



PORTFOLIO DIAGNOSTICS REPORT

CARBON EXPOSURE AND SUSTAINABILITY ANALYSIS

MD-MSRPS-2021

December 14, 2021

Carbon Exposure and Sustainability Snapshot

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Carbon Exposure and Sustainability Report

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The Carbon Underground 200™ Exposure Analysis

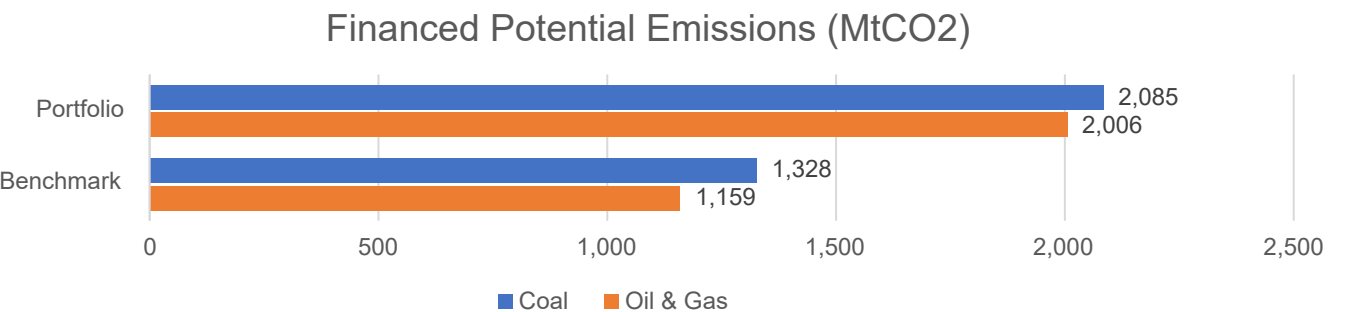
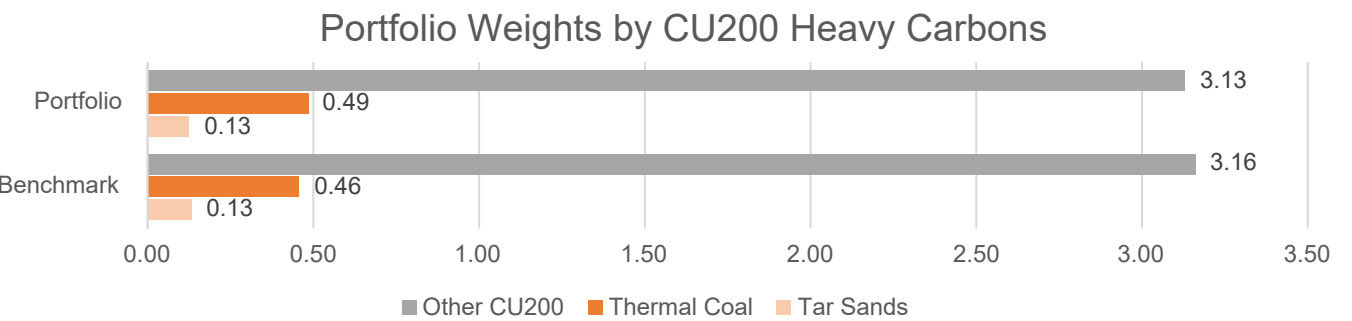
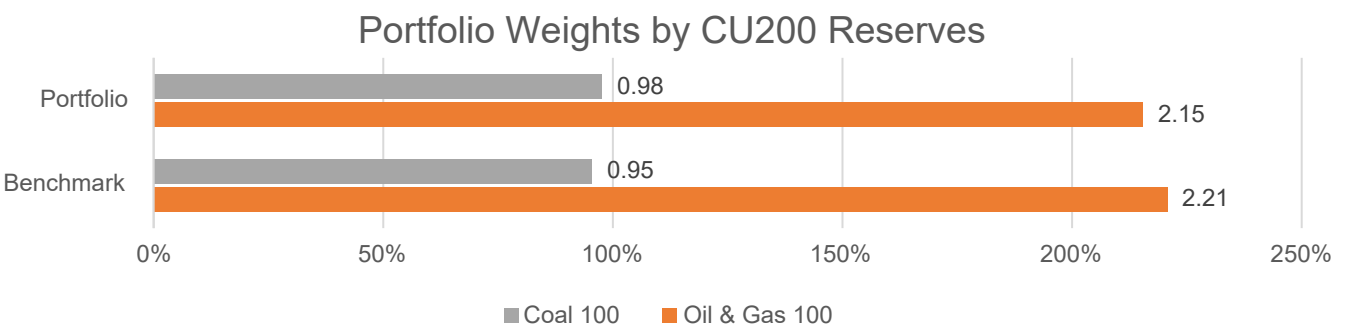
The Carbon Underground 200™ (CU200) represents the largest publicly-listed fossil fuel reserve owners ranked by the potential carbon emissions¹ embedded in their reported reserves. This section highlights the overlap between the **MD-MSRPS-2021** portfolio and the CU200. The benchmark used for the comparison is the **MSCI ACWI Index**.

- CU200 exposure by percent weight is lower than the benchmark
- Heavy Carbon² exposure by percent weight is greater than the benchmark
- Financed Potential Emissions³ by percent weight is greater than the benchmark

	No. of Constituents		Percent Weight			Financed Potential Emissions [†]	
	Portfolio	Benchmark	Portfolio	Benchmark	Over/ Under Wt.	Portfolio (MtCO ₂)	Benchmark (MtCO ₂)
Total Constituents	13,136	2,284	100	99		4,106	2,516
Non CU200	12,945	2,216	96.87	96.14	0.73		
CU200	191	68	3.13	3.16	-0.03	4,106	2,516
Coal 100 ⁴	86	26	0.98	0.95	0.02	2,085	1,328
Thermal Coal ⁵	67	21	0.49	0.46	0.03	1,146	662
Oil and Gas 100 ⁶	113	47	2.15	2.21	-0.05	2,006	1,159
Tar Sands ⁷	22	13	0.13	0.13	-0.01	39	39

Top Holdings

	Largest Potential Emissions Contributors
CU200	Gazprom PJSC Sponsored ADR
Coal 100	BHP Group Ltd
Thermal Coal	Glencore plc
Oil and Gas 100	Gazprom PJSC Sponsored ADR
Tar Sands	Canadian Natural Resources Limited



Total financed emissions per \$1M invested⁸ in portfolio are equivalent to:



887

Passenger vehicles driven for one year

or



474

Homes heated for one year

GHG Protocol (Scope 1 & 2) Carbon Emissions Analysis

As contrasted with reserves-based potential CO₂ emissions from the CU200 companies, the GHG Protocol (GHGP) standards facilitate the measurement of a company’s greenhouse gas emissions resulting from its operations. The GHG Protocol classifies emissions into three 'scopes'. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all other indirect non-Scope 2 emissions that occur in the value chain. Scope 3 emissions are not included as reporting is sparse and inconsistent.



Clean Energy Investment

The transition from fossil fuel-based energy to clean energy is happening. Many investors are positioning their portfolios for this transition. This table shows your portfolio exposure to publicly-traded clean energy companies. The universe includes selected constituents of The Clean 200 and three clean energy ETFs: PBW, ICLN and QCLN.

CU200 vs. Clean Energy		Clean Energy Breakdown ¹⁰				
% in CU200	% in Clean Energy	Grid Modernization and Energy Storage	Total Renewable Electric Power Generation	Alternative Transportation	Renewable Fuels	Energy Efficiency
Portfolio	3.13%	0.81%	0.58%	0.84%	0.03%	1.19%

ESG Portfolio Overview - SUSTCO 3000 Universe

Sustco Scores¹³ and Ratings are leveraged by market participants to create SmartAlpha & SmartBeta investment portfolios and indexes to achieve their objectives for capital preservation, wealth generation and sustainable impact. The investment thesis embedded in the SUSTCO Scoring algorithm where enterprises that are in the top quartile are leaders in transparency, governance and ESG risk management, conversely the enterprises that in the bottom quartile present unknown ESG risks from a strategic, operational and reporting governance perspective.

3,176 / 13,136

Number of portfolio constituents in the SUSTCO 1000 Universe

69.86%

Portfolio weight represented in the SUSTCO 1000 Universe

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2,094

Number of ESG controversies¹² in the portfolio

The Carbon Underground 200™ Exposure Analysis

Top CU200 Holdings by Portfolio Weight

Portfolio Constituents				Financed Potential Emissions †				
				CU200			Heavy Carbon	
	Sector	Country	Weight	Total	Coal	Oil & Gas	Thermal Coal	Tar Sands
Exxon Mobil Corporation	Integrated Oil and	United States	0.25	51	-	51	-	1
Petroleo Brasileiro SA Sponso	Integrated Oil and	Brazil	0.23	113	-	113	-	-
Vale S.A. Sponsored ADR	Mining and Minera	Brazil	0.14	31	31	-	20	-
Chevron Corporation	Integrated Oil and	United States	0.14	25	-	25	-	1
Oil company LUKOIL PJSC Spo	Integrated Oil and	Russian Federati	0.11	146	-	146	-	-

Top CU200 Holdings by Financed Potential Emissions

Financed CO2 emissions are an indication of future emissions that a portfolio 'owns' by virtue of the equity interest in fossil fuel reserve-owning companies. Fossil fuel reserves generate varying degrees of CO2 emissions when burned depending on the reserve type. The following four tables display the largest portfolio positions ranked by financed emissions in the aggregate and for each reserve type.

Top Carbon Underground 200 Companies by Financed Potential Emissions

Portfolio Constituents				Financed Potential Emissions †				
				CU200			Heavy Carbon	
	Sector	Country	Weight	Total	Coal	Oil & Gas	Thermal Coal	Tar Sands
Gazprom PJSC Sponsored AD	Integrated Oil and	Russian Federati	0.11	676	-	676	-	-
Exxaro Resources Limited	Upstream Energy	South Africa	0.01	377	377	-	241	-
Banpu Public Co. Ltd.(Alien M	Upstream Energy	Thailand	0.02	284	284	-	205	-
China Coal Energy Co. Ltd. Cla	Upstream Energy	China	0.00	236	236	-	229	-
China Shenhua Energy Co. Ltd	Upstream Energy	China	0.01	224	224	-	54	-

Top Portfolio Coal Companies by Financed Potential Emissions

Constituents	Sector	Country	Weight	Coal Financed Potential Emissions	Contribution to Coal Emissions ¹³	Contribution to Portfolio Total Emissions ¹³
Exxaro Resources Limited	Upstream Energy	South Africa	0.01	377	0.18	0.18
Banpu Public Co. Ltd.(Alien M	Upstream Energy	Thailand	0.02	284	0.14	0.14
China Coal Energy Co. Ltd. Cla	Upstream Energy	China	0.00	236	0.11	0.11
China Shenhua Energy Co. Ltd	Upstream Energy	China	0.01	224	0.11	0.11
BHP Group Ltd	Mining and Minera	Australia	0.11	79	0.04	0.04

Top Portfolio Oil & Gas Companies by Financed Potential Emissions

Constituents	Sector	Country	Weight	O&G Financed Potential Emissions	Contribution to O&G Emissions ¹³	Contribution to Portfolio Total Emissions ¹³
Gazprom PJSC Sponsored AD	Integrated Oil and	Russian Federatic	0.11	676	0.34	0.31
Gazprom PJSC	Integrated Oil and	Russian Federatic	0.05	176	0.09	0.08
Oil company LUKOIL PJSC Spo	Integrated Oil and	Russian Federatic	0.11	146	0.07	0.07
PetroChina Company Limited	Integrated Oil and	China	0.02	136	0.07	0.06
Petroleo Brasileiro SA Sponso	Integrated Oil and	Brazil	0.23	113	0.06	0.05

Top Portfolio Heavy Carbon Companies by Financed Potential Emissions

Constituents	Sector	Country	Weight	Heavy Carbon Financed Potential Emissions	Contribution to Heavy Carbon Emissions ¹³	Contribution to Portfolio Total Emissions ¹³
Exxaro Resources Limited	Upstream Energy	South Africa	0.01	241	0.20	0.17
China Coal Energy Co. Ltd. Cla	Upstream Energy	China	0.00	229	0.19	0.11
Banpu Public Co. Ltd.(Alien M	Upstream Energy	Thailand	0.02	205	0.17	0.13
China Shenhua Energy Co. Ltd	Upstream Energy	China	0.01	54	0.05	0.10
Yanzhou Coal Mining Co. Ltd.	Upstream Energy	China	0.00	53	0.04	0.02

The Carbon Underground 200™ Exposure Analysis (continued)

Top CU200 Holdings by Reserves-Based Emissions Intensity

Emissions intensity is a calculation that allows an investor to compare fossil fuel companies regardless of size. The emissions intensity calculation divides the total potential emissions in a company's reported fossil fuel reserves by its sales or market capitalization. A higher number suggests that there is a significant amount of reserves-based emissions yet to be burned relative to a company's historical sales or overall size, indicating potentially a higher risk of stranding. The following charts show the portfolio holdings of the CU200 companies with the highest emissions intensities.

Highest Carbon Emissions Intensity Companies by Market Capitalization					
Constituents	Sector	Country	Carbon Emissions Intensity - Market Cap	Portfolio Weight	Benchmark Weight
Public Power Corporation S.A.	Utilities	Greece	9,183,989	0.00	0.00
NACCO Industries, Inc. Class A	Upstream Energy	United States	8,591,950	0.00	0.00
Coal India Ltd.	Upstream Energy	India	7,996,620	0.00	0.00
Lubelski Wegiel BOGDANKA SA	Upstream Energy	Poland	7,116,933	0.00	0.00
Jastrzebska Spolka Weglowa S.A.	Upstream Energy	Poland	5,769,347	0.00	0.00

Highest Carbon Emissions Intensity Companies by Total Sales					
Constituents	Sector	Country	Carbon Emissions Intensity - Total Sales	Portfolio Weight	Benchmark Weight
PT Adaro Energy Tbk	Upstream Energy	Indonesia	9,537,086,464	0.00	0.00
Empresas Copec S.A.	Downstream and Midstre	Chile	10,144,514	0.00	0.01
NACCO Industries, Inc. Class A	Upstream Energy	United States	8,794,136	0.00	0.00
Coal India Ltd.	Upstream Energy	India	8,706,294	0.00	0.00
Severstal PAO	Mining and Mineral Prodi	Russian Federation	6,338,328	0.00	0.00

Top Carbon Emissions Intensity Companies by Revenue (using Total Reported Scope 1 & 2 Emissions)

Constituents	Sector	Carbon intensity (tCO2e / Mil. Revenue)	Total Reported Scope 1 & 2 Emissions	Sector Average	Portfolio Weight	Benchmark Weight
Power Assets Holdings Limited	Utilities	48,600	8,004,670	1,682	0.01	0.02
Wisetech Global Ltd.	Software and Consulting	30,010	8,537,040	97	0.00	0.01
MKH Bhd.	Real Estate	16,056	4,035,121	96	0.00	0.00
Proya Cosmetics Co., Ltd. Class A	Household Products	15,918	7,649,514	237	0.00	0.00
Kardemir Karabiik Demir celik Sanayi	Mining and Mineral Produ	14,114	6,097,147	877	0.00	0.00
Huaneng Power International, Inc. Cl	Utilities	12,770	333,402,688	1,682	0.00	0.00
China Resources Cement Holdings Lim	Mining and Mineral Produ	12,545	59,605,000	877	0.00	0.00
Aksa Enerji Uretim A.S.	Utilities	11,644	5,296,140	1,682	0.00	0.00
CK Infrastructure Holdings Limited	Utilities	11,641	9,923,680	1,682	0.00	0.01
UltraTech Cement Limited	Mining and Mineral Produ	11,434	58,000,352	877	0.09	0.02

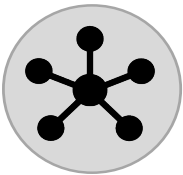
Top Clean Energy Investments

Constituents	Sector	Country	Portfolio Weight
Tesla Inc	Consumer Vehicles and Parts	United States	0.71
NVIDIA Corporation	Electronic Components and Manufacturing	United States	0.56
National Grid plc	Utilities	United Kingdom	0.20
Cisco Systems, Inc.	Hardware	United States	0.15
LONGi Green Energy Technology Co L	Industrial Manufacturing	China	0.15

SUSTCO 3000 Universe – Portfolio Constituent Analysis



3,176 of 13,136 companies in the portfolio have an average of 1 controversies.



3,176 / 13,136

Number of portfolio constituents in the SUSTCO 1000 Universe



69.86%

Portfolio weight represented in the SUSTCO 1000 Universe



2,094

Number of ESG controversies¹² in the portfolio

Top 5 SUSTCO

Constituents
RELX PLC Sponsored ADR
RELX PLC
Moncler SpA
Westpac Banking Corporation
Swedish Orphan Biovitrum AB

Bottom 5 SUSTCO

Constituents
Casella Waste Systems, Inc. Class A
Melrose Industries PLC
Mitsui O.S.K.Lines,Ltd.
PGT Innovations, Inc.
Advanced Energy Industries, Inc.

Controversies by ESG Category

Category	#
Environmental	170
Social	1375
Governance	549

SUSTCO provides a forward-looking indication of a company’s ability to deliver sustainable shareholder value utilizing a scoring methodology that seamlessly integrates 40 of the most relevant and stringent ESG and financial performance metrics.

The SUSTCO 3000 universe of global public companies represent the companies meeting the minimum reporting requirements for 2 or more performance-based metrics within each of the Environmental, Social and Governance (ESG) categories in the SUSTCO Score & Rating Methodology. Our starting universe is 9000+ global public companies across every major stock exchange, region, business sector and market cap tier. Detailed reporting transparency, performance rankings and best in class status are available for all SUSTCO 3000 global public companies.