmark.

Relative Sector Weight plus Sector Intensity

The table above shows the strength of the sector allocation and company selection attribution effects, by GICS sector. A positive number indicates that it is contributing to creating a lower intensity than the benchmark, while a negative number indicates that it is contributing to a higher intensity. The chart to the immediate right shows whether the portfolio is over or under-weight a GICS sector versus the benchmark, on a value-of-holdings basis. The chart on the far right shows the sector specific carbon intensities.



The portfolio has a negative sector allocation, due mainly to being underweight in the Financial sector, and a negative company selection due mainly to its Industrials holdings. These taken together contribute to a negative total effect of -66.69%.

Carbon

Largest Contributors - Weighted Average Carbon Intensity

The largest contributors to the portfolio's carbon intensity are shown below. The 'WACI Contribution' is the percentage change in the portfolio's intensity that would be caused by excluding the holding referenced. In other words, it is a measurement of how much a specific holding effects the carbon performance of the portfolio

Description	Provided Identifier	Holding (mEUR)	Sector	Carbon Apportioned (% of total)	Company C/R Intensity (tCO2e/mEUR)	Rank in Benchmark Sector	WACI Contribution (%)	Data Source (Scope 1)
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Sasol Limited	US80386WAA36	0.333	Materials	20.71	5,920.29	N/A	-15.71	Full Disclosure
PT Cikarang Listrindo Tbk	USN5276YAD87	0.176	Utilities	9.14	7,211.65	N/A	-10.10	Full Disclosure
Sasol Limited	US803865AA25	0.170	Materials	10.57	5,920.29	27/29	-8.02	Full Disclosure
Turkiye Sise Cam Fabrik	XS1961010987	0.348	Industrials	8.59	2,242.53	N/A	-6.22	Full Disclosure
The AES Corporation	USP1000CAA29	0.119	Utilities	2.23	5,683.18	N/A	-5.38	Partial Disclosure
YPF SA	USP989MJAY76	0.245	Energy	7.17	1,785.13	24/29	-3.49	Full Disclosure
Marfrig Global Foods S.A.	USG5825AAA00	0.351	Consumer Staples	6.52	1,113.97	N/A	-3.12	Full Disclosure
Pampa Energia S.A.	USP7873PAE62	0.147	Utilities	4.53	2,168.59	14/23	-2.55	Full Disclosure
PT Japfa Comfeed Indonesia Tbk	XS1588422201	0.345	Consumer Staples	4.87	842.83	N/A	-2.32	Partial Disclosure

Largest Modelled Contributors - Weighted Average Carbon Intensity

In order to highlight for engagement purposes, we have identified the largest contributors for which up-to-date disclosures were not available. These are ranked according to the size of their impact on your carbon intensity as estimated by Trucost, using our proprietary environmental profiling model.

Description	Provided Identifier	Holding (mEUR)	Sector	Carbon Apportioned (% of total)	Company C/R Intensity (tCO2e/mEUR)	Rank in Benchmark Sector	WACI Contribution (%)	Data Source (Scope 1)
Global Ports Holding Plc	XS1132825099	0.126	Industrials	0.39	1,388.00	N/A	-1.40	Modelled
Seplat Petroleum Development	XS1789190243	0.344	Energy	1.54	487.53	5/29	-1.34	Modelled
Tecnoglass Inc.	USG87264AA81	0.180	Materials	1.10	512.55	N/A	-0.73	Modelled
Country Garden Holdings	XS1974522937	0.380	Real Estate	0.46	87.77	N/A	-0.27	Modelled
Ellaktor S.A.	XS2092381107	0.180	Industrials	0.22	107.91	N/A	-0.15	Modelled
Emaar Properties PJSC	XS1488480333	0.166	Real Estate	0.08	89.67	N/A	-0.12	Modelled
Damac Properties Dubai Co.	XS1585453142	0.162	Real Estate	0.11	87.21	20/48	-0.11	Modelled
PT Tower Bersama	XS2099045515	0.432	Communication Services	0.01	29.24	N/A	-0.10	Modelled
Weibo Corporation	US948596AC55	0.328	Communication Services	0.02	33.46	N/A	-0.09	Modelled
Fosun International Limited	XS2238561794	0.256	Industrials	0.04	24.67	N/A	-0.05	Modelled

Environment

Introduction

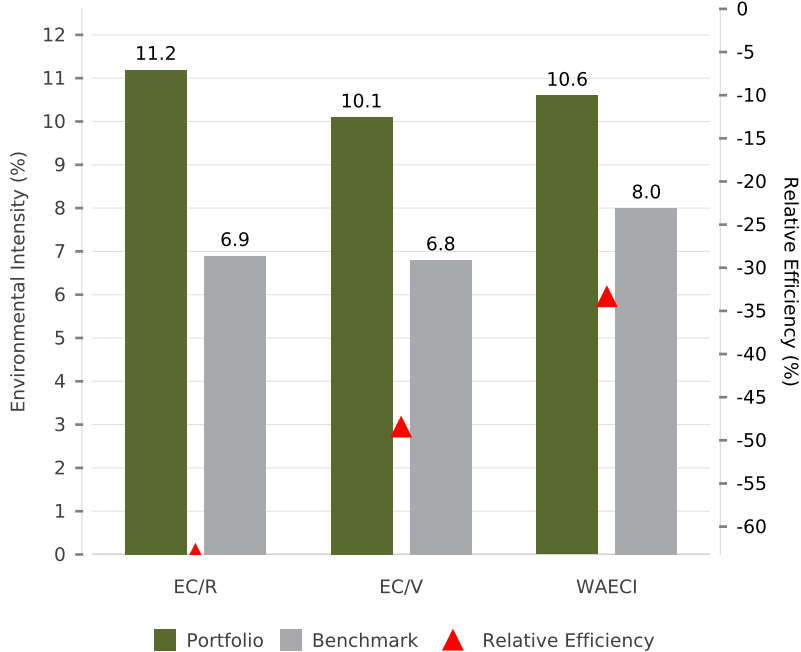
Environmental footprint analysis measures the environmental risks and opportunities not captured by standard portfolio analysis and presents a systematic assessment of environmental impacts. The footprint quantifies the greenhouse gas (GHG) emissions, water, waste, land & water pollutants, air pollutants, and natural resource use associated with your portfolio. To enable comparison between different environmental impacts, Trucost assigns an environmental cost to each resource and pollutant. Environmental costs are set by Trucost's academic panel and are derived from environmental economics literature. They reflect the wider costs borne by society of resource usage or pollutants released. For more information please refer to Appendix 7.

The **Total Environmental Costs (EC)**, **EC to Value Invested (EC/V)**, **EC to Revenue (EC/R)**, and **Weighted Average EC Intensity (WAECI)** are all presented below. For more information on methodological approaches please refer to Appendix 2 and 3.

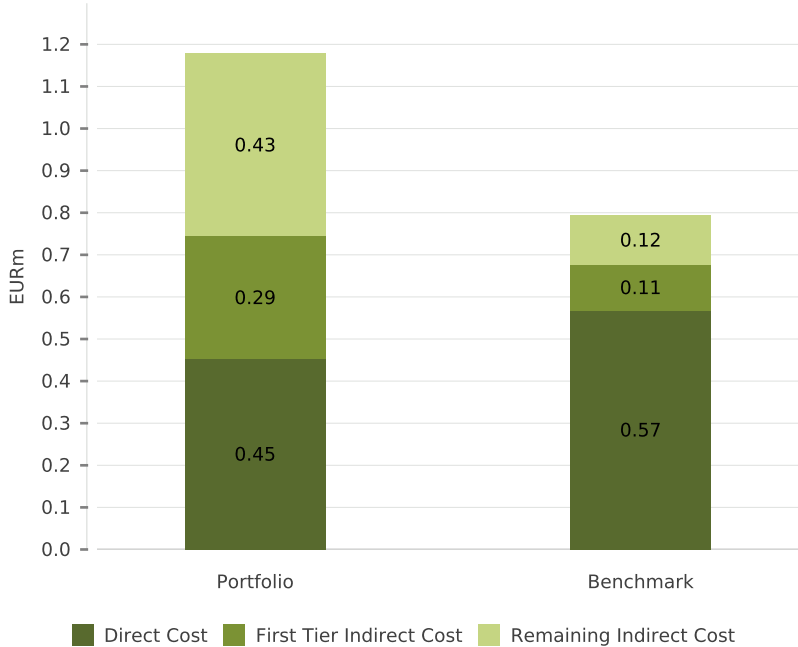
The scope used in this analysis was Direct Cost, First Tier Indirect Cost and Remaining Indirect Cost. For more information on scopes please refer to Appendix 1.

Key Findings

Environmental Performance by Method



Apportioned Environmental Costs by Scope



Environment

Attribution Analysis - Environmental Costs to Revenue

EC to Revenue (%)			Attribution Analysis		
Sector Allocation	Portfolio	Benchmark	Sector Allocation	Company Selection	Total Effect
Communication Services	0.82	0.83	4.53%	0.01%	4.54%
Consumer Discretionary	7.36	2.41	0.69%	-3.40%	-2.70%
Consumer Staples	39.97	31.64	-42.18%	-17.97%	-60.15%
Energy	4.70	15.74	2.21%	22.58%	24.79%
Financials	0.31	0.49	-34.77%	0.37%	-34.40%
Health Care		1.65	-1.23%		-1.23%
Industrials	6.97	7.62	-1.66%	1.89%	0.24%
Information Technology		1.19	-1.69%		-1.69%
Materials	24.28	23.53	0.77%	-0.84%	-0.07%
Real Estate	1.32	3.07	4.12%	2.55%	6.67%
Utilities	13.23	21.34	-5.98%	6.75%	0.76%
	11.20	6.86	-75.17%	11.94%	-63.23%

The two principal reasons why the environmental exposure of the portfolio may differ from the benchmark are due to sector allocation decisions and company selection decisions.

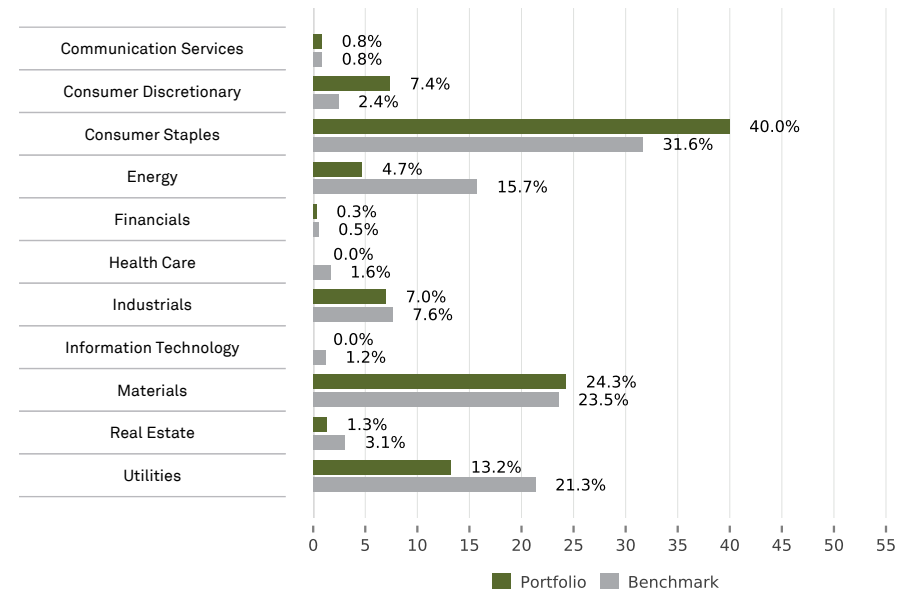
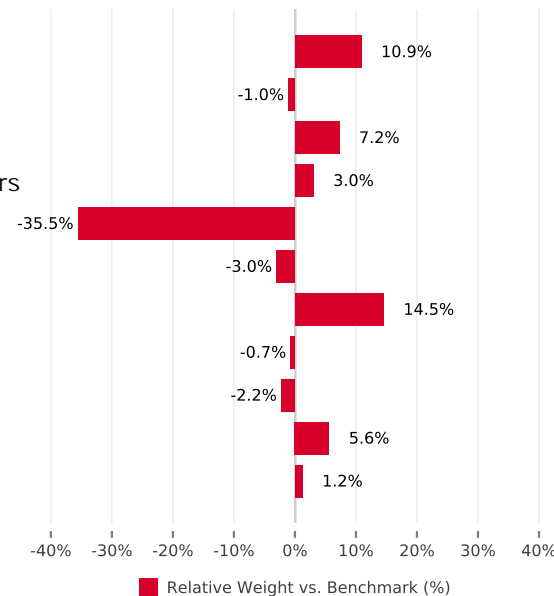
Sector allocation decisions can cause the exposure of the portfolio to diverge markedly from the benchmark where the sector/s are either environmentally high or low impact. If the portfolio is overweight high impact sectors it is likely to be more environmentally intensive than the benchmark.

However, if the companies held within a high impact sector are the most efficient companies, it is possible that the portfolio may still be more efficient than the benchmark.

Relative Sector Weight plus Sector Efficiency

Overall, the portfolio is 63% less efficient than the benchmark when measured using the EC to Revenue approach. There is a negative sector allocation affect of -75%, meaning that the portfolio derives a greater share of its apportioned revenues from sectors with a higher intensity than the overall benchmark intensity.

There is also a positive company selection effect of 12%. This means that - assuming constant sector revenue weighting between the portfolio and benchmark - the sector intensities of the portfolio are on average lower than those of the benchmark.



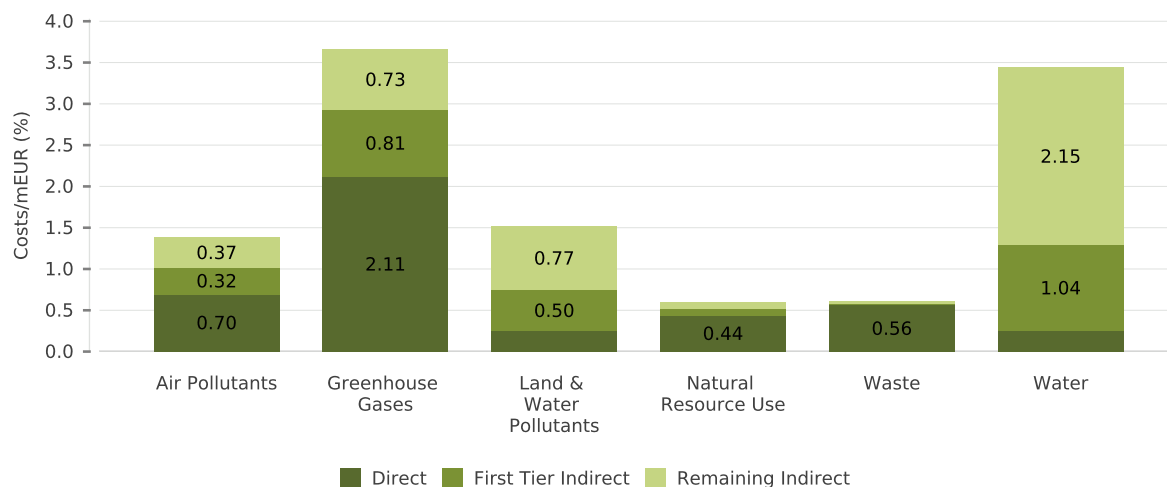
Environment

Largest Contributors - Environmental Costs to Revenue

The largest contributors to the portfolio's environmental intensity are shown below. Note that a company may appear due to the proportion owned/financed, rather than because it is the most intensive held. The 'EC/R Intensity Contribution' is the percentage change in the portfolio's efficiency that would be caused by excluding the holding referenced. In other words, it is a measurement of how much a specific holding effects the environmental performance of the portfolio.

Description	Provided Identifier	Holding (mEUR)	Sector	Company EC/R Intensity	Rank In Benchmark Sector	EC/R Intensity Contribution
PT Japfa Comfeed Indonesia Tbk	XS1588422201	0.345	Consumer Staples	59.26%	N/A	-23.22
Marfrig Global Foods S.A.	USG5825AAA00	0.351	Consumer Staples	32.51%	N/A	-10.45
Sasol Limited	US80386WAA36	0.333	Materials	35.38%	N/A	-6.93
Sasol Limited	US803865AA25	0.170	Materials	35.38%	27/29	-3.48
MHP SE	XS1577965004	0.184	Consumer Staples	38.99%	N/A	-3.29
MHP SE	XS1713469911	0.172	Consumer Staples	38.99%	N/A	-3.07
PT Cikarang Listrindo Tbk	USN5276YAD87	0.176	Utilities	37.97%	N/A	-2.73
GMR Infrastructure Limited	USY3004WAB82	0.336	Industrials	49.00%	N/A	-1.91
Turkiye Sise Cam Fabrik	XS1961010987	0.348	Industrials	16.91%	N/A	-1.80
The AES Corporation	USP1000CAA29	0.119	Utilities	31.35%	N/A	-0.63

Environmental Intensity Broken Down by Issue



The chart to the left shows which environmental 'issue', and within those which scope, contributes most towards the final intensity metric.

Direct GHG emissions are contributing the most towards the portfolio's apportioned environmental damage costs. This is being driven by companies in the Consumer Staples sector, such as PT Japfa Comfeed Indonesia Tbk - an integrated agri-food company - as well as Materials companies such as Sasol Limited - an integrated chemicals and energy company.

When considering the entire supply chain, GHG emissions are followed closely by Water as the most impactful environmental issue of the six analyzed.

Environment

Attribution Analysis - Environmental Costs to Value Invested

EC to Value Invested (%)

Sector Allocation	Portfolio	Benchmark
Communication Services	0.40	0.53
Consumer Discretionary	9.98	2.09
Consumer Staples	50.85	30.06
Energy	4.38	23.19
Financials	0.65	0.61
Health Care		0.88
Industrials	5.96	5.79
Information Technology		3.63
Materials	19.11	16.97
Real Estate	0.94	1.08
Utilities	9.78	10.54
	10.12	6.81

Attribution Analysis

Sector Allocation	Company Selection	Total Effect
10.02%	0.34%	10.35%
-0.72%	-3.63%	-4.35%
-24.71%	-32.08%	-56.79%
-7.25%	37.63%	30.38%
-32.37%	-0.04%	-32.41%
-2.61%		-2.61%
2.19%	-0.53%	1.66%
-0.31%		-0.31%
3.28%	-2.77%	0.51%
4.70%	0.26%	4.96%
-0.66%	0.78%	0.13%
-48.44%	-0.05%	-48.49%

The two principal reasons why the environmental exposure of the portfolio may differ from the benchmark are due to sector allocation decisions and company selection decisions.

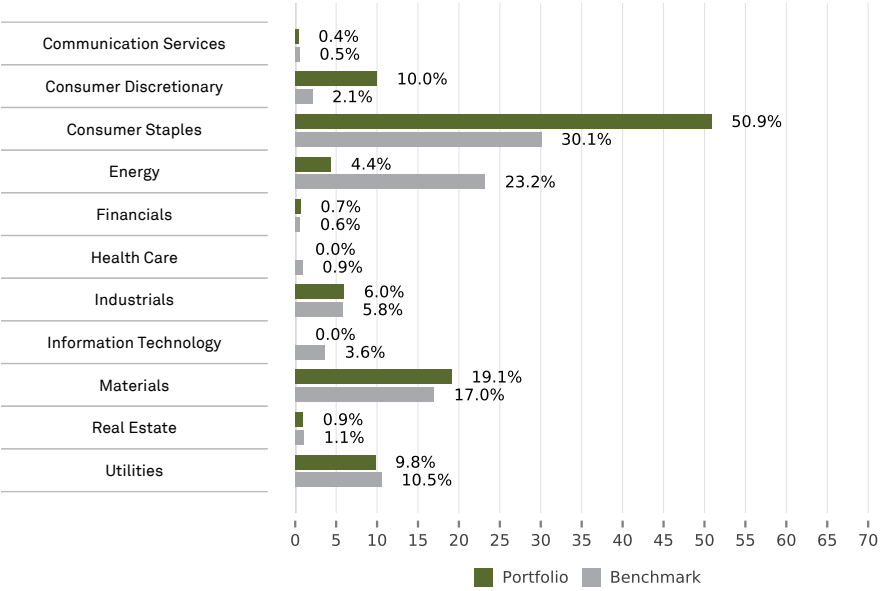
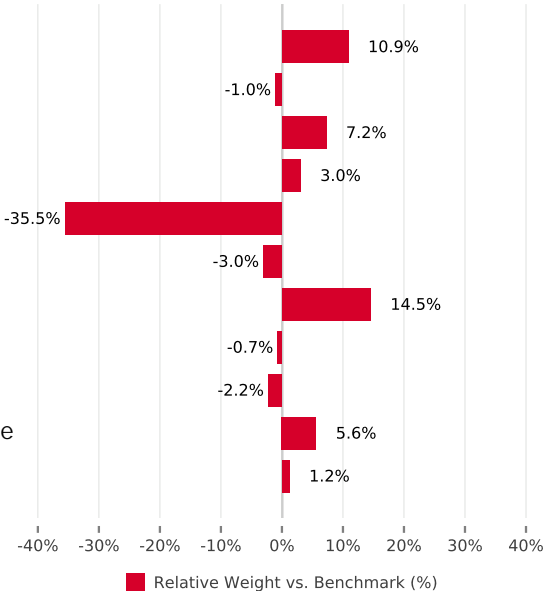
Sector allocation decisions can cause the exposure of the portfolio to diverge markedly from the benchmark where the sector/s are either environmentally high or low impact. If the portfolio is overweight high impact sectors it is likely to be more environmentally intensive than the benchmark.

However, if the companies held within a high impact sector are the most efficient companies, it is possible that the portfolio may still be more efficient than the benchmark.

Relative Sector Weight plus Sector Footprint

Overall, the portfolio is 49% less efficient than the benchmark when measured using the EC to Value Invested approach. There is a negative sector allocation affect of -48%, meaning that the portfolio derives a greater share of its apportioned revenues from sectors with a higher intensity than the overall benchmark intensity.

There is also a slightly negative company selection effect of -0.05%. This means that - assuming constant sector revenue weighting between the portfolio and benchmark - the sector intensities of the portfolio are on average higher than those of the benchmark.



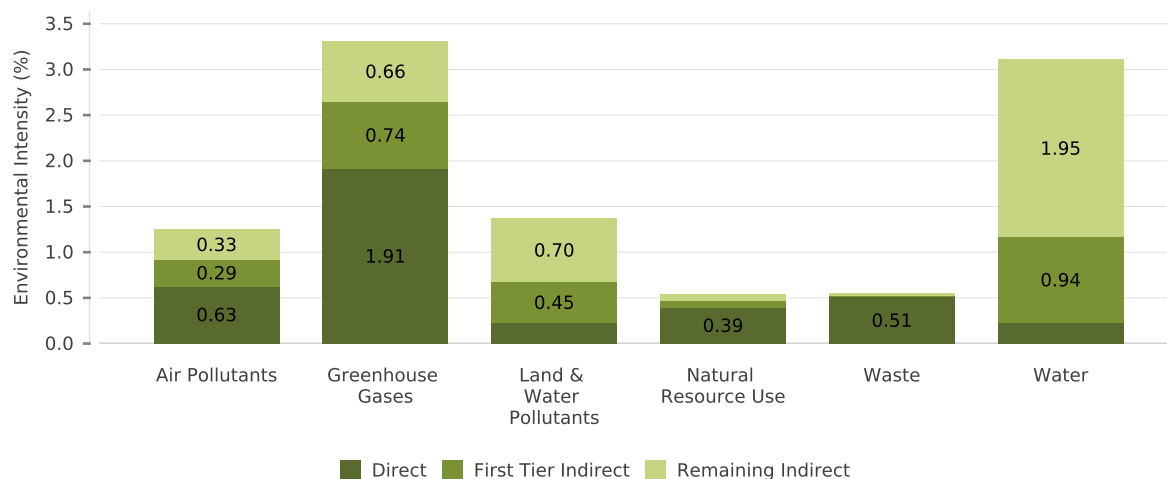
Environment

Largest Contributors - Environmental Costs to Value Invested

The largest contributors to the portfolio's environmental footprint are shown below. Note that a company may appear due to the proportion owned/financed, rather than because it has the highest footprint. The 'EC/V Intensity Contribution' is the percentage change in the portfolio's footprint that would be caused by excluding the holding referenced. In other words, it is a measurement of how much a specific holding effects the environmental performance of the portfolio.

Description	Provided Identifier	Holding (mEUR)	Sector	Company EC/V Intensity	Rank In Benchmark Sector	EC/V Intensity Contribution
PT Japfa Comfeed Indonesia Tbk	XS1588422201	0.345	Consumer Staples	27.16%	N/A	-24.93
Marfrig Global Foods S.A.	USG5825AAA00	0.351	Consumer Staples	15.11%	N/A	-12.47
Sasol Limited	US80386WAA36	0.333	Materials	9.82%	N/A	-7.17
Sasol Limited	US803865AA25	0.170	Materials	5.01%	16/29	-3.61
MHP SE	XS1577965004	0.184	Consumer Staples	4.55%	N/A	-3.02
MHP SE	XS1713469911	0.172	Consumer Staples	4.25%	N/A	-2.82
PT Cikarang Listrindo Tbk	USN5276YAD87	0.176	Utilities	3.82%	N/A	-2.35
Turkiye Sise Cam Fabrik	XS1961010987	0.348	Industrials	5.14%	N/A	-2.22
Tupy S.A.	USL9326VAA46	0.176	Consumer Discretionary	2.53%	N/A	-1.04
YPF SA	USP989MJAY76	0.245	Energy	2.98%	6/29	-0.90

Environmental Intensity Broken Down by Issue



The chart to the left shows which environmental 'issue', and within those which scope, contributes most towards the final intensity metric.

Direct GHG emissions are contributing the most towards the portfolio's apportioned environmental damage costs. This is being driven by companies in the Consumer Staples sector, such as PT Japfa Comfeed Indonesia Tbk - an integrated agri-food company - as well as Materials companies such as Sasol Limited - an integrated chemicals and energy company.

When considering the entire supply chain, GHG emissions are followed closely by Water as the most impactful environmental issue of the six analyzed.

Environment

Attribution Analysis - Weighted Average Environmental Costs Intensity

WAECI (%)			Attribution Analysis		
Sector Allocation	Portfolio	Benchmark	Sector Allocation	Company Selection	Total Effect
Communication Services	0.85	0.80	9.78%	-0.10%	9.68%
Consumer Discretionary	6.51	1.99	-0.77%	-1.78%	-2.55%
Consumer Staples	38.79	33.79	-23.45%	-6.58%	-30.03%
Energy	4.22	18.70	-4.06%	24.74%	20.68%
Financials	0.32	0.42	-33.66%	0.07%	-33.59%
Health Care		1.65	-2.38%		-2.38%
Industrials	11.68	5.86	3.85%	-15.49%	-11.63%
Information Technology		1.31	-0.56%		-0.56%
Materials	21.45	23.40	4.26%	2.16%	6.42%
Real Estate	1.53	2.84	3.59%	2.08%	5.67%
Utilities	15.01	23.24	-2.30%	7.20%	4.90%
	10.64	7.98	-45.69%	12.30%	-33.39%

The two principal reasons why the environmental exposure of the portfolio may differ from the benchmark are due to sector allocation decisions and company selection decisions.

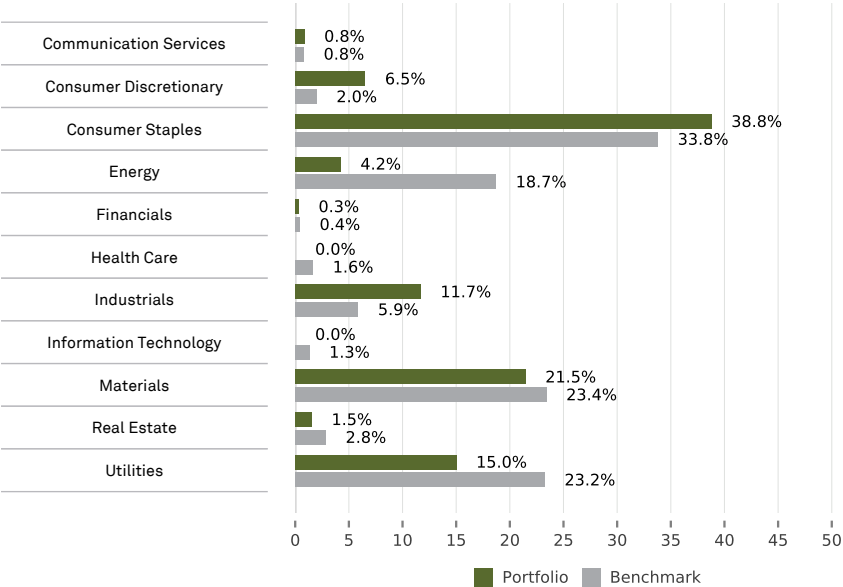
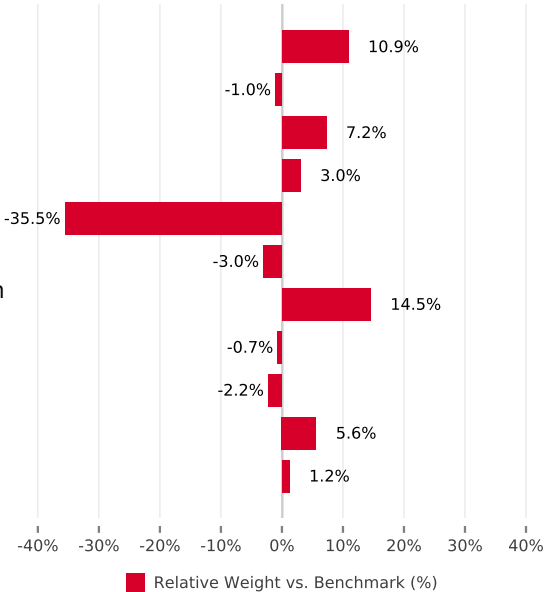
Sector allocation decisions can cause the exposure of the portfolio to diverge markedly from the benchmark where the sector/s are either environmentally high or low impact. If the portfolio is overweight high impact sectors it is likely to be more environmentally intensive than the benchmark.

However, if the companies held within a high impact sector are the most efficient companies, it is possible that the portfolio may still be more efficient than the benchmark.

Relative Sector Weight plus Sector Intensity

Overall, the portfolio is 33% less efficient than the benchmark when measured using the Weighted Average EC Intensity approach. There is a negative sector allocation affect of -46%, meaning that the portfolio derives a greater share of its apporioned revenues from sectors with a higher intensity than the overall benchmark intensity.

However, there is a positive company selection effect of 12%. This means that - assuming constant sector revenue weighting between the portfolio and benchmark - the sector intensities of the portfolio are on average lower than those of the benchmark.



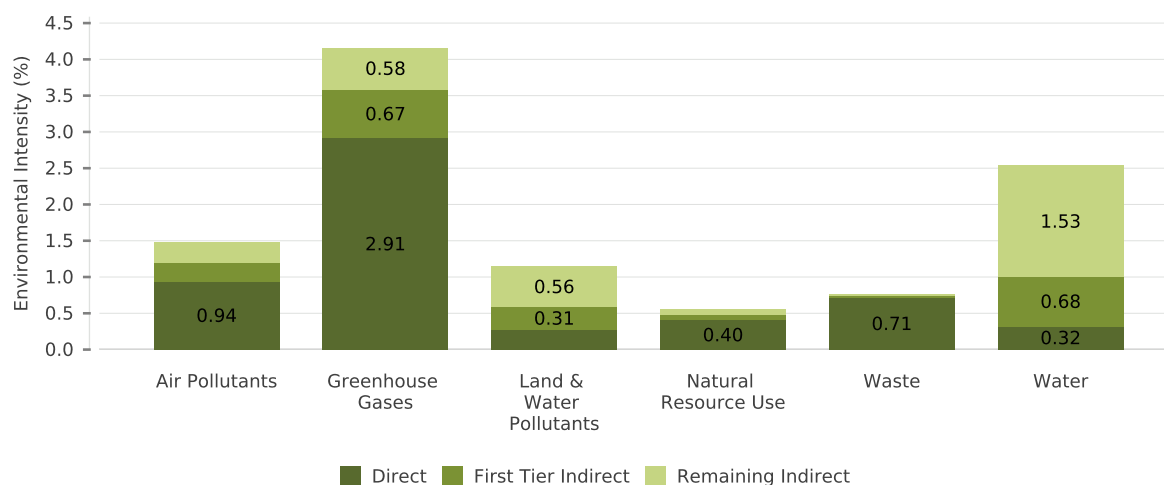
Environment

Largest Contributors - Weighted Average Environmental Costs Intensity

The largest contributors to the portfolio's environmental intensity are shown below. The 'WAECI Contribution' is the percentage change in the portfolio's intensity that would be caused by excluding the holding referenced. In other words, it is a measurement of how much a specific holding effects the environmental performance of the portfolio.

Description	Provided Identifier	Holding (mEUR)	Sector	Company EC/R Intensity	Rank In Benchmark Sector	WAECI Contribution (%)
PT Japfa Comfeed Indonesia Tbk	XS1588422201	0.345	Consumer Staples	59.26%	N/A	-16.51
GMR Infrastructure Limited	USY3004WAB82	0.336	Industrials	49.00%	N/A	-13.29
Sasol Limited	US80386WAA36	0.333	Materials	35.38%	N/A	-9.50
Marfrig Global Foods S.A.	USG5825AAA00	0.351	Consumer Staples	32.51%	N/A	-9.22
MHP SE	XS1577965004	0.184	Consumer Staples	38.99%	N/A	-5.78
MHP SE	XS1713469911	0.172	Consumer Staples	38.99%	N/A	-5.40
PT Cikarang Listrindo Tbk	USN5276YAD87	0.176	Utilities	37.97%	N/A	-5.38
Sasol Limited	US803865AA25	0.170	Materials	35.38%	27/29	-4.85
Turkiye Sise Cam Fabrik	XS1961010987	0.348	Industrials	16.91%	N/A	-4.75
The AES Corporation	USP1000CAA29	0.119	Utilities	31.35%	N/A	-3.00

Environmental Intensity Broken Down by Issue



The chart to the left shows which environmental 'issue', and within those which scope, contributes most towards the final intensity metric.

Direct GHG emissions are contributing the most towards the portfolio's apportioned environmental damage costs. This is being driven by companies in the Consumer Staples sector, such as PT Japfa Comfeed Indonesia Tbk - an integrated agri-food company - as well as Industrials and Materials companies

When considering the entire supply chain, GHG emissions are followed by Water as the most impactful environmental issue of the six analyzed.

Fossil Fuels & Stranded Assets

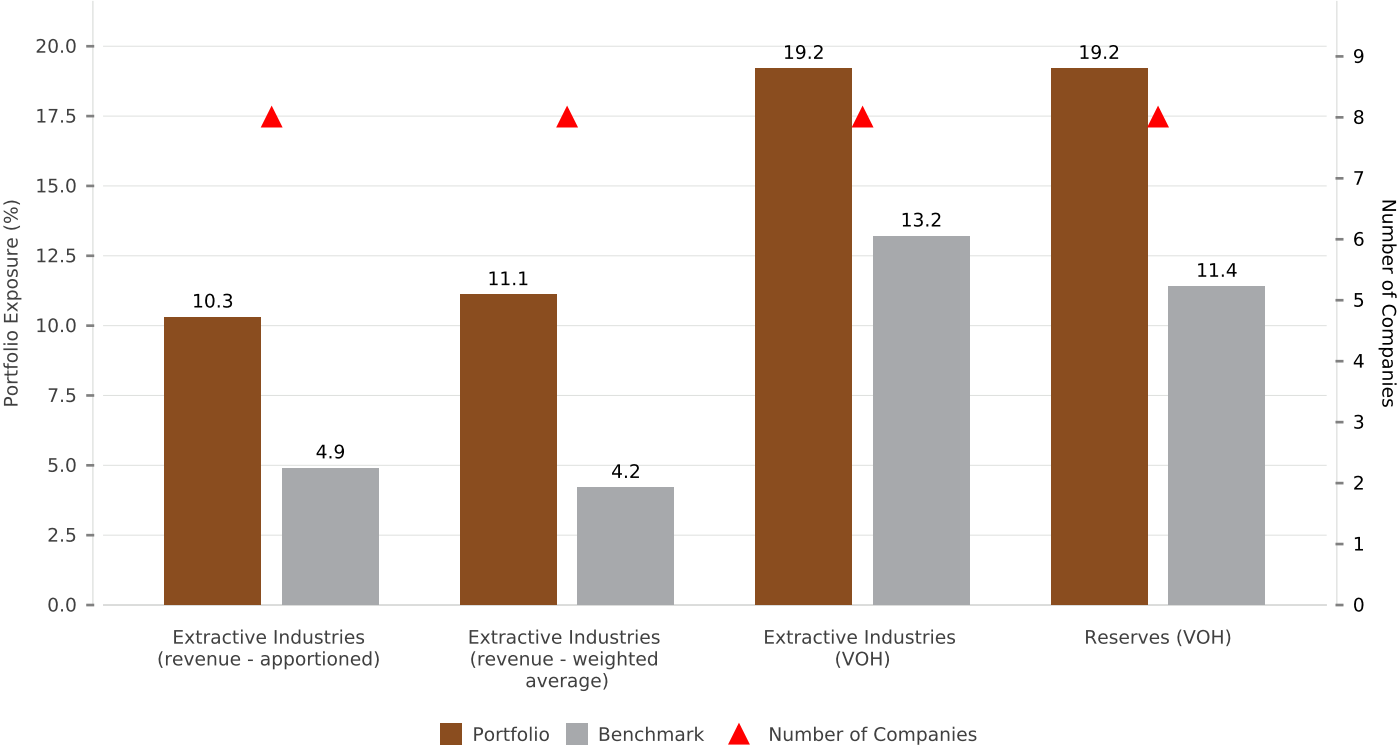
Introduction

Future emissions from fossil fuel reserves far outweigh the allowable carbon budget that will limit global warming to 2 degrees Celsius above pre-industrial levels. Industry experts refer to assets that may suffer from unanticipated or premature write-downs, devaluations or conversion to liabilities as 'stranded assets'. Trucost assesses exposure to such assets by highlighting holdings with business activities in extractive industries, as well as holdings in companies that have disclosed proven and probable fossil fuel reserves in the portfolio. This helps to identify potentially stranded assets that would become apparent as economies move towards a 2 degree alignment.

The portfolio's exposure to potentially stranded assets has been assessed on both a value of holdings (VOH) basis and a revenue basis. For the revenue exposure metric, both the apportioning and weighted average approach are presented. For the VOH exposure metric, the revenue threshold for inclusion was 0%. For more details on the methodology please refer to Appendix 5.

Key Findings

Exposure to Extractive Industries and Reserves



Extraction-related activities include the following sectors

- Crude petroleum and natural gas extraction
- Tar sands extraction
- Natural gas liquid extraction
- Bituminous coal underground mining
- Bituminous coal and lignite surface mining
- Drilling oil and gas wells
- Support activities for oil and gas operations

Fossil fuel reserves may include the following types:

- Coal (metallurgical, thermal or other)
- Oil (conventional or unconventional)
- Gas (natural and shale)
- Oil and/or gas (where no specification has been provided)

On a VoH basis, the portfolio is 68% more exposed to companies disclosing fossil fuel reserves, and around 46% more exposed to companies deriving revenues from extractive activities than the benchmark. As a share of total revenues by apportioning the portfolio derives 112% more from extractive activities than the benchmark and around 165% more by weighted average.

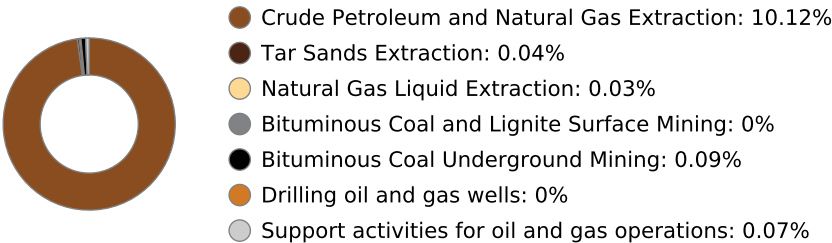
Fossil Fuels & Stranded Assets

Extractives Revenue Exposure by Sector

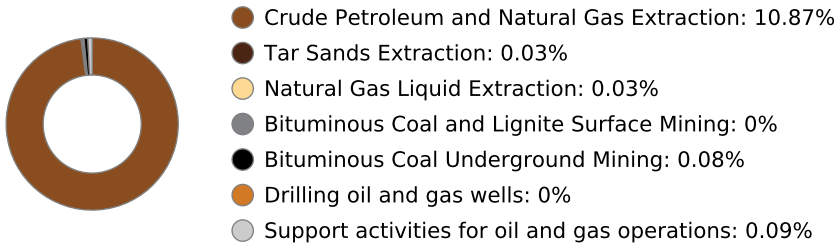
Below is a breakdown of the portfolio's extractive revenue exposure by sector, as a share of total revenue. Both the apportioning and the weighted average methods are displayed.

	Bituminous Coal and Lignite Surface Mining	Bituminous Coal Underground Mining	Crude Petroleum and Natural Gas Extraction	Natural Gas Liquid Extraction	Drilling oil and gas wells	Tar Sands Extraction	Support activities for oil and gas operations	Total Extractives Exposure
Portfolio - apportioned		0.09	10.12	0.03		0.04	0.07	10.35
Benchmark - apportioned	0.14	0.09	4.44	0.04	0.07	0.03	0.08	4.89
Portfolio - weighted		0.08	10.87	0.03		0.03	0.09	11.10
Benchmark - weighted	0.30	0.09	3.51	0.06	0.11	0.03	0.10	4.19

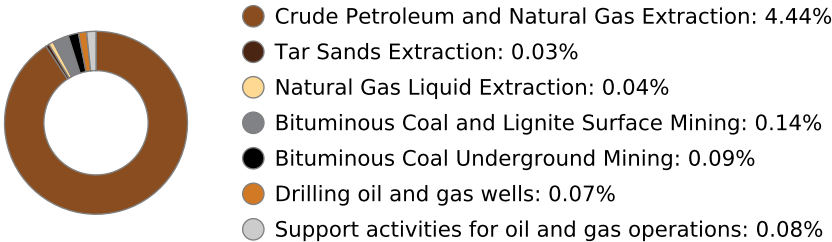
Portfolio - Apportioning Method



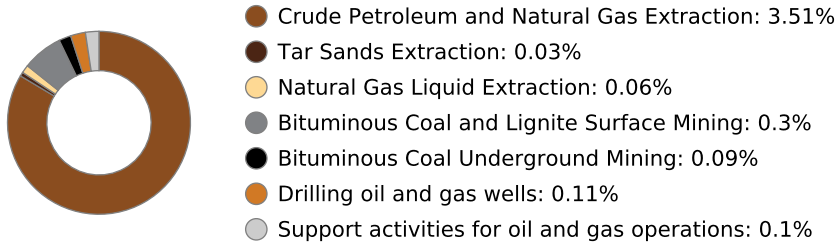
Portfolio - Weighted Average Method



Benchmark - Apportioning Method



Benchmark - Weighted Average Method



Fossil Fuels & Stranded Assets

Embedded Emissions

Trucost is able to analyse the carbon emissions embedded within the fossil fuel reserves which have been disclosed by companies in the portfolio or benchmark. Companies may disclose both 1P and 2P reserves (1P refers to those held with 90% confidence, 2P are those held with 50% confidence). Both 1P and 2P are used when assigning embedded emissions to a company.

The chart below shows the total tonnes of apportioned CO2 from reserves, broken down by reserve type. It also shows the reserves 'intensity' by normalizing the apportioned embedded emissions by the VOH.

The total embedded CO2 emissions from reserves is 0.383 m tonnes.

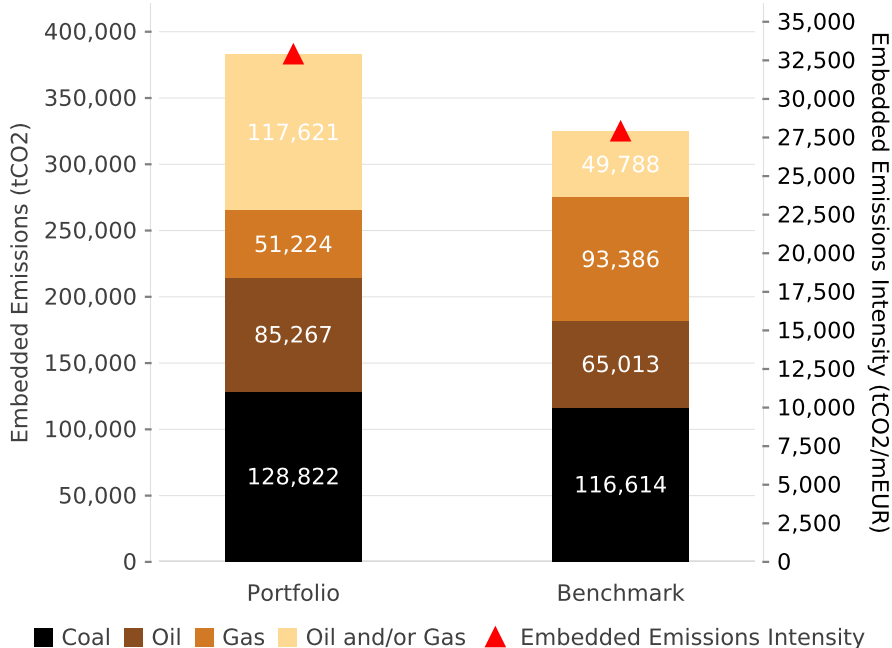
Fossil Fuel CAPEX

In addition to reserves, Trucost collects data on the capital expenditure set aside for fossil fuel related activities such as further exploration and extraction in order to provide additional quantitative insights on stranded asset risk.

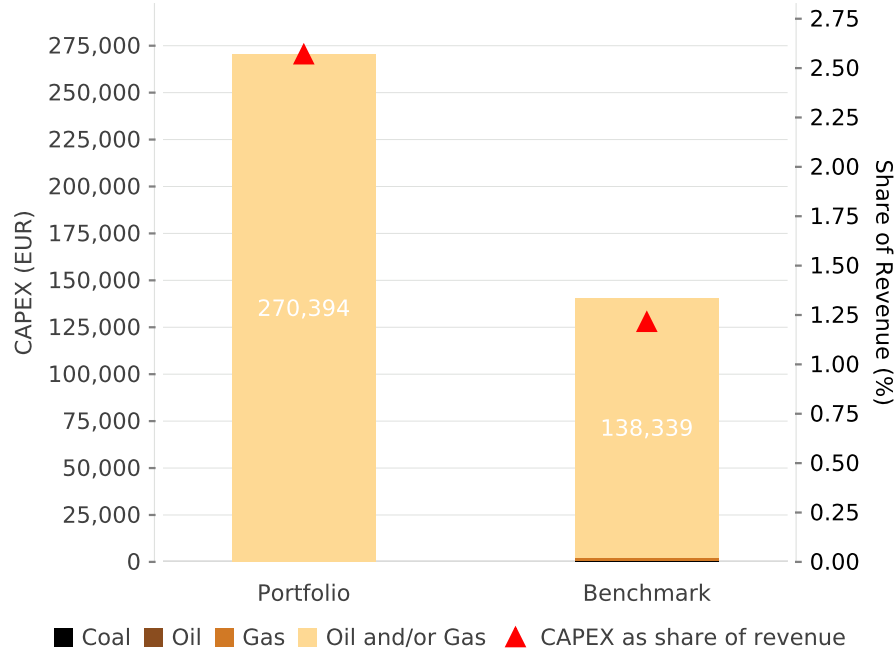
The chart below shows the total apportioned capital expenditure on fossil fuel related activities by reserve type. It also normalizes the CAPEX by showing it as a share of apportioned revenue.

The total apportioned fossil fuel CAPEX is 0.270 mEUR.

Apportioned Future Emissions by Reserve Type



Apportioned CAPEX by Reserve Type



Fossil Fuels & Stranded Assets

Largest Contributors - Extractives Revenue & Embedded Emissions

The table below shows the largest contributors towards the portfolio's apportioned **extractives** revenue. It is displayed as a percentage of the portfolio's total apportioned revenue. The degree to which the company's own revenues are derived from extractive activities is also shown in the adjacent column.

Description	Provided Identifier	Holding (mEUR)	Sector	Portfolio level extractives revenue exposure (% of total)	Company level extractives revenue exposure (% of total)	Portfolio Level Future Emissions From Reserves (MtCO2)	Company Level Future Emissions From Reserves (MtCO2)
Genel Energy Plc	N00010894330	0.329	Energy	3.09%	100.00%	0.050	51.930
Seplat Petroleum	XS1789190243	0.344	Energy	2.80%	100.00%	0.090	191.290
DNO ASA	N00010852643	0.229	Energy	1.70%	100.00%	0.040	157.520
DNO ASA	N00010823347	0.157	Energy	1.17%	100.00%	0.028	157.520
Ecopetrol S.A.	US279158AL39	0.192	Energy	0.68%	49.06%	0.005	666.670
Tullow Oil plc	USG91237AA87	0.092	Energy	0.33%	100.00%	0.003	115.620
Pampa Energia S.A.	USP7873PAE62	0.147	Utilities	0.29%	15.68%	0.003	46.310
YPF SA	USP989MJAY76	0.245	Energy	0.17%	4.67%	0.012	410.710
Sasol Limited	US80386WAA36	0.333	Materials	0.09%	2.79%	0.101	3,660.250
Sasol Limited	US803865AA25	0.170	Materials	0.04%	2.79%	0.052	3,660.250

The table below shows the largest contributors towards the portfolio's apportioned **embedded emissions**. The absolute contributions are shown in the second to last column, while final column shows the company's total level of emissions from reserves.

Description	Provided Identifier	Holding (mEUR)	Sector	Portfolio level extractives revenue exposure (% of total)	Company level extractives revenue exposure (% of total)	Portfolio Level Future Emissions From Reserves (MtCO2)	Company Level Future Emissions From Reserves (MtCO2)
Sasol Limited	US80386WAA36	0.333	Materials	0.09%	2.79%	0.101	3,660.250
Seplat Petroleum	XS1789190243	0.344	Energy	2.80%	100.00%	0.090	191.290
Sasol Limited	US803865AA25	0.170	Materials	0.04%	2.79%	0.052	3,660.250
Genel Energy Plc	N00010894330	0.329	Energy	3.09%	100.00%	0.050	51.930
DNO ASA	N00010852643	0.229	Energy	1.70%	100.00%	0.040	157.520
DNO ASA	N00010823347	0.157	Energy	1.17%	100.00%	0.028	157.520
YPF SA	USP989MJAY76	0.245	Energy	0.17%	4.67%	0.012	410.710
Ecopetrol S.A.	US279158AL39	0.192	Energy	0.68%	49.06%	0.005	666.670
Pampa Energia S.A.	USP7873PAE62	0.147	Utilities	0.29%	15.68%	0.003	46.310
Tullow Oil plc	USG91237AA87	0.092	Energy	0.33%	100.00%	0.003	115.620

Fossil Fuels & Stranded Assets

Coal Exposure

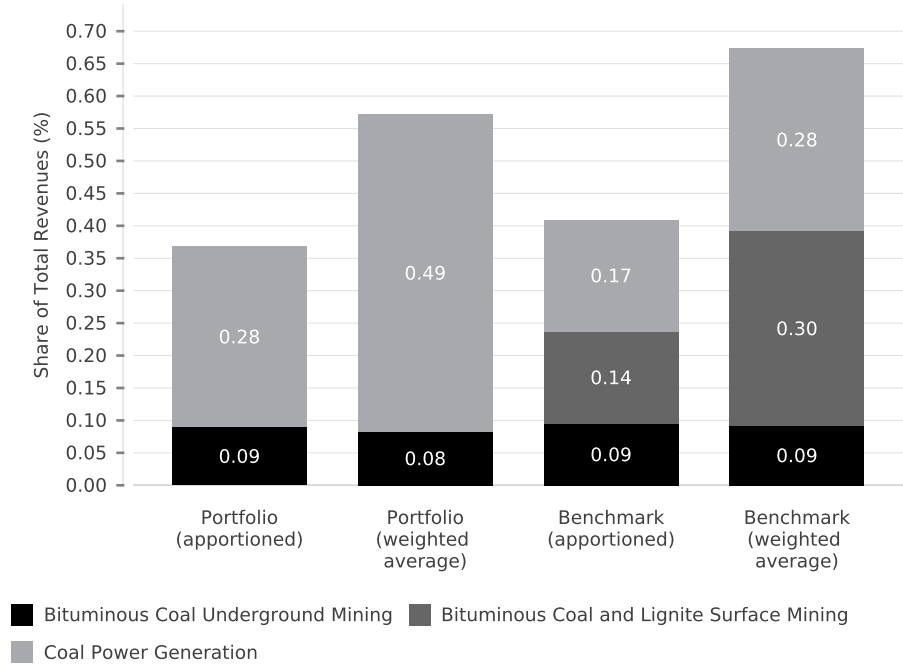
Coal related activities are widely understood to be among the largest contributors to anthropogenic carbon emissions. As such, an increasing number of investors are strategizing around coal exposure and positioning for a transition to a low carbon economy. This may include strategies such as implementing reduction targets for exposure to the embedded emissions, or adopting an assess-engage-monitor-divest approach to individual holdings involved in coal mining or coal power activities.

Trucost has assessed both the VOH and revenue exposure at the portfolio level to the following activities:

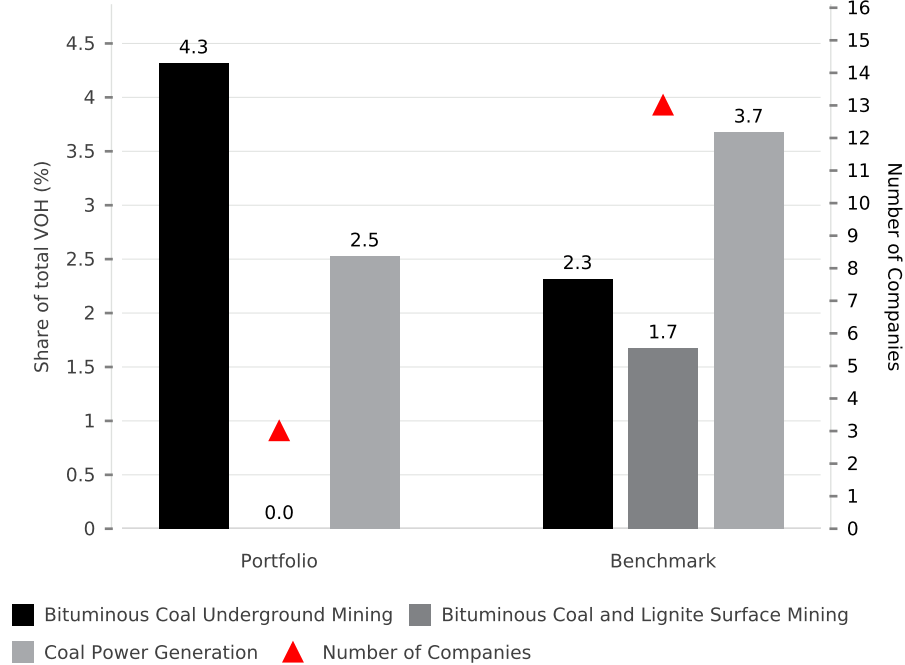
- Bituminous coal underground mining
- Bituminous coal and lignite surface mining
- Coal power generation

For the revenue exposure metric, both the apportioning and weighted average approach are presented. For the VOH exposure metric, the revenue threshold for inclusion was 0%. For more details on the methodology please refer to Appendix 5.

Coal Revenue Exposure by Sector



Coal VOH Exposure by Sector



Fossil Fuels & Stranded Assets

Largest Contributors - Coal Revenue

The table below shows the largest contributors towards the portfolio's apportioned coal revenue. The absolute contributions are shown in the final column, while the second to last column shows the degree to which the company's own revenues are derived from coal mining and/or power generation.

Description	Provided Identifier	Holding (mEUR)	Company Level Coal Extracted (m tonnes)	Company Level Coal Surface Mining Exposure (% of revenues)	Company Level Coal Underground Mining (% of revenues)	Company Level Coal Power Generation Exposure (% of revenues)	Company Level Total Coal Exposure (% of revenues)	Portfolio Level Apportioned Revenues From Coal (EURm)
PT Cikarang Listrindo Tbk	USN5276YAD87	0.176				18.21%	18.21%	0.022
The AES Corporation	USP1000CAA29	0.119				21.12%	21.12%	0.008
Sasol Limited	US80386WAA36	0.333	38.800		1.90%		1.90%	0.006
Sasol Limited	US803865AA25	0.170	38.800		1.90%		1.90%	0.003

Approximately 75% of the portfolio's coal related revenue exposure, and 85% of the VoH exposure is derived from coal power generation. The largest contributor to the portfolio's coal revenues is PT Cikarang Listrindo Tbk, a company engaged in electricity generation and transmission, including a coal power generation. Other top contributors include The AES Corporation, another company with revenues derived from coal power generation and Sasol Limited, which derives some revenues from underground coal mining activities.

Overall, the portfolio is slightly less exposed to coal-related revenues versus the benchmark, with the share of total revenues sitting at around 0.37% versus 0.4%.

Energy Transition

Introduction

While carbon footprints can help to identify the most carbon efficient companies within a portfolio, they do not recognise those companies that are contributing positively to the low carbon economy by offering climate-mitigation or adaptation solutions. As the energy generating sectors are critical to this transition, Trucost has analysed physical units of power production embedded within the portfolio to highlight aggravators (fossil fuels) vs. mitigators (renewables). The generation types within each category are as follows:

- **Renewable Energy Generation:** solar, wind, wave & tidal, geothermal, hydroelectric, biomass
- **Fossil Fuel Energy Generation:** coal, petroleum, natural gas
- **Other Energy Generation:** nuclear, landfill gas, any other unclassified power generation

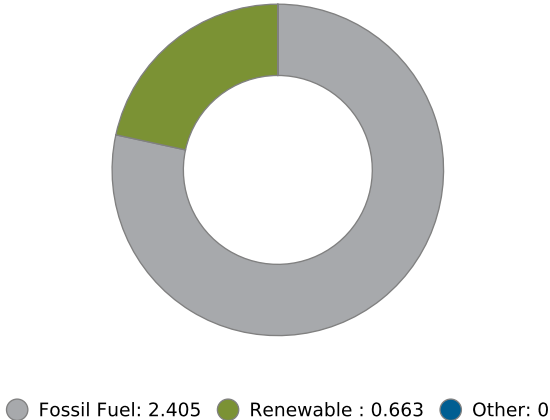
For more details on the apportioning methodology please refer to Appendix 2.

Generation Mix

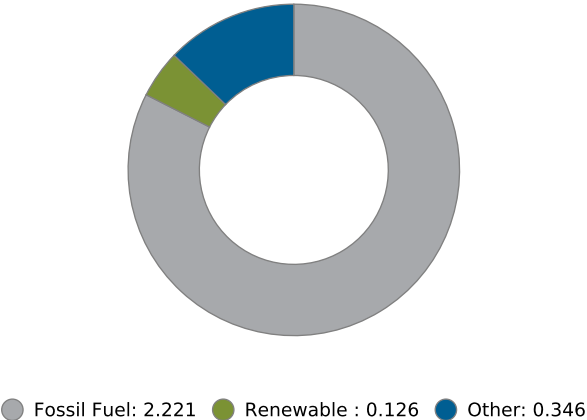
The table below breaks out the apportioned Gigawatt hours (GWh) by generation type. Hydroelectric and biomass have been separated from the 'Other renewables' due to their potential for controversy relating to implementation or sourcing, which can bring in to question their 'sustainability' credentials.

	Fossil Fuels			Renewable			Other	
	Coal (GWh)	Petroleum (GWh)	Natural Gas (GWh)	Hydroelectric (GWh)	BioMass (GWh)	Other Renewables (GWh)	Nuclear (GWh)	Other Sources (GWh)
Portfolio	0.438	0.051	1.917	0.520	+0.000	0.143		+0.000
Benchmark	0.847	0.027	1.346	0.092	0.004	0.030	0.343	0.002

Portfolio - Apportioned GWh



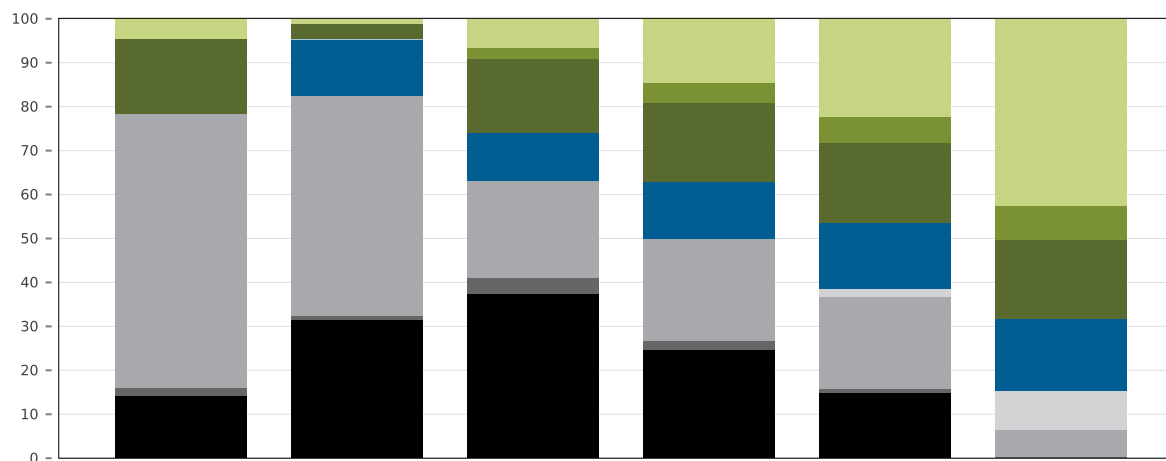
Benchmark - Apportioned GWh



Energy Transition

2 Degree Alignment

Investors are increasingly asking how they can align their portfolio with globally agreed forward-looking targets to mitigate climate change - so called two degree targets. Historically, portfolios have been measured against traditional financial benchmarks which generally reflect the economy today rather than the low carbon economy - as suggested by the International Energy Agency (IEA) - we need for tomorrow. This over-represents traditional fossil fuel energy sectors and under-represents greener energy providers. To overcome this issue, Trucost compares the current energy mix of a portfolio to the IEA's two degree scenarios, showing investors how to work toward an energy transition goal. This allows them to redirect capital to have the highest "transition" impact and help to finance the low carbon economy.



	Portfolio	Benchmark	IEA (World) 2016 2 Degree Scenario	IEA (World) 2025 2 Degree Scenario *	IEA (World) 2030 2 Degree Scenario *	IEA (World) 2050 2 Degree Scenario *
Other renewables	4.66%	1.12%	6.39%	14.60%	22.31%	42.52%
Biomass	+0.00%	0.13%	2.63%	4.65%	5.92%	7.91%
Hydroelectric	16.93%	3.40%	16.67%	17.84%	18.16%	17.91%
Other sources (incl. landfill gas)	+0.00%	0.09%	0.05%			
Nuclear		12.75%	11.14%	12.97%	15.06%	16.29%
Fossil energy with CCS			0.04%	0.19%	1.62%	8.98%
Natural Gas	62.47%	50.00%	21.94%	23.07%	21.04%	6.04%
Petroleum	1.66%	1.01%	3.84%	2.00%	0.96%	0.27%
Coal	14.26%	31.48%	37.31%	24.68%	14.94%	0.08%

The portfolio has a much lower share of energy generation based on coal power than the benchmark and the IEA's 2016, 2025 and 2030 2 Degree aligned scenarios. Furthermore, it has a higher share based on hydroelectricity. The portfolio's largest hydroelectricity generators are The AES Corporation and Light S.A.

It is worth noting that the portfolio and benchmark generation mixes are based only on disclosed energy production data. Companies operating in the energy sector but not disclosing units of energy produced are not included in the grid mix presented here. Such companies will, however, be captured in the revenue exposure analysis below.

* The content within table above was prepared by S&P Trucost Limited, with data derived from the 2 Degree Scenarios developed by the International Energy Agency. ©OECDIEA 2017. The content within the table above does not necessarily reflect the views of the International Energy Agency.

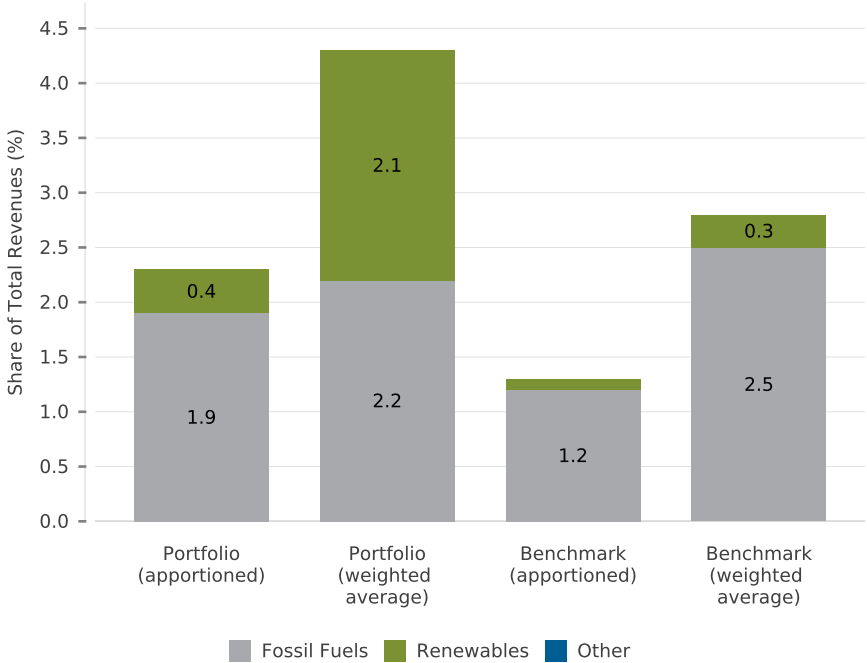
Energy Transition

Energy Generation Revenue Exposure

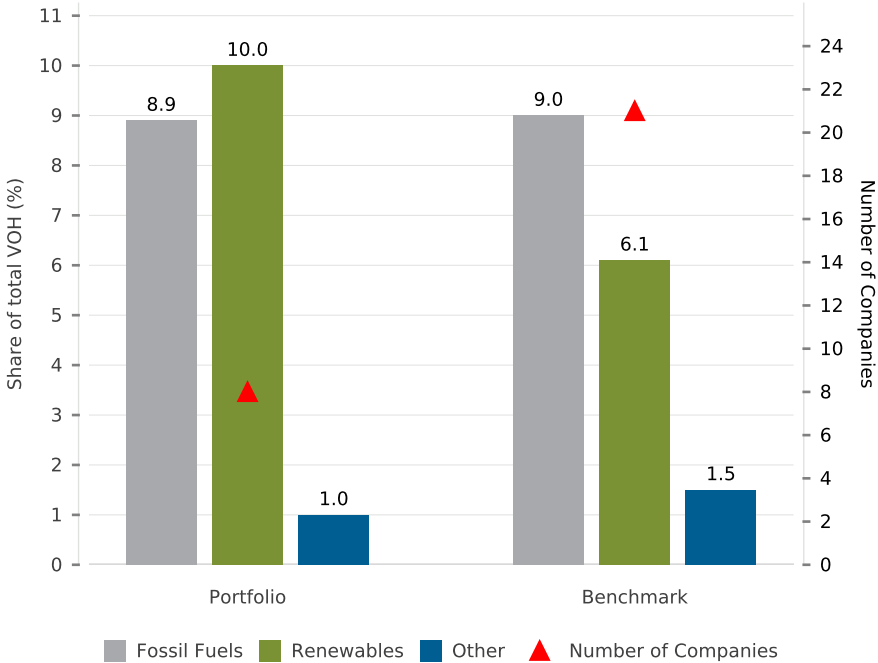
The analysis above has focused on the physical units of power generated by companies within the portfolio. As not all energy companies disclose this information, it is also useful to determine exposure to 'aggravators' and 'mitigators' based on sources of revenue. Trucost has assessed both the value of holding (VOH) and revenue exposure to fossil fuel, renewable, other power generation for the portfolio and benchmark.

For the revenue exposure metric, both the apportioning and weighted average approach are presented. For the VOH exposure metric, the revenue threshold for inclusion was 0%. For more details on the methodology please refer to Appendix 5.

Revenue Exposure to Energy Generation



VOH Exposure to Energy Generation



Energy Transition

Largest Contributors - Renewable & Fossil Fuel Energy Revenue

The table below shows the largest contributors towards the portfolio's apportioned renewable energy revenue. The absolute contributions are shown in the final column, while the second to last column shows the degree to which the company's own energy revenues are derived from renewable generation.

Description	Provided Identifier	Holding (mEUR)	Company Level Renewables Revenue (% of total)	Company Level Fossil Fuels Revenue (% of total)	Company Level Other Revenue (% of total)	Company Level Total Energy Revenue (% of total)	Renewables Share (% of total energy revenue)	Portfolio Level Total Apportioned Renewables Revenue (EURm)
Light S.A.	USP62763AA81	0.184	8.71%			8.71%	1.00%	0.022
The AES Corporation	USP1000CAA29	0.119	23.03%	46.82%	+0.00%	69.87%	0.33%	0.008
Ellaktor S.A.	XS2092381107	0.180	3.20%			3.20%	1.00%	0.006
Pampa Energia S.A.	USP7873PAE62	0.147	2.93%	17.75%		20.68%	0.14%	0.006
Adani Green Energy	XS1854172043	0.187	100.00%			100.00%	1.00%	0.003
Koc Holding	XS1961766596	0.174	0.02%	0.04%		0.07%	0.35%	+0.000
Koc Holding	XS1379145656	0.171	0.02%	0.04%		0.07%	0.35%	+0.000

The table below shows the largest contributors towards the portfolio's apportioned fossil fuel energy revenue. The absolute contributions are shown in the final column, while the second to last column shows the degree to which the company's own energy revenues are derived from fossil fuel generation.

Description	Provided Identifier	Holding (mEUR)	Company Level Renewables Revenue (% of total)	Company Level Fossil Fuels Revenue (% of total)	Company Level Other Revenue (% of total)	Company Level Total Energy Revenue (% of total)	Fossil Fuel Share (% of total energy revenue)	Portfolio Level Total Apportioned Fossil Fuel Revenue (EURm)
PT Cikarang Listrindo Tbk	USN5276YAD87	0.176		74.40%		74.40%	1.00%	0.088
YPF SA	USP989MJAY76	0.245		16.55%		16.55%	1.00%	0.062
Pampa Energia S.A.	USP7873PAE62	0.147	2.93%	17.75%		20.68%	0.86%	0.035
The AES Corporation	USP1000CAA29	0.119	23.03%	46.82%	+0.00%	69.87%	0.67%	0.017
Koc Holding	XS1961766596	0.174	0.02%	0.04%		0.07%	0.65%	+0.000
Koc Holding	XS1379145656	0.171	0.02%	0.04%		0.07%	0.65%	+0.000

APPENDIX

1. Scopes

Before beginning a carbon or environmental audit, an investor must decide on what scopes to include in their analysis. Some believe that only operational impacts/emissions should be considered when calculating a company's exposure, i.e. the resources/pollutants owned or controlled by the reporting entity. This casts the net around impacts that the investee (and, to a lesser extent, the investor) has a direct sphere of influence over. It also avoids the possibility of double counting. However, as risks may be passed on through the supply chain in the form of higher prices, it may sometimes be more pragmatic to include emissions originating from suppliers.

CARBON: Trucost collects greenhouse gas data covering Scopes 1, 2 and 3 upstream emissions, as well as additional data relating to non-Kyoto Protocol greenhouse gases. Definitions of the available scopes are shown below:

- **Scope 1** = CO₂e emissions based on the Kyoto Protocol greenhouse gases generated by direct company operations.
- **Scope 2** = CO₂e emissions generated by purchased electricity, heat or steam.
- **Scope 3 (upstream)** = CO₂e emissions generated by a company's non-electricity supply chain.
- **Direct** = Scope 1 plus CO₂e emissions from four additional sources, CCl₄, C₂H₃Cl₃, CBrF₃, and CO₂ from Biomass.
- **First Tier Indirect** = Scope 2 plus emissions from direct (or "Tier 1") upstream Scope 3 emissions.
- **Remaining Indirect** = Tier 2 and onward upstream Scope 3 emissions.

ENVIRONMENT: As with carbon analysis, the scopes available for an environmental audit are Direct, First Tier Indirect, and Remaining Indirect impacts. Direct impacts result from a company's own operations and include emissions from fuel combustion (boilers and company owned vehicles), pollution from water abstracted, natural resource use, and waste generated from industrial production. Indirect impacts from supply chains occur because of the goods or services a company procures. Indirect impacts are broken down between those in the first tier of the supply chain and those in the remaining tiers.

2. Apportioning

Many of the exposure metrics calculated by Trucost rely on the apportioning of company owned resources/pollutants to the portfolio or benchmark. Apportioning, as an approach, is built on the principle of ownership. That is, if an investor owns - or in the case of debt holdings, finances - 1% of a company, then they also 'own' 1% of the company's resources/pollutants.

For equity only portfolios the apportioning factor is usually obtained by dividing the value of holding by the company's market capitalisation on the date of analysis. For debt only, or mixed portfolios, enterprise value usually replaces market capitalization as the denominator. The company level resources/pollutants are then multiplied by the apportioning factor to arrive at resource/pollutant quantities specific to each holding. The portfolio level resources/pollutants is the sum of all of these quantities.

APPENDIX

3. Carbon & Environmental Intensity Calculation

Portfolios with larger assets under management will typically have a higher amount of total apportioned resources/pollutants than smaller portfolios because of their size. As most portfolios have a remit to grow assets under management, it is important to normalise these absolute quantities to allow for fair comparison year on year against other portfolios or benchmarks. The three most common approaches to normalizing emissions/impacts are:

1. Dividing the apportioned emissions/impacts by the amount invested.
2. Dividing the apportioned emissions/impacts by the apportioned annual revenues.
3. Summing the product of each holding's weight in the portfolio with the company level carbon/environmental revenue intensity.

For ease of reference, Trucost has defined these as **Carbon to Value Invested**, **Carbon to Revenue**, and **Weighted Average Carbon Intensity** respectively.

The first gives an indication of carbon or environmental 'efficiency' with respect to shareholder value creation. The second gives an indication of 'efficiency' with respect to output (as revenues are closely linked to productivity). The third approach circumvents the need for apportioning ownership of carbon, revenue or environmental impacts to individual holdings. Whilst the first two methods act as indicators of an investor's contribution to climate change or ecosystem damage, the weighted average method seeks to show an investor's exposure to carbon/environmentally intensive companies, i.e. is not an additive in terms of carbon budgets.

4. Carbon Disclosure

The level of carbon disclosure is based on each company's Scope 1 emissions, and can be classified as fully disclosed, partially disclosed, or modelled.

- **Full Disclosure** refers to when exact figures have been extracted from annual reports, 10Ks, financial account disclosures, CDP disclosures, environmental/CSR reports, or from personal communication with a company.
- **Partial Disclosure** refers to when Trucost has needed to derive, adjust, or scale any of the data acquired from the sources described above.
- **Modelled** refers to when Trucost has calculated estimates using its proprietary environmentally enhanced input-output model, due to the unavailability or unreliability of up-to-date disclosures.

The overall level of disclosure in the portfolio is assessed using the following three approaches:

- **Value of Holdings:** This is the sum of the weights of each holding within each of the three disclosure categories.
- **GHG:** This is the sum of the portfolio's apportioned Scope 1 CO₂e within each of the three disclosure categories.
- **Number of companies/instruments:** This is the number of companies/instruments within each of the three disclosure categories.

APPENDIX

5. Revenue & Reserves Exposure

When assessing exposure to extractive industries, coal, or energy generation revenues, three approaches are used.

1. **Apportioned Revenue Exposure**
2. **Weighted Average Revenue Exposure**
3. **VOH Exposure**

The first represents the share of apportioned revenues from the sectors in question as a percentage of the total apportioned revenues from any sector (for more information on apportioning please refer to Appendix 2). The second is calculated by summing the product of each holding's weight in the portfolio with the company level revenue dependency on the sector in question. The third is calculated by summing the weights of any holdings in companies that have a revenue dependency on the sectors in question above a predefined threshold. The reason for the threshold is to allow users to exclude companies whose revenue dependency on the sectors in question may not be considered material.

In the case of reserves, holdings in any company disclosing any amount of reserves is included in the VOH exposure metric. Companies that have reserves, but do not disclose them, will not be captured by the analysis.

6. CO2 Equivalent (CO2e)

Each greenhouse gas differs in its ability to absorb heat in the atmosphere. HFCs and PFCs are the most heat-absorbent. Calculations of greenhouse gas emissions are presented in units of millions of metric tons of carbon equivalents (MMTCE), which weights each gas by its GWP value, or Global Warming Potential. The Global Warming Potentials used in Trucost analysis are:

Carbon Dioxide - 1
Methane - 21
Nitrous Oxide - 310
Sulphur Hexafluoride - 23,900
Per Fluoro Carbons - 7,850
Hydro Fluoro Carbons - 5,920

These conversion figures are taken from the publically available 2006 Intergovernmental Panel on Climate Change's (IPCC) 'Guidelines for National Greenhouse Gas Inventories'.

APPENDIX

7. Environmental Valuation

Why apply valuations to environmental impacts? Traditional approaches to environmental impact measurement provide a variety of different metrics. For example, carbon and other pollutants are measured in tonnes, for water it is cubic meters. This makes it difficult to compare the relative contribution of each impact and therefore prioritise risks. Trucost addresses this problem by applying monetary valuations to each impact, thereby providing an overarching common metric to assess risk and opportunity across companies and portfolios.

The analysis applies the chosen valuations to the impacts associated with a company's own business activities and those of its upstream suppliers, all the way back to raw material extraction. Environmental impacts are often concealed within global supply chains, therefore we use environmentally extended input output (EEIO) modelling to reveal liabilities at each tier of the value chain for holistic risk and opportunity analysis.

ENVIRONMENTAL KPIs:

Greenhouse Gases:

The categories included in the environmental footprint are carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, per fluoro carbons as well as hydro fluoro carbons and nitrogen trifluoride.

Water Abstraction:

The categories included in the environmental footprint are direct cooling and direct process water, as well as purchased water (i.e. the water acquired from utility companies).

Waste Generation:

The categories included in the environmental footprint are waste incineration, landfill waste, nuclear waste (e.g. from the manufacture of products, the combustion of nuclear fuel or other industrial and medical processes) and recycled waste.

Air Pollutants:

The categories included in the environmental footprint are all emissions released to air by the consumption of fossil fuels and production processes which are owned or controlled by the company. This includes acid rain precursors (e.g. nitrogen oxide, sulphur dioxide, sulphuric acid, ammonia), ozone depleting substances (HFCs and CFCs), dust and particles, metal emissions, smog precursors and VOCs. Each has a set of impacts on human health, buildings and/or crop and forest yields.

Land & Water Pollutants:

The categories included in the environmental footprint are pollutants from fertiliser and pesticides, metal emissions to land and water, acid emissions to water, and nutrient and acids pollutant.

Natural Resource Use:

The categories included in the environmental footprint are extraction of minerals, metals, natural gas, oil, coal, forestry, agriculture and aggregates.

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