

ESG Essentials

A look back at 2020 and outlook for 2021, in charts



ESG Essentials

Insights across our global research franchise



Despite the profound disruptions of 2020, or possibly in part because of them, 2020 was a banner year in which ESG grew in size (AUM) and influence. More ESG data became available, social issues moved to the foreground, decarbonization got cheaper and awareness of ESG began to grow among fixed income investors. GS SUSTAIN found that in equities, top ESG performers generated higher economic returns, while the opposite was true for top ESG disclosers.

Looking to 2021, companies from a range of sectors including the automotive sector, steel, utilities, real estate, mining, airlines, oil and tech hardware will confront an opportunity to build competitive advantage on the back of growth and transition opportunities from stimulus packages, policies and regulations. ESG will also impact commodities - our Commodities team sees a bull market for a range of materials exposed to ESG end markets.

In 2021, important policy initiatives from 2020 will come into effect, particularly the EU taxonomy. ESG regulation will impact investors selling into Europe, and will increasingly target portfolio emissions, ESG performance and corporates in Asia. We expect continued investor scrutiny of stewardship and corporate ESG performance and a renewed focus on biodiversity and carbon pricing given COP15 on the Convention on Biological Diversity (CBD) in May 2021 and COP26 on climate change in November 2021.

Inside this report we narrate ESG in 2020-2021 in charts. We wish all our readers a very Happy New Year.

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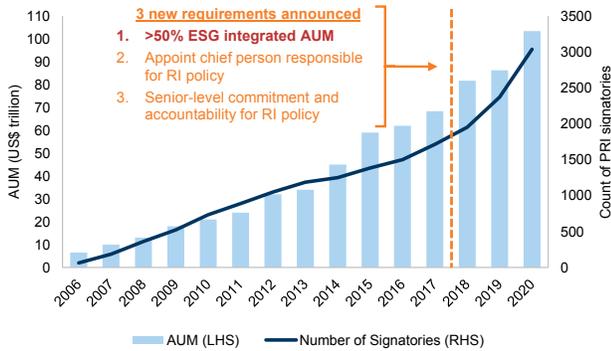
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In 2020: ESG grew in size and influence as a theme...

Exhibit 1: UN PRI signatories and AUM accelerated in 2020 off an already strong base...

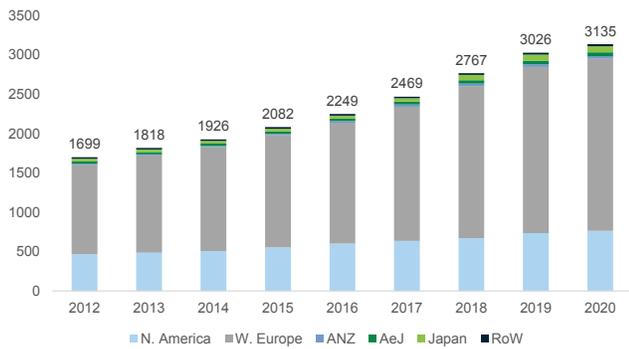
PRI Signatory Growth and AUM, 2006-2020



Source: PRI, Goldman Sachs Global Investment Research

Exhibit 3: ...and the rise of ESG funds

Cumulative number of ESG funds by region

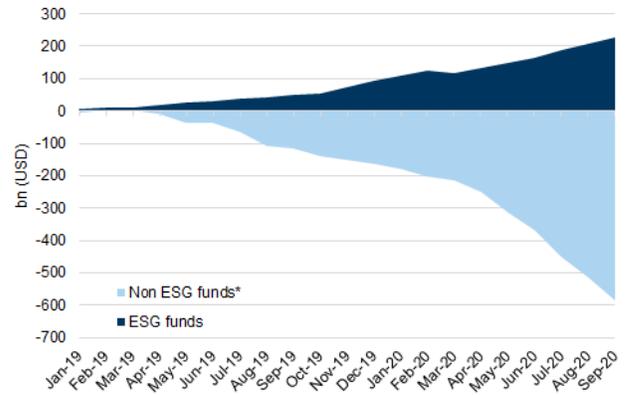


Data as of July 2020. ESG funds only include those funds that use ESG as a determinative criterion in security selection; only equity funds displayed.

Source: Morningstar, Goldman Sachs Global Investment Research

Exhibit 2: ... mirrored in the stark divergence between ESG equity fund flows and their non-ESG counterparts...

Cumulative monthly fund flows for ESG and non-ESG equity funds

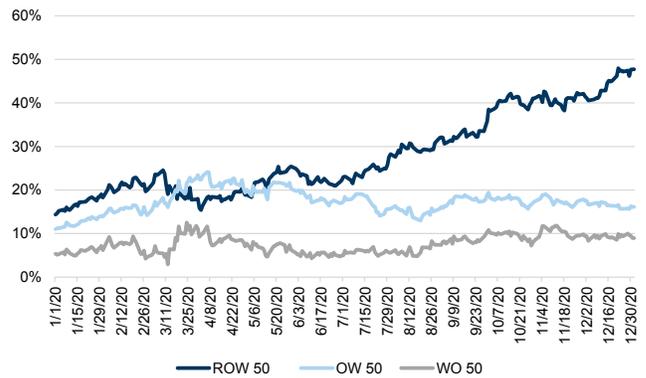


*ESG funds only include those funds that use ESG as a determinative criterion in security selection; only equity funds displayed for both groups

Source: Morningstar

Exhibit 4: Valuation premia for ESG fund favorites expanded...

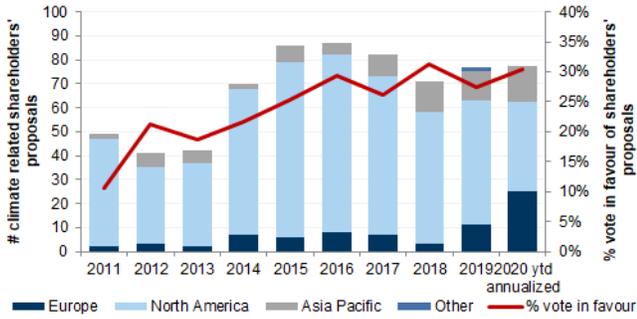
Trimmed mean of 12-mo fwd consensus P/E vs. ACWI GICS 2 peers (2020)



Source: Morningstar, Thomson Reuters, FactSet, Goldman Sachs Global Investment Research

Exhibit 5: ...while globally, shareholders remained strongly engaged in climate-related topics...

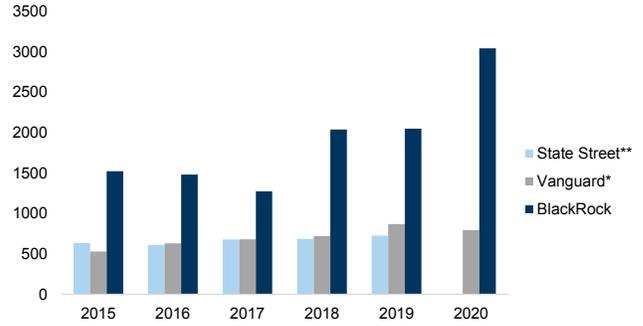
Number of climate-related shareholder's proposals vs. % vote in favour



Source: ProxyInsight, Goldman Sachs Global Investment Research

Exhibit 6: ...and passive investors saw more scrutiny on their voting and engagement

Self-reported corporate engagements by large passive investors



*Vanguard reports no. of companies engaged rather than total no. of engagements;
 **State Street is yet to report for 2020 full year

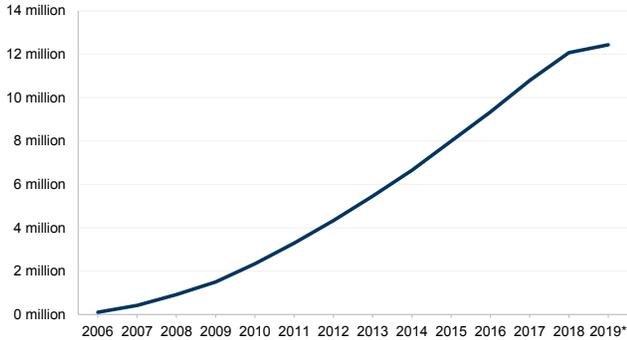
Source: Company data

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...more ESG data became available...

Exhibit 7: ESG data availability improved ...

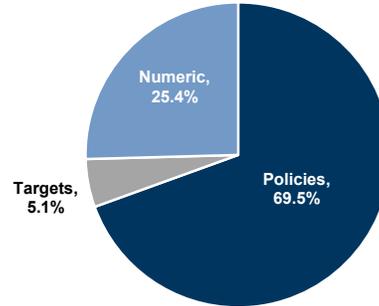
Cumulative number of ESG data points available for 453 select metrics (*2019 represents partial year)



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 8: ...but comparability, timeliness, assurance and depth remained sub-optimal

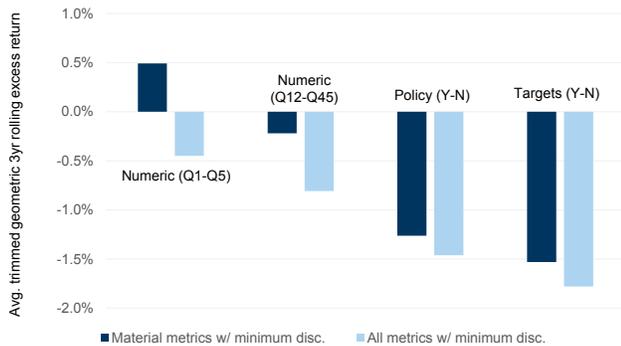
Available ESG data by type, latest available as of July 2020



Source: Refinitiv, Goldman Sachs Global Investment Research

Exhibit 9: Focus on what's measurable and material generated excess returns

Avg. trimmed (80%) geometric mean 3yr rolling excess returns for numeric and binary data, 2011-2019



Source: Axioma, Bloomberg, Refinitiv, Goldman Sachs Global Investment Research

Exhibit 10: Top ESG performers also generated higher economic returns...

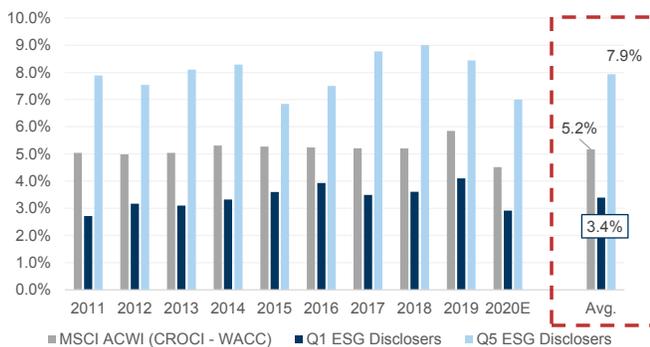
CROCI – WACC spread for the MSCI ACWI and top (Q1) - bottom (Q5) GS SUSTAIN E&S Headline scores, 2011-2020E, trimmed mean (90%)



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 11: ... while the opposite was true for top ESG disclosers

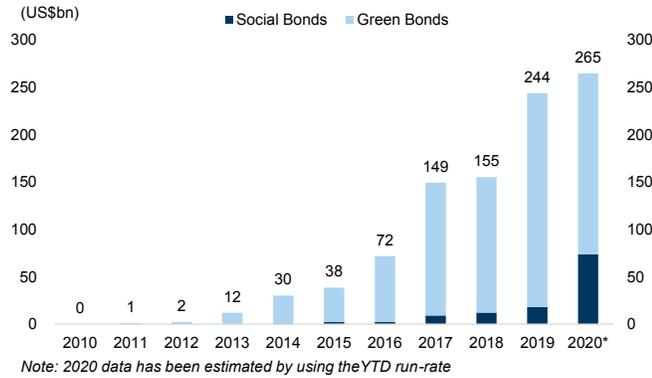
CROCI – WACC spread for MSCI ACWI and top (Q1) - bottom (Q5) Bloomberg ESG Disclosure scores, 2011-2020E, trimmed mean (90%)



Source: Bloomberg, Goldman Sachs Global Investment Research

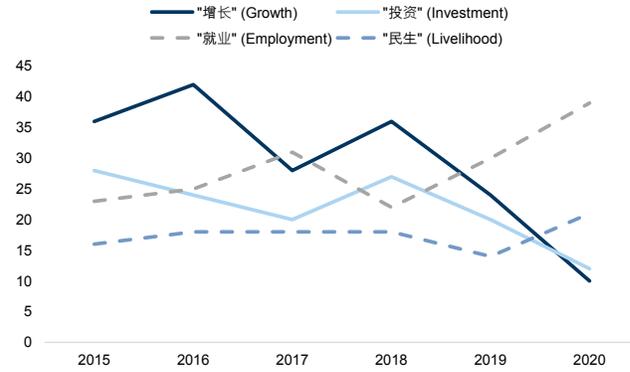
...social issues moved into the foreground...

Exhibit 12: Social bond issuance quadrupled in 2020
Issuance of green and social bonds (2010-2020)



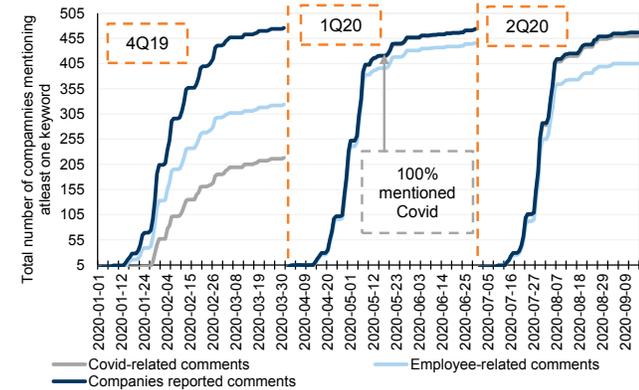
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 13: In China, the balance began to shift from economic growth toward social stability
No of appearances of "Employment", "Livelihood", "Growth" and "Investment" in Government Work Reports (2015-2020)



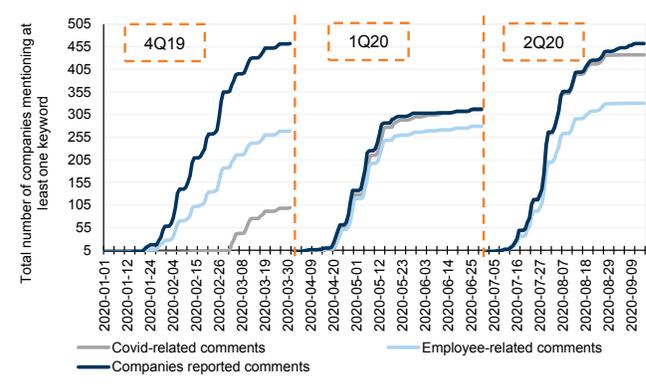
Source: www.gov.cn, Goldman Sachs Global Investment Research

Exhibit 14: In the U.S., there have been rising mentions of "COVID" and "employee" in corporate transcripts
Number of S&P 500 companies mentioning Employee-related and Covid-19 related comments in 2020



Source: Refinitiv, Data compiled by Goldman Sachs Global Investment Research

Exhibit 15: ...with similar trends seen for EU
Cumulative number of STOXX 600 companies mentioning Employee-related and Covid-19 related comments by date, 2020 YTD

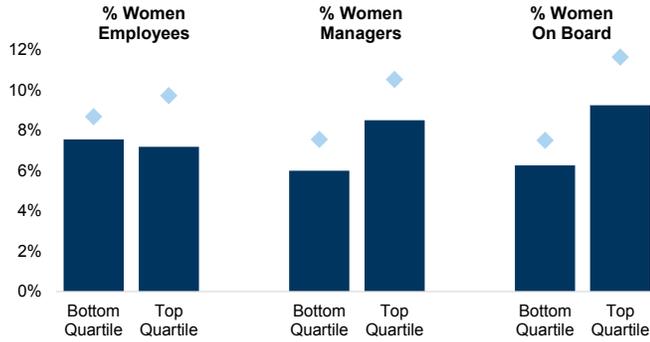


Source: Refinitiv, Data compiled by Goldman Sachs Global Investment Research

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Exhibit 16: Our Portfolio Strategy team found a higher % of women is associated with outperformance...

Annualised return of SXXP companies based on female representation within sector



Dark blue bar: Jan-2009 to Oct-2020 ; Light blue marker: Jan-2009 to Dec-2019

Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 17: ...especially for companies with more women on the board

Performance of 1Q vs. 4Q SXXP companies based on female representation within sector, rebalancing each year



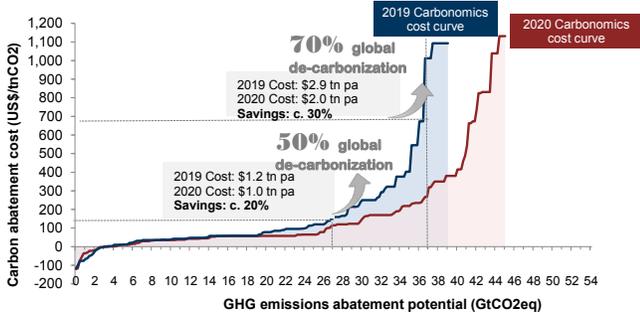
Source: Datastream, Goldman Sachs Global Investment Research

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...decarbonization became cheaper...

Exhibit 18: Tech and financial innovation flattened the de-carbonization cost curve

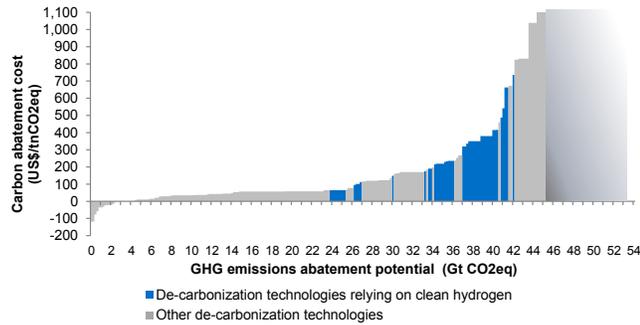
Conservation carbon abatement cost curve for anthropogenic GHG emissions and associated costs for different levels of de-carbonization



Source: Goldman Sachs Global Investment Research

Exhibit 20: ...and clean hydrogen emerged as a key technology relevant for c.20% of global emissions

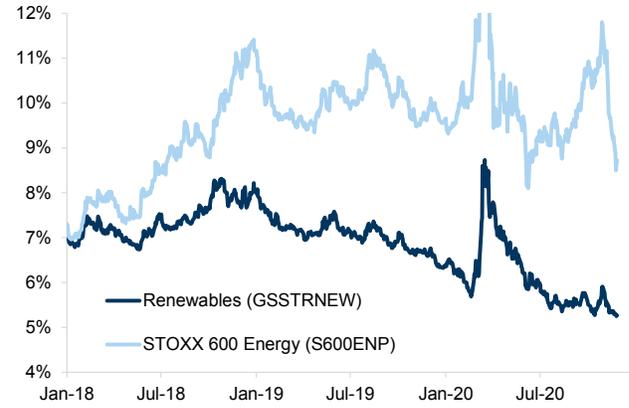
2020 Conservation de-carbonization cost curve with technologies relying on clean hydrogen indicated



Source: Goldman Sachs Global Investment Research

Exhibit 19: Renewables have enjoyed a reduction in the cost of capital...

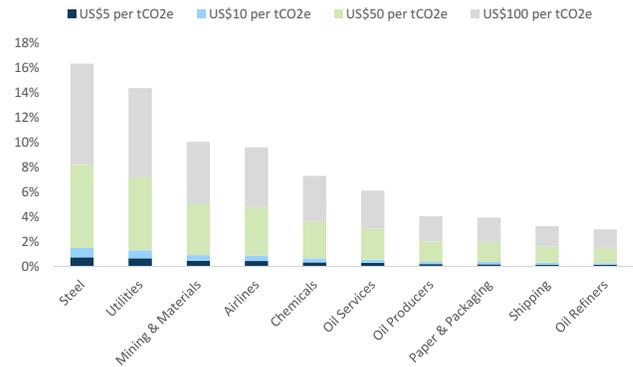
24m fwd Earnings Yield (EY)



Source: FactSet, Goldman Sachs Global Investment Research

Exhibit 21: Carbon offsets are an option, but could be costly...

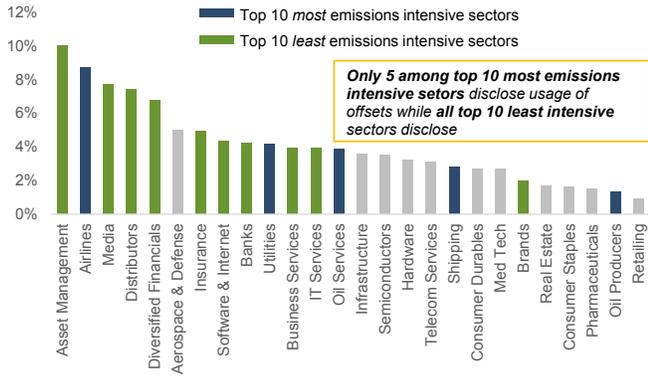
Incremental cost to offset Scopes 1-2 (as % of revenue) based on different carbon prices - 2018



Source: Bloomberg, Thomson Reuters, FactSet, Goldman Sachs Global Investment Research

Exhibit 22: ...and currently are used most by the least emission intensive sectors

Disclosure rate of carbon offsets in MSCI ACWI by sectors



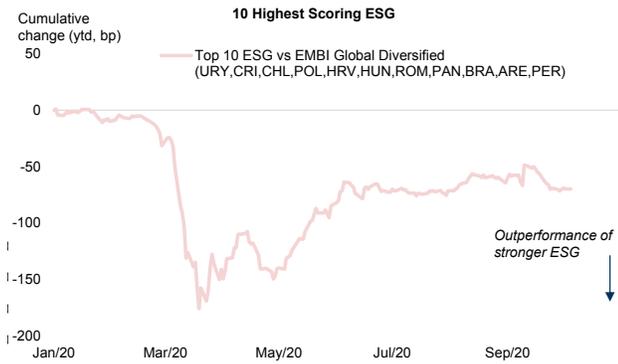
Source: Bloomberg, Thomson Reuters, Goldman Sachs Global Investment Research

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...fixed income moved into ESG orbit.

The following charts are taken from our Credit Strategy and Macro teams' reports on EM Credit and ESG credit issuance.

Exhibit 23: The highest-scoring ESG sovereigns outperformed in 2020...



Source: Bloomberg, Haver Analytics, SDG database, World Bank, Fund for Peace, Freedom House, University of Notre Dame, Goldman Sachs Global Investment Research

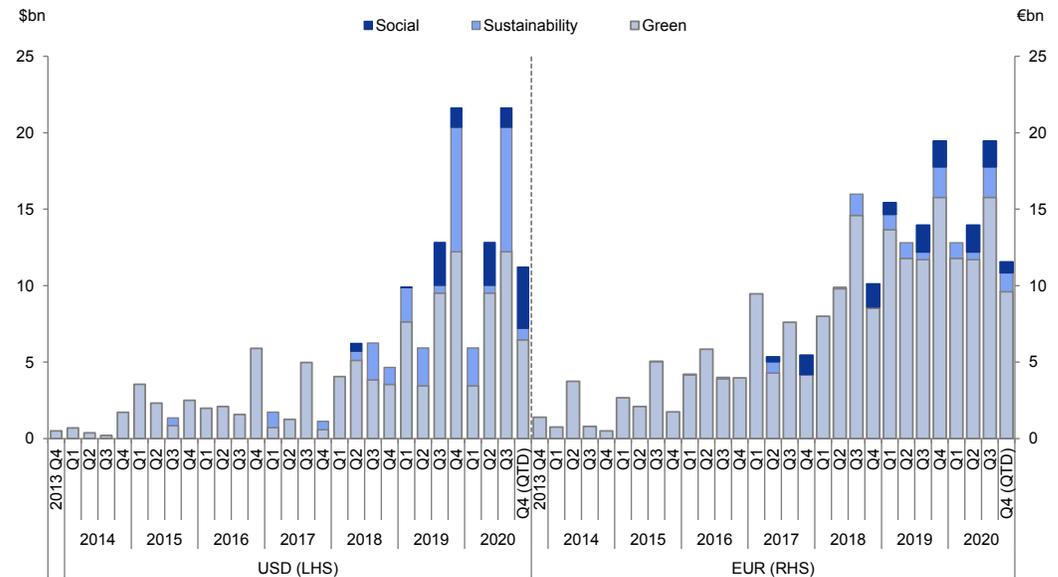
Exhibit 24: ...and the outperformance was most evident within IG



Source: Bloomberg, Haver Analytics, SDG database, Freedom House, Fund for Peace, University of Notre Dame, World Bank, Goldman Sachs Global Investment Research

Exhibit 25: USD and EUR IG ESG-related issuance remained active and even accelerated further in 3Q2020 to reach a new record

Corporate IG supply for the USD and EUR, by quarter and issuance type



Source: Dealogic, Goldman Sachs Global Investment Research

2020's ESG stocks

Exhibit 26: 50 companies that were overweight (relative and absolute) in ESG funds globally in 2020

ESG Nifty Fifty - Relative overweight and absolute overweight 50 lists

ESG Relative Overweight 50				ESG Absolute Overweight 50			
Company	Domicile	GICS 1	Relative weight	Company	Domicile	GICS 1	pp. overwt. to ACWI
1 Suez SA	France	Utilities	1944%	1 TSMC	Taiwan	Info Tech	1.58
2 Coway Co Ltd	S. Korea	Cons. Discr.	1719%	2 Tencent Holdings Ltd	China	Comm. Services	1.28
3 Pennon Group PLC	UK	Utilities	1419%	3 Samsung Electronics Co	S. Korea	Info Tech	0.83
4 Xinyi Solar Holdings Ltd	China	Info Tech	1311%	4 Atlas Copco AB	Sweden	Industrials	0.73
5 SABESP	Brazil	Utilities	1278%	5 Volvo AB	Sweden	Industrials	0.69
6 Guangdong Investment	Hong Kong	Utilities	1252%	6 Alibaba Group Holding Ltd	China	Cons. Discr.	0.67
7 First Solar Inc	USA	Info Tech	1127%	7 Essity AB	Sweden	Cons. Staples	0.64
8 Pentair PLC	UK	Industrials	1119%	8 Ericsson	Sweden	Info Tech	0.54
9 Xylem Inc	USA	Industrials	1012%	9 Allianz SE	Germany	Financials	0.51
10 Solaredge Technologies	Israel	Info Tech	908%	10 SAP SE	Germany	Info Tech	0.51
11 Xinjiang Goldwind Ltd	China	Industrials	872%	11 Hexagon AB	Sweden	Info Tech	0.48
12 Tetra Tech Inc	USA	Industrials	859%	12 Ping An Insurance Group	China	Financials	0.42
13 Veolia Environnement SA	France	Utilities	808%	13 Microsoft Corp	USA	Info Tech	0.42
14 Hera SpA	Italy	Utilities	796%	14 Sandvik AB	Sweden	Industrials	0.41
15 EDP Renovaveis SA	Spain	Utilities	789%	15 American Water Works	USA	Utilities	0.40
16 NCSOFT Corp	S. Korea	Comm. Services	782%	16 SEB Group	Sweden	Financials	0.38
17 American Water Works	USA	Utilities	759%	17 Applied Materials Inc	USA	Info Tech	0.35
18 China Lesso Group	China	Industrials	755%	18 Danaher Corp	USA	Health Care	0.34
19 Sunrun Inc	USA	Industrials	719%	19 AIA Group Ltd	Hong Kong	Financials	0.31
20 Essential Utilities Inc	USA	Utilities	711%	20 Assa Abloy AB	Sweden	Industrials	0.31
21 Siemens Gamesa	Spain	Industrials	677%	21 Michelin SCA	France	Cons. Discr.	0.31
22 Hapvida Participacoes	Brazil	Health Care	666%	22 Xylem Inc	USA	Industrials	0.29
23 Autohome Inc	China	Comm. Services	664%	23 Investor AB	Sweden	Financials	0.29
24 Bank Rakyat Indonesia (Pers)	Indonesia	Financials	654%	24 VF Corp	USA	Cons. Discr.	0.28
25 A. O. Smith Corp	USA	Industrials	637%	25 Novo Nordisk A/S	Denmark	Health Care	0.28
26 United Utilities Group	UK	Utilities	630%	26 Infineon Technologies AG	Germany	Info Tech	0.27
27 Sociedad Quimica y Minera	Chile	Materials	626%	27 HDFC Ltd	India	Financials	0.27
28 Delta Electronics Inc	Taiwan	Info Tech	596%	28 Hennes & Mauritz AB	Sweden	Cons. Discr.	0.26
29 Telekomunikasi Indonesia	Indonesia	Comm. Services	584%	29 Ecolab Inc	USA	Materials	0.25
30 IDEX Corp	USA	Industrials	580%	30 Dnb ASA	Norway	Financials	0.25
31 Halma PLC	UK	Info Tech	574%	31 Munich Re	Germany	Financials	0.25
32 Trimble Inc	USA	Info Tech	553%	32 Alstom SA	France	Industrials	0.24
33 PTC Inc	USA	Info Tech	516%	33 Verisk Analytics Inc	USA	Industrials	0.24
34 LG Household & Healthcare	S. Korea	Cons. Staples	464%	34 Hoya Corp	Japan	Health Care	0.24
35 Nuance Communications	USA	Info Tech	457%	35 Vestas Wind Systems	Denmark	Industrials	0.24
36 Cosan SA	Brazil	Energy	433%	36 Fresenius SE & Co	Germany	Health Care	0.24
37 Vestas Wind Systems	Denmark	Industrials	432%	37 Telenor ASA	Norway	Comm. Services	0.23
38 Enphase Energy Inc	USA	Info Tech	423%	38 Schneider Electric SE	France	Industrials	0.21
39 Rational AG	Germany	Industrials	421%	39 Veolia Environnement SA	France	Utilities	0.21
40 Techtronic Industries Co	Hong Kong	Industrials	420%	40 Visa Inc	USA	Info Tech	0.20
41 VF Corp	USA	Cons. Discr.	407%	41 Agilent Technologies Inc	USA	Health Care	0.20
42 Dali Foods Group Co Ltd	China	Cons. Staples	405%	42 Thermo Fisher Scientific	USA	Health Care	0.20
43 Petronet LNG Ltd	India	Energy	400%	43 Deere & Co	USA	Industrials	0.20
44 Telefonica Brasil SA	Brazil	Comm. Services	398%	44 Biomerieux SA	France	Health Care	0.19
45 ON Semiconductor Corp	USA	Info Tech	391%	45 Suez SA	France	Utilities	0.18
46 Sekisui Chemical Co Ltd	Japan	Cons. Discr.	385%	46 Naspers Ltd	South Africa	Cons. Discr.	0.18
47 Verbund AG	Austria	Utilities	378%	47 Svenska Handelsbanken	Sweden	Financials	0.18
48 SalMar ASA	Norway	Cons. Staples	365%	48 NetEase Inc	China	Comm. Services	0.18
49 VMware Inc	USA	Info Tech	360%	49 NCSOFT Corp	S. Korea	Comm. Services	0.18
50 Fastighets AB Balder	Sweden	Real Estate	360%	50 GN Store Nord A/S	Denmark	Health Care	0.18

Grey shading indicates new name from previous 50 lists; all securities screened for mkt cap >\$5bn, fund factor <35%, widely owned counter>30

Source: Morningstar, Thomson Reuters, Goldman Sachs Global Investment Research

Exhibit 27: Some underowned stocks that scored well across pillars of the GS SUSTAIN framework

'Underowned' ESG stocks

	Company	Domicile	SUSTAIN sector	SUSTAIN ESG indicators					ESG fund relative underweight
				Global G rank	E&S rank	E&S mom'	E&S product impact rank	Controversy rank	
Americas	Sun Life Financial Inc	Canada	Insurance	81%	73%	9%	81%	100%	-59%
	Kimco Realty Corp	United States	Real Estate	89%	96%	65%	68%	100%	-55%
	Shopify Inc	Canada	Internet	89%	94%	99%	51%	64%	-51%
	T. Rowe Price Group Inc	United States	Asset Management	97%	95%	51%	77%	100%	-41%
	Resmed Inc	United States	Med Tech	89%	86%	7%	100%	64%	-39%
	Aptargroup Inc	United States	Paper & Packaging	81%	100%	94%	81%	100%	-34%
	Lear Corp	United States	Auto Parts	94%	90%	70%	79%	100%	-32%
	WSP Global Inc	Canada	Engineering & Construction	100%	95%	98%	93%	100%	-21%
	Interconnection Electric SA	Colombia	Utilities - Electric	69%	90%	22%	31%	100%	-20%
	ManpowerGroup Inc	United States	Professional Services	94%	82%	3%	55%	100%	-13%
	Caterpillar Inc	United States	Capital Goods	69%	81%	29%	86%	81%	-5%
ETSY Inc	United States	E-Commerce	81%	100%	25%	56%	100%	0%	
EMEA	DWS Group GmbH & Co	Germany	Asset Management	69%	92%	84%	77%	100%	-93%
	Unilever NV	Netherlands	Household & Personal Care	81%	71%	47%	100%	64%	-65%
	Electrocomponents PLC	United Kingdom	Distributors	89%	76%	96%	100%	100%	-58%
	Schroders PLC	United Kingdom	Asset Management	69%	76%	17%	100%	81%	-54%
	CNH Industrial NV	United Kingdom	Capital Goods	69%	81%	9%	86%	60%	-47%
	Zalando SE	Germany	E-Commerce	89%	100%	98%	56%	100%	-42%
	WM Morrison Supermarkets	United Kingdom	Retail - Staples	89%	73%	93%	85%	64%	-41%
	Renishaw PLC	United Kingdom	Tech Hardware	81%	83%	100%	81%	100%	-40%
	BE Semiconductor Industries	Netherlands	Semiconductors	69%	85%	88%	79%	100%	-14%
	National Grid PLC	United Kingdom	Utilities - Multi	69%	86%	65%	86%	60%	-6%
	Cofinimmo SA	Belgium	Real Estate	89%	93%	12%	68%	100%	-4%
Accenture PLC	Ireland	IT Services	89%	98%	49%	45%	100%	-1%	
APAC	Posco Chemical Co Ltd	South Korea	Construction Materials	69%	96%	93%	43%	100%	-89%
	Sungrow Power Supply Co	China	Capital Goods	69%	100%	2%	100%	100%	-89%
	Xero Ltd	New Zealand	Software	81%	100%	97%	54%	100%	-68%
	Seiko Epson Corp	Japan	Tech Hardware	56%	73%	5%	96%	100%	-58%
	Meiji Holdings Co Ltd	Japan	Food & Beverage	69%	90%	69%	92%	100%	-54%
	Chang Hwa Commercial Bank L	Taiwan	Banks	42%	96%	22%	27%	100%	-53%
	CIMB Group Holdings Bhd	Malaysia	Banks	42%	97%	99%	78%	81%	-44%
	Aisin Seiki Co Ltd	Japan	Auto Parts	81%	72%	21%	79%	64%	-42%
	Ascendas REIT	Singapore	Real Estate	56%	82%	12%	68%	100%	-28%
	Shanghai Electric Group Co	China	Capital Goods	42%	98%	84%	86%	100%	-19%
	Nippon Express Co Ltd	Japan	Logistics & Shipping	81%	97%	74%	100%	100%	-16%
Transurban Group	Australia	Transport Infrastructure	69%	100%	80%	50%	100%	-2%	

Source: Morningstar, Thomson Reuters, Goldman Sachs Global Investment Research

2021: ESG by sector - growth and transition

The rise of ESG investing and proliferation of climate policies are creating growth opportunities for certain sectors, while others are presented with challenges as the world transitions to low-carbon. Key highlights across various sectors based on views from our sector analysts are shown below.

ESG as a growth theme:

- **Autos:** Our analysts expect the ratio of ICE vehicles to fall to 18% in 2035, from 86% in 2020. As EV sales increase, automotive battery sales will also likely see substantial growth.

Awareness of life cycle emissions will affect the upstream part of the value chain. Japanese **steelmakers** are looking to transition to cleaner Electric Arc Furnaces, from Blast Furnaces.

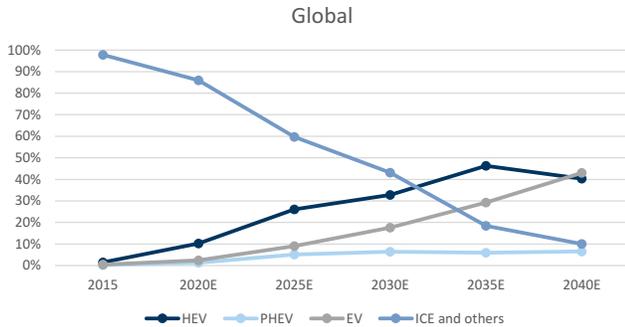
- **Utilities:** Capital markets will gradually shift towards an approach that values renewable activities to perpetuity, according to the GS utilities team, on top of the falling cost of equity in renewables. In China, upstream manufacturers look best positioned to benefit from the growth in global installations and improving economics of renewables.
- **Real Estate:** Deep structural trends are likely to require modern real estate stock. COVID and sustainability considerations should help drive redevelopment opportunities in the medium-term.

ESG as a transition theme:

- **Mining:** Decarbonize. The Big 4 Australian miners could spend US\$15bn on Scope 1&2 emission reduction projects to achieve targets.
- **Aviation:** COVID-19 may accelerate decarbonization as bailouts make governments closer partners with airlines.
- **Oil:** Big Oils will continue to become broader and cleaner energy providers, according to the team, and prepare to be better aligned with the EU Taxonomy.
- **Diesel:** Renewable diesel will be able to take advantage of favorable tax credits/incentives such as the Low Carbon Fuel Standards in California.
- **Tech Hardware:** Corporate climate targets have ripple effects. Apple has announced Scope 1-3 net zero targets by 2030, which will require its global suppliers to switch to renewable energy, impacting margins and capex. We could see similar initiatives from other OEMs, amplifying the pressure on the supply chain.

Exhibit 28: In Autos, the team expects EV/HEV to rise as the ICE vehicle ceases to prevail in car sales...

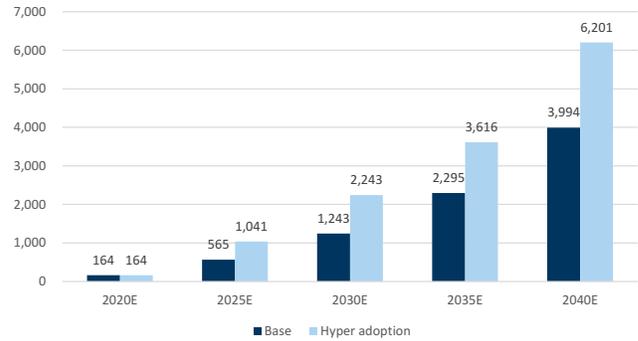
Powertrain mix



Source: IHS Global Insight, Goldman Sachs Global Investment Research

Exhibit 29: There should be substantial demand growth (~17% CAGR in base case & ~19% in hyper by 2040) for automotive batteries

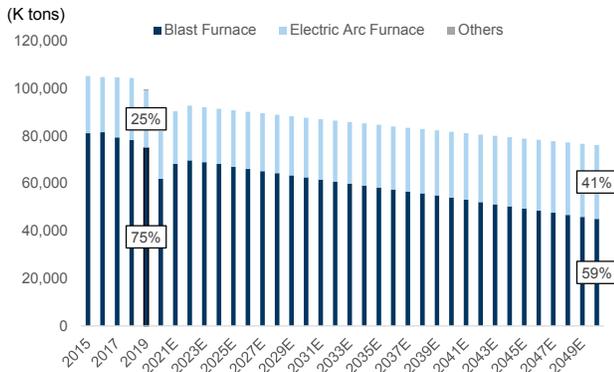
The Autos team's battery demand estimates (base/hyper-adoption scenarios, GWh)



Source: Goldman Sachs Global Investment Research

Exhibit 30: In Japan Steel, the team expects the Electric Arc Furnace ratio to rise to 40% by 2050...

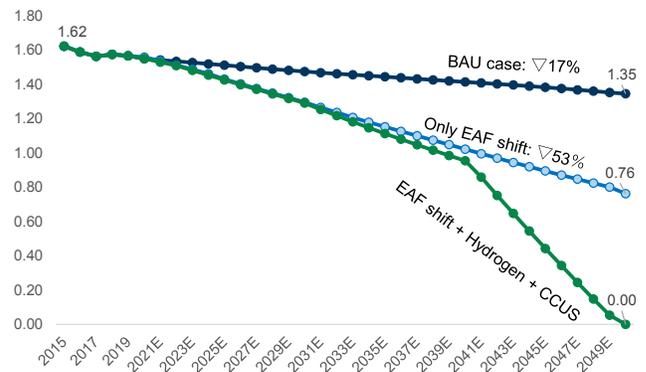
Outlook for Blast furnace/Electric Arc Furnace ratios in Japan



Source: World Steel Association, Goldman Sachs Global Investment Research

Exhibit 31: ... which should drive large CO2 reductions in the Steel industry

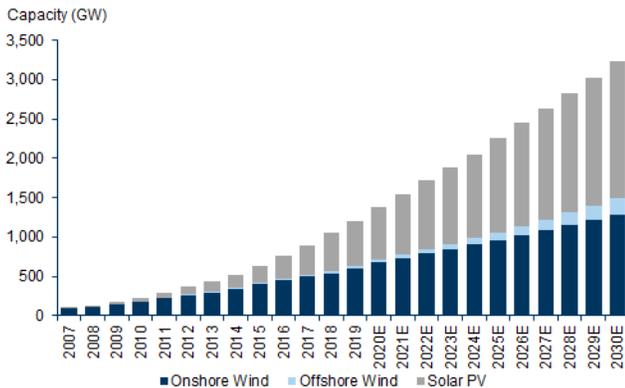
Outlook for CO2 emissions per tonne



Source: The Japan Iron and Steel Federation, Goldman Sachs Global Investment Research

Exhibit 32: In Utilities, the team forecasts global emissions policies could drive a 2.3x increase in global renewables capacity by 2030E vs. 2020E (~8% CAGR)...

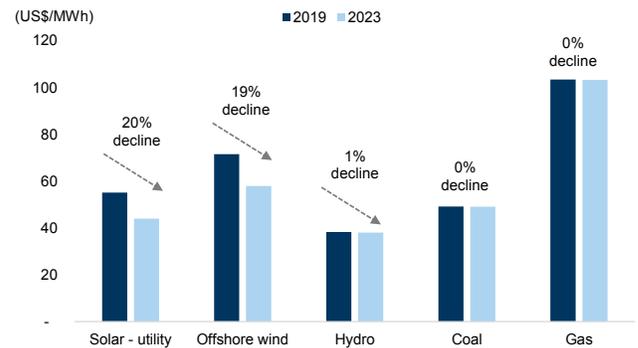
GSe installed renewable capacity by source



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 33: ... our Asia Pacific energy team think more installations will be deflationary: By 2023E, solar will have a lower LCOE than coal in China

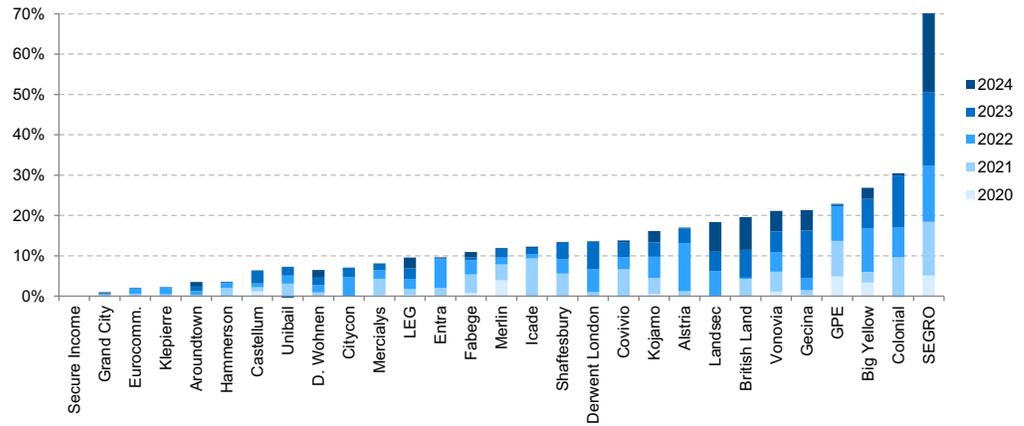
Forecast of LCOE by fuel type in China (2019-2023)



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 34: In Real Estate, the team expect COVID and sustainability considerations to help drive green redevelopment in Europe

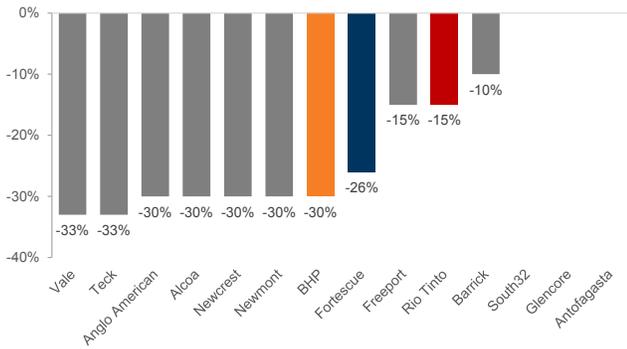
2020-24E passing rent from completing developments as a proportion of last reported passing rent (%)



Passing rent: rent payable at a particular point in time.

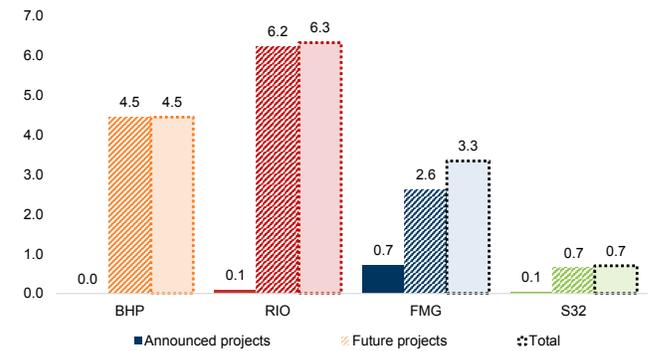
Source: Company data, Goldman Sachs Global Investment Research

Exhibit 35: In Mining, most global players are targeting a 30% reduction in Scope 1&2 emissions by 2030...



Source: Company data, Goldman Sachs Global Investment Research

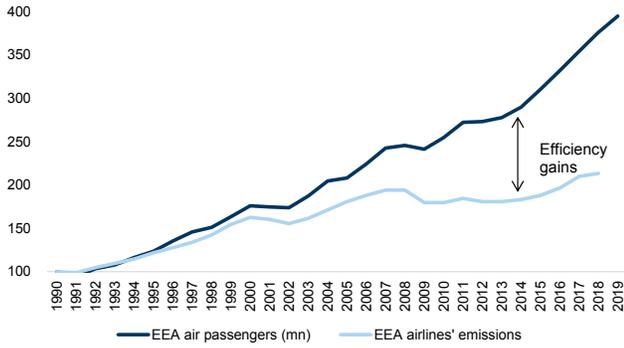
Exhibit 36: ... which could lead to significant green capex in mining
Capex (US\$m) on announced and possible future projects over the next 10-30yrs



Source: Goldman Sachs Global Investment Research

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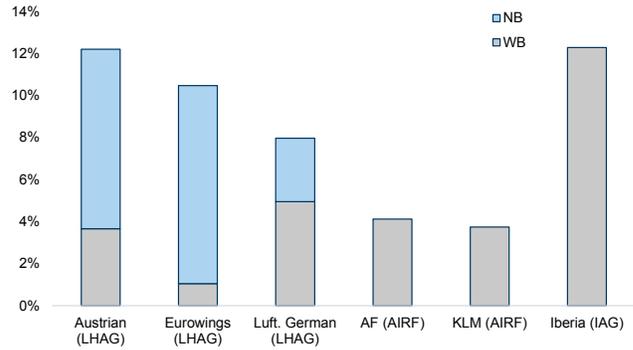
Exhibit 37: In Aviation, efficiency gains have historically offset about half of the increase in emissions from volume growth...



Source: EEA

Exhibit 38: ... and COVID has been a catalyst to retire inefficient aircraft

Early or accelerated fleet retirements announced ytd

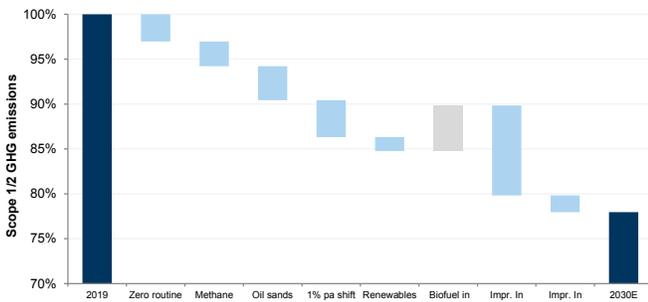


NB: Narrowbody, WB: Widebody

Source: Company data, Goldman Sachs Global Investment Research

Exhibit 39: In Big Oils, Scope 1&2 GHG emissions intensity could fall by c.23% by 2030E (from 2019 base)

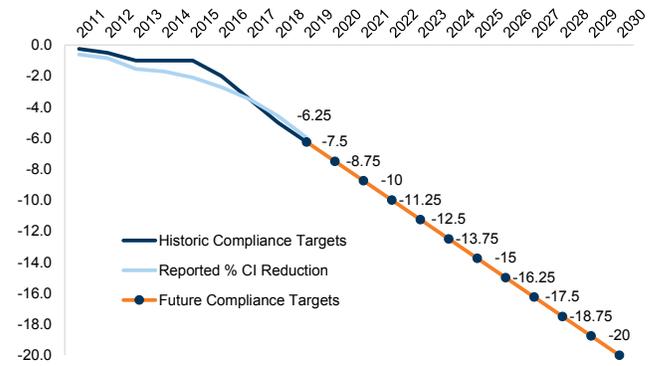
Big Oils scope 1&2 GHG emissions intensity 2019-30E bridge



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 40: Renewable diesel could benefit from the LCFS compliance targets of carbon intensity reduction...

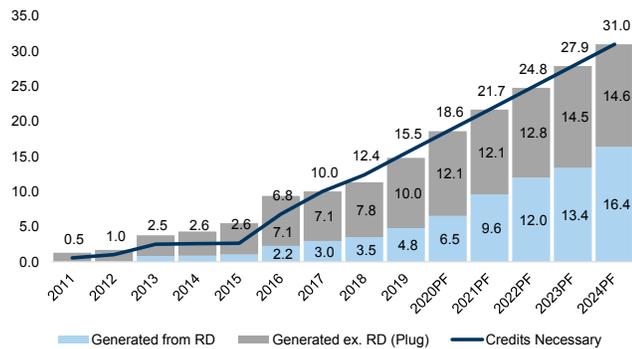
California LCFS - % reduction in carbon intensity



Source: California Air Resources Board, Goldman Sachs Global Investment Research

Exhibit 41: ...as incremental renewable diesel capacity coming online could generate more LCFS credits in 2024 relative to 2019

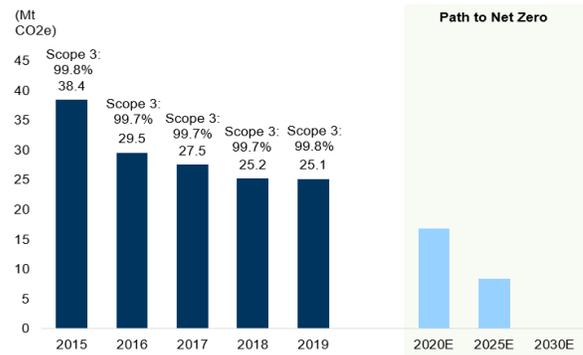
LCFS credit requirement (estimated) and credits generated from renewable diesel (RD) and non-RD sources, in MMT



Source: California Air Resources Board, Goldman Sachs Global Investment Research

Exhibit 42: In Tech Hardware, climate targets are likely to have ripple effects... Apple's net zero targets mean suppliers will have to switch to renewables by 2030

Apple's Scope 1-3 emissions and path to net zero carbon



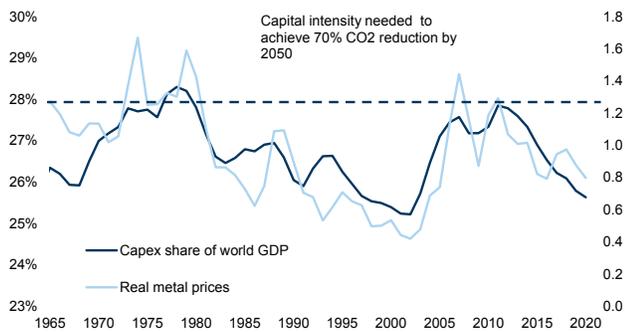
Source: Company data, Goldman Sachs Global Investment Research

2021: ESG opportunities in commodities

Below are charts/views from our Commodities and equity Automotive, Metals & Mining research teams, as presented in these reports: [REViing up a structural bull market](#), [What's Next III: A deep dive into Lithium, Nickel and Cobalt](#), [Initiating coverage on North American base metal producers](#).

Exhibit 43: Environmental policies could drive a capex boom on par with the 2000s

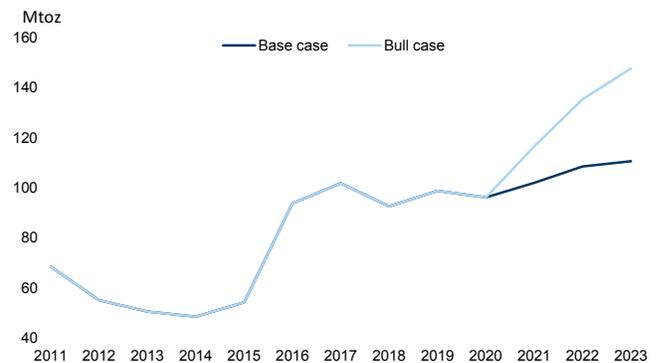
Decarbonisation could mean potentially large infrastructure spending programs in policy, boosting global capital formation to 28.1%



Source: Goldman Sachs Global Investment Research, Maddison Project

Exhibit 44: Silver faces increased upside to industrial demand from renewable adoption

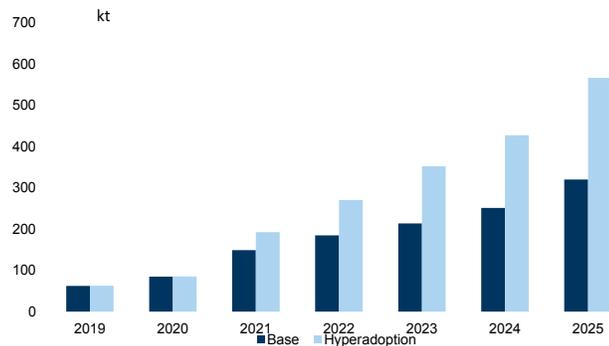
Silver solar demand projections, Mtoz



Source: Goldman Sachs Global Investment Research

Exhibit 45: Our equity Automotive sector team sees nickel demand from EVs potentially double that of their base case

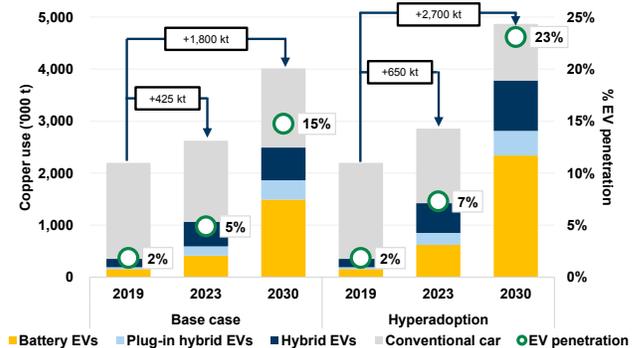
Nickel demand from batteries under base case and hyperadoption sales scenarios, kt



Source: Goldman Sachs Global Investment Research

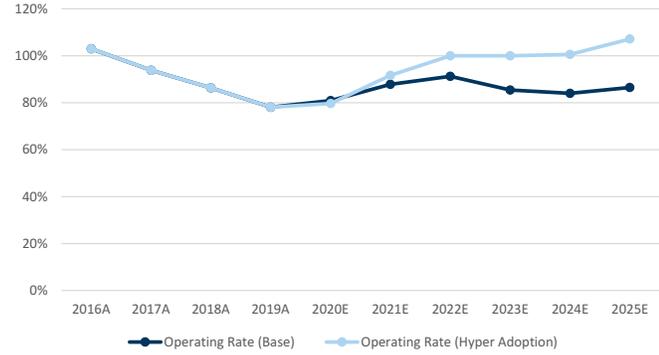
Exhibit 46: EV adoption to drive substantial copper demand by 2023, more in a hyperadoption scenario

Copper use in powertrains (kt)



Source: Goldman Sachs Global Investment Research

Exhibit 47: Lithium supply/demand balance is tight if we assume an EV hyper-adoption scenario
Lithium supply/demand balance (operating rate)



Source: Company data, Goldman Sachs Global Investment Research

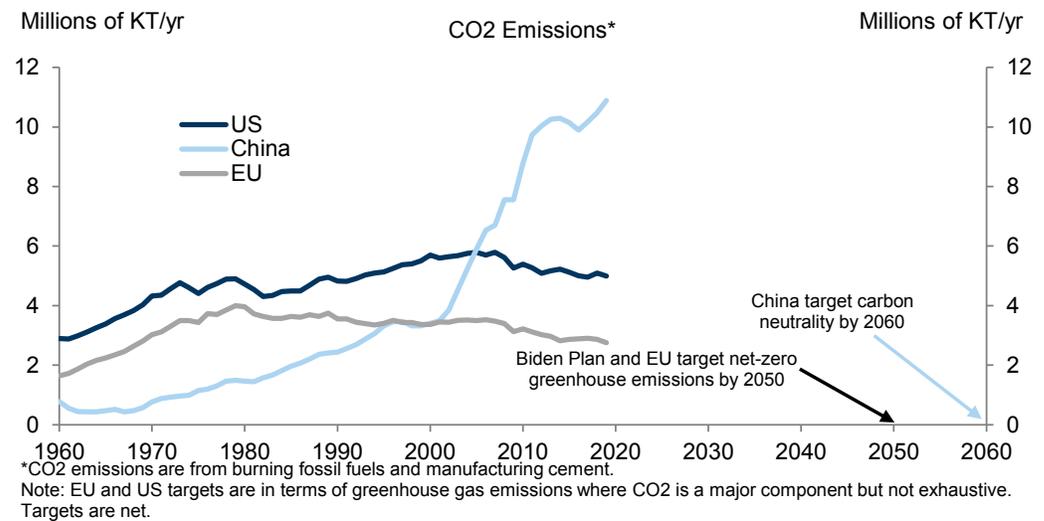
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2021: New initiatives to move off the launchpad, green capex to tick up

Green commitments made by national governments in 2020 will be followed through in 2021. **Climate** will remain a focus, as will implementation of new policies such as US president-elect Biden’s plan to promote EV penetration and the US\$2tn environmental measures spend, China’s Emissions Trading scheme, and new rules for listed companies and investors. We also expect attention on **biodiversity** will grow in 2021 driven by the upcoming COP15 on biodiversity and the roll out of more details on the EU Taxonomy objective to protect Ecosystems by the end of 2021.

- The 26th UN Climate Change Conference is scheduled for November 2021. Countries are expected to commit to more ambitious targets since COP21.
- The 15th meeting of the Conference of the Parties (COP15) on the Convention on Biological Diversity (CBD) will be held in May 2021. This will set an agenda for countries to coordinate their efforts on biodiversity.

Exhibit 48: The EU, China and the Biden administration have recently announced ambitious emissions targets



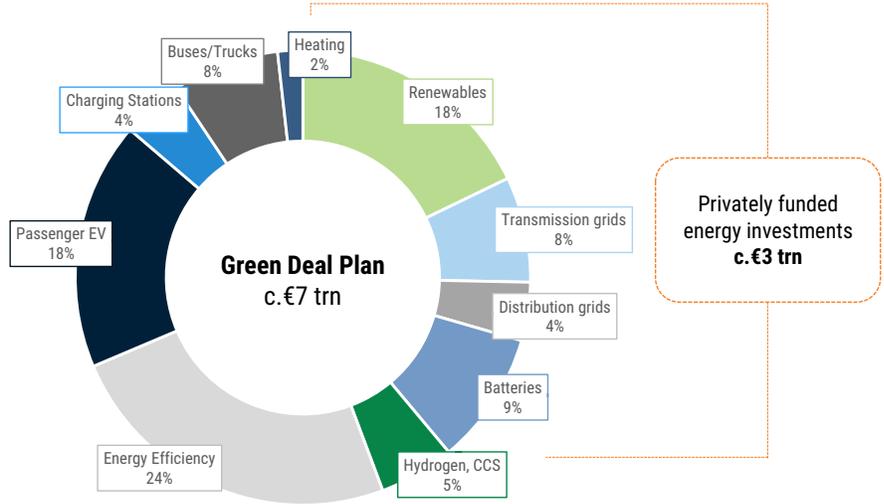
Data from the World Bank is extended forward using data from the European Commission.

Source: World Bank, European Commission, Haver Analytics, Goldman Sachs Global Investment Research

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Exhibit 49: Based on the EU Green Deal, privately funded energy investments could amount to c.€3 trillion and would largely be carried out by utilities

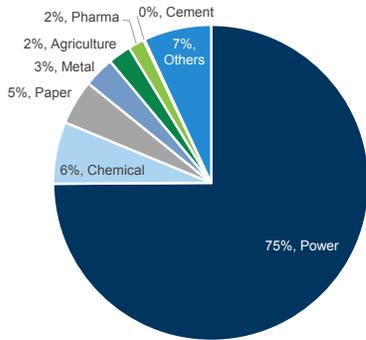
Estimated breakdown of capex (%) implied by the EC Green Deal



Source: Goldman Sachs Global Investment Research

Exhibit 50: China’s ETS in its first phase will cover power, later moving to other sectors...

Count of asset names with eligible coal-fired units included in MEE’s November 20th draft of companies to be included in the first phase of China’s ETS

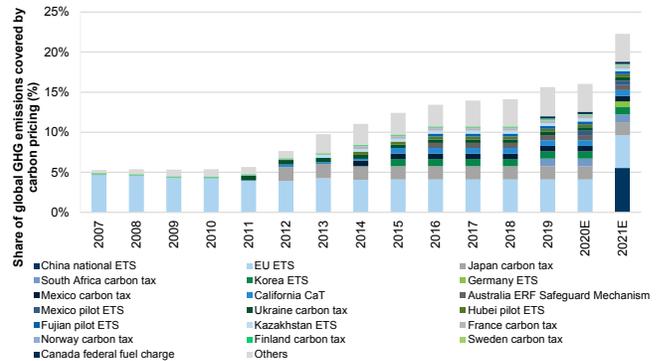


Keywords used as proxies for sectors: Power (“electricity, energy, coal, power, cogeneration”), Chemical (“chemical, chemical fiber”), Paper (“paper”), Metal (“aluminium, metal, ferrous, copper, steel, smelting”), Agriculture (“corn, agriculture, sugar, winery, yeast, fertilizer, starch”), Pharma (“biotech, anti-biotics, medical/pharma”). We understand this list is not exhaustive.

Source: Ministry of Ecology and Environment, Goldman Sachs Global Investment Research

Exhibit 51: ...and this ETS will cover 5% of global GHG emissions in its initial phase, making it the world’s largest carbon market - even before other sectors are added

Carbon pricing initiatives’ share of global GHG emissions covered (%)

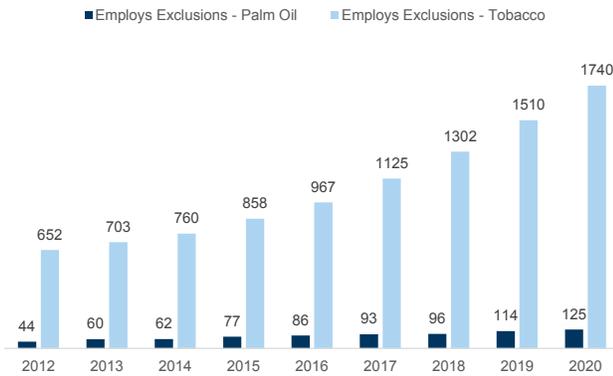


Source: World Bank Group, Goldman Sachs Global Investment Research

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Exhibit 52: Biodiversity related divestments were relatively low in 2020 compared to Tobacco, but it could be a growing theme in 2021...

Number of funds employing exclusions on palm oil remains small relative to tobacco



Source: Morningstar, Goldman Sachs Global Investment Research

Exhibit 53: ... after the Convention on Biological Diversity (CBD COP15) is held in May 2021

The Aichi Biodiversity Targets 2020 adopted by CBD in 2010

Strategic Goal A	Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Strategic Goal B	Reduce the direct pressures on biodiversity and promote sustainable use
Strategic Goal C	To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Strategic Goal D	Enhance the benefits to all from biodiversity and ecosystem services
Strategic Goal E	Enhance implementation through participatory planning, knowledge management and capacity building

Source: UN Convention on Biological Diversity

Outlook 2021: Global ESG Regulations

Global regulations will continue to move the ESG agenda forward.

- **The EU taxonomy** will impact more sectors and expand toward other environmental objectives. Investors will be required to report the first set of Taxonomy disclosures in December 2021, followed by alignment disclosures from corporates in 2022 (for FY2021).
- **Japan's revised stewardship code** will require investors to include ESG considerations.
- **Hong Kong Exchange** listed companies will now have to provide more ESG data in a timely manner.

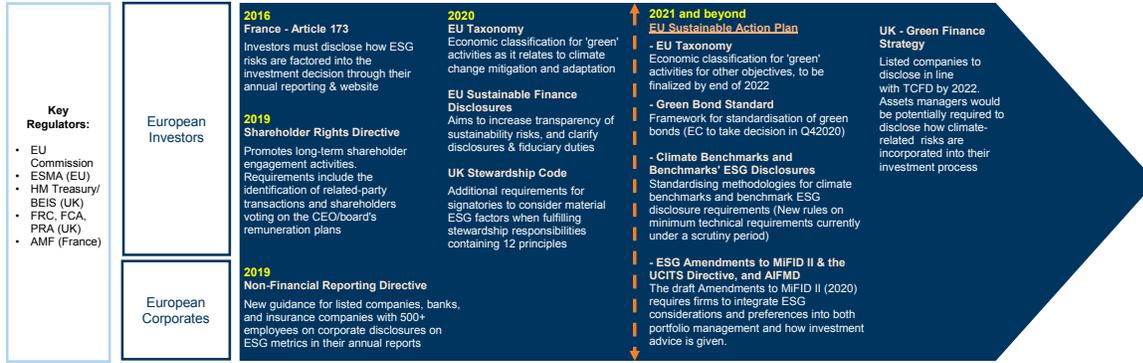
Asset owners should further improve ESG disclosure. Investor engagement continues to expand its influence on the back of a deceleration in divestment commitments.

- The UN PRI is convening asset owners committing to net zero by 2050. The UN has outlined protocols to set intermediate targets for 2025.
- In November 2020, Mark Carney, the UN's Special Envoy on Climate Action and Finance, and the Portfolio Alignment Team published a detailed report on measuring portfolio alignment with Paris Targets ahead of COP26.
- In August 2020, the Institutional Investors Group on Climate Change (IIGCC) backed by a group of 70 investors (US\$16tn AUM) released a Net Zero Investment Framework which aims to address how the investors can contribute to net zero emissions by 2050.

Better standardization of ESG data is an area where we expect to see some momentum.

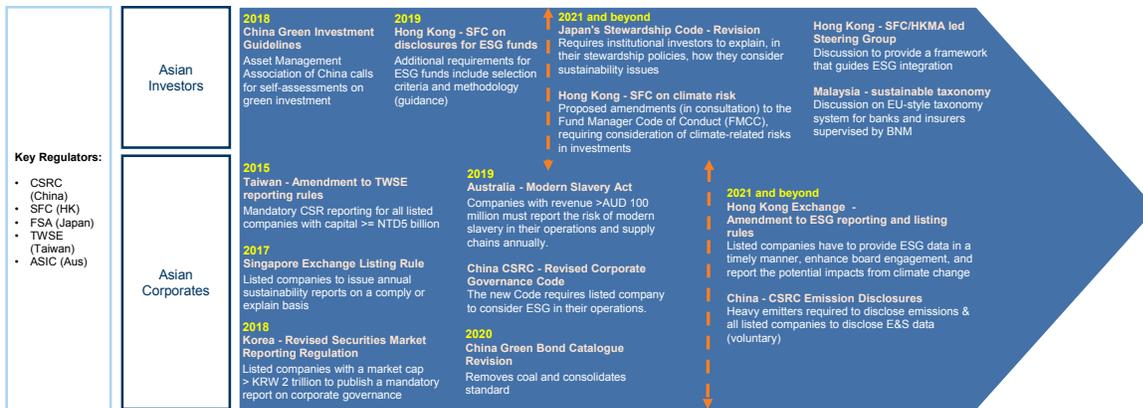
- **IFRS** is assessing if it should contribute to the development of ESG disclosure standards.
- The **International Integrated Reporting Council (IIRC)** and the Sustainability Accounting Standards Board (SASB) announced a merger to simplify the reporting landscape.
- **The Big Four accounting firms** published a White Paper in September under the International Business Council which provides guidelines on metrics and disclosures aimed at harmonizing ESG disclosure.

Exhibit 54: Europe: EU Sustainable Action Plan continues to unfold... Regulations focus on investors than corporates



Source: Data compiled by Goldman Sachs Global Investment Research

Exhibit 55: Asia: Different regional initiatives pick up, with more focus on corporates than investors...



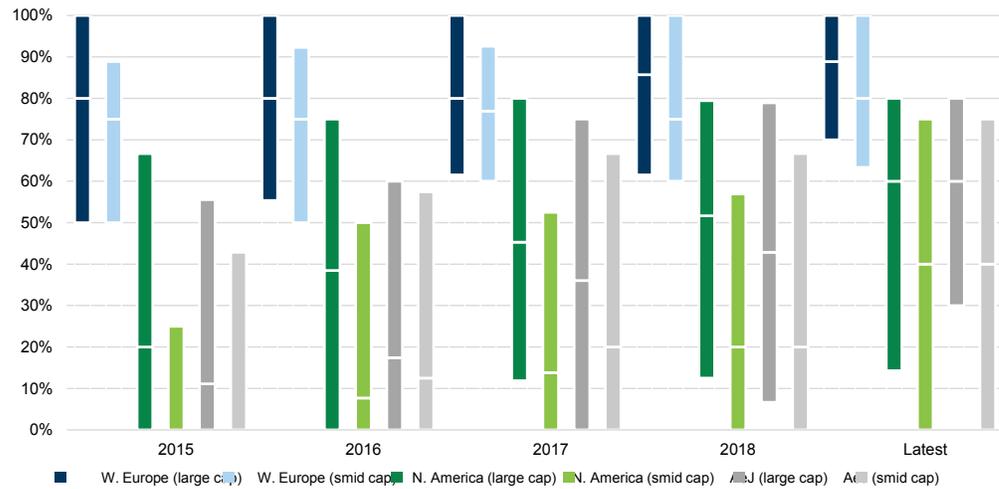
Source: Data compiled by Goldman Sachs Global Investment Research

Exhibit 56: US: Awaiting an executive branch more supportive of a clean transition. Relatively balanced regulatory focus for both investors and corporates



Source: Data compiled by Goldman Sachs Global Investment Research

Exhibit 57: Asia has narrowed the ESG disclosure gap, but lack of standardization remains a challenge
 Regional disclosure rates (75th, 50th & 25th percentiles) on material numeric E&S metrics in GS SUSTAIN ESG Framework (MSCI ACWI)

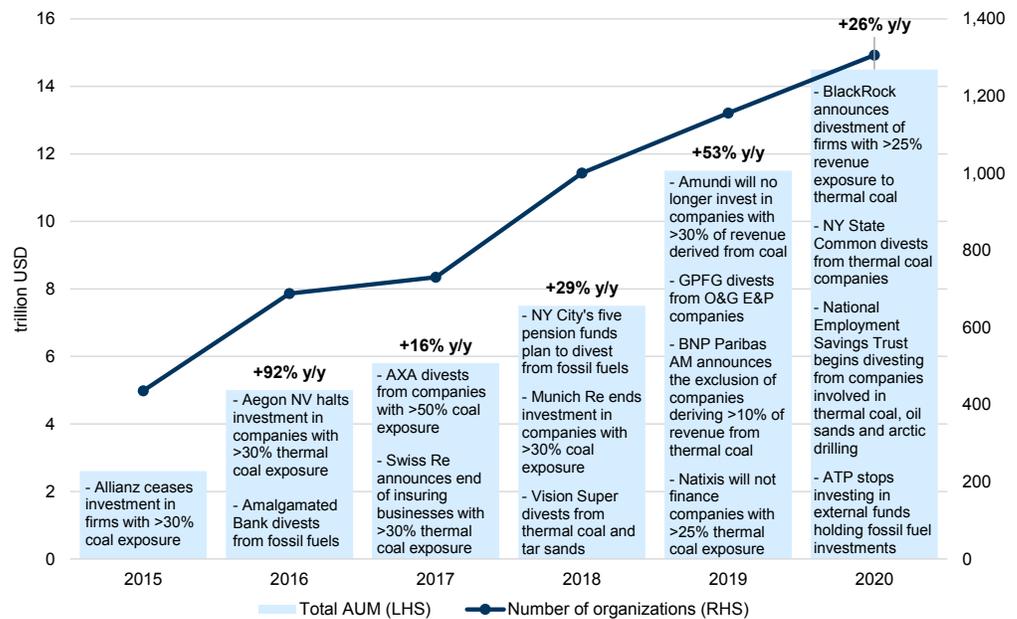


Material numeric metrics vary by sector, market cap thresholds are applied on an annual rolling basis to current MSCI ACWI constituents; large cap (>\$10bn) and smid cap (\$1-10bn). Disclosure rates do not include policies, targets or other metrics.

Source: Bloomberg, Reuters, Goldman Sachs Global Investment Research

Exhibit 58: Divestment commitments march forward but decelerated in 2020...

Total AUM committed to fossil fuel divestment (LHS) and number of organizations making such commitments (RHS)



bar graph labels show AUM y/y growth rates

Source: Goldman Sachs Global Investment Research, 350.org

Exhibit 59: ...as investors expand influence through engagement, and ambitious targets under the Net Zero Asset Owner Alliance

Proposed 2025 targets under UN-Convened Net-Zero Asset Owner Alliance

Sub-portfolio (later Portfolio) Emission Targets	<ul style="list-style-type: none"> ▪ -16 to -29% CO2e reduction by 2025 (per IPCC 1.5°C scenarios) on Public Equity and Corporate Debt, with the same recommended for Real Estate and/or CRREM national pathways used ▪ Covers Portfolio Emissions Scope 1 & 2, tracking of Scope 3 encouraged ▪ Absolute or intensity-based reduction against 2019 base year recommended ▪ Phase Two: Sovereign debt to be included
Sector Targets	<ul style="list-style-type: none"> ▪ Intensity-based reductions on AOA priority Sectors (O&G, Utilities, Steel, and Transport – Aviation, Shipping, Heavy and Light Duty Road) ▪ Scope 3 to be included wherever possible ▪ Sector specific intensity KPIs recommended ▪ Sectoral Decarbonization Pathways top-down and bottom-up necessary to set targets
Engagement Targets	<ul style="list-style-type: none"> ▪ Engagement with Top 20 (non-aligned) emitters or those responsible for 65% of emission in portfolio (either Direct, Collective, or via Asset Manager) ▪ Contribute to 1) Sector - Engagement with target sectors 2) Asset Manager - Each member to participate in at least one engagement with the pre-identified (largest) 4 Asset Managers 3) AOA position papers ▪ AOs to set action targets on Policy Maker engagement
Financing Transition Targets	<ul style="list-style-type: none"> ▪ Report on progress on climate-positive investments ▪ Focus on Renewable Energy in Emerging Markets, Green Buildings, Sustainable Forests, and Hydrogen, among others ▪ Contribute to activities enlarging the low carbon investment universe and building solutions

UN-Convened Net-Zero Asset Owner Alliance is an international group of 33 institutional investors committed to transition their investment portfolios to net-zero GHG emissions by 2050, representing \$5.1 trillion AUM.

Source: UNPRI, UNEP Finance Initiative

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Growth is based on a stock's forward-looking sales growth, EBITDA growth and EPS growth (for financial stocks, only EPS and sales growth), with a higher percentile indicating a higher growth company. **Financial Returns** is based on a stock's forward-looking ROE, ROCE and CROCI (for financial stocks, only ROE), with a higher percentile indicating a company with higher financial returns. **Multiple** is based on a stock's forward-looking P/E, P/B, price/dividend (P/D), EV/EBITDA, EV/FCF and EV/Debt Adjusted Cash Flow (DACF) (for financial stocks, only P/E, P/B and P/D), with a higher percentile indicating a stock trading at a higher multiple. The **Integrated** percentile is calculated as the average of the Growth percentile, Financial Returns percentile and (100% - Multiple percentile).

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18 Nov 2020

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19 May 2020

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05 Mar 2020

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01 Dec 2020

ESG meets Banks: Links to asset quality, market share and returns on capital
01 Dec 2020

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19 Nov 2020

ESG Meets Fundamentals: A sustainability assessment of select global Utilities players
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05 Feb 2020

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22 Oct 2020

The carbon tax debate, US election promises, hydrogen rising
08 Oct 2020

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