Climate Change and the EU Regulatory Response:

SFDR Art. 9 “Green Superstar” & Absolutely Sustainable ‘Paris-Aligned’ Investing

Andreas G. F. Hoepner

Notes: The underlying EU TEG work is based on the excellent and tireless efforts of Claudia Bolli, Manuel Coeslier, Theodor Cojoianu, Delphine Dirat, Steffen Hoerter, Nadia Humphreys, Patrik Karlsson, Sebastien Lieblich, Sara Lovisolo, Astrid Matthey, Veronique Menou, Jean-Christophe Nicaise Chateau, Elena Philipova, Antoine Picot, Cesare Posti, Chantal Sourlas, Helena Vines Fiestas and Jean-Yves Wilmotte. Andreas also gratefully acknowledges scientific support on the EU TEG / PSF work from Ifegenia Paliabelos, Saphira Rekker, Joeri Rogelj, Fabiola Schneider, Theresa Spandel and Gabija Zdanceviciute.

Preamble 1:

Is ESG a scam, occasionally?

Are current real world outcomes sustainable?

Sell-Side ESG: Tesla out? Exxon top???

Dilbert’s View on ESG …

Real Impact Outcome: Male Execs 99% vs. Female Execs 1%

washingtonpost.com/business/economy/nearly-75-percent-of-nursing-homes-at-risk-of-closures/2022/06/06/cf03cc12-e59d-11ec-b037-e344f38e0a4f_story.html

ections

The Washington Post
Democracy Dies in Darkness

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Male execs control 99% of share values

Women account for about a quarter of the top executives at S&P 500 companies and they only control about 1 percent of the value of shares held among their fellow corporate leaders, new research shows.

The disparity means male executives held about $770 billion worth of shares in S&P 500 companies in 2020, compared with about $9 billion for female executives, said Andreas Hoepner, a professor of operational risk, banking and finance at the Smurfit Graduate School of Business at the University of Dublin.

He said the study, conducted with Swedish gender data company ExecuShe, found the ratio was skewed even after removing company founders and outliers like Tesla chief executive Elon Musk.

As more women get promoted to c-suite jobs, a larger share of their overall compensation comes from equity or stock options, and the disparity with male peers grows. In 2020, women in the top ranks of S&P 500 leadership earned only 75 percent of the compensation of male executives, the widest gap in nine years, mostly because of the imbalance in stock ownership, according to analysts at Morningstar. The

1 World Bank warns global economy may suffer 1970s-style stagflation

2 The Colorado River is in crisis, and it's getting worse every day

3 Crypto industry scores a big win under long anticipated Senate bill

4 Raytheon will move headquarters to Arlington

5 'We're all afraid': Massive rent increases hit mobile homes

UN: Cut emissions by > 7%, every year!

unfccc.int/news/cut-global-emissions-by-76-percent-every-year-for-next-decade-to-meet-15degc-paris-target-un-report

Home | SB 56 | Process and meetings | Topics | Calendar | Climate action | Documents and decisions | About us

News ··· Cut Global Emissions by 7.6 Percent Every Ye...

Cut Global Emissions by 7.6 Percent Every Year for Next Decade to Meet 1.5°C Paris Target - UN Report

26 NOV, 2019

EXTERNAL PRESS RELEASE

Geneva, 26 November 2019 – On the eve of a year in which nations are due to strengthen their Paris climate pledges, a new UN Environment Programme (UNEP) report warns that unless global greenhouse gas emissions

ESG Ratings vs. Real Impact Outcomes (RIOs)

ESG Ratings:

- Mostly developed in 2000s
- Based predominantly on Inputs (e.g. Policies, Objectives) given data and technology availability at the time
- Weighting various KPIs into one overall rating that does not uniquely identify one outcome (i.e. "Gaming ESG ratings is easy")

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Real Impact Outcomes (RIOs):

- Emerged strongly around 2020 with, in particular, the ~7% number
- Purely Measures Outcomes in commonly known units (e.g. CO2e emissions, Women among Top Execs)
- Avoid Artificial Ratings Scale (ARS)

Preamble 2: Principles for SDG literate Financing

SDG literate Finance = Green Bonds + SDG linked Bonds

Principles for SDG literate Financing

"As asset owners, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that issues relating to the United Nations' Sustainable Development Goals (SDGs) can affect the financial opportunities (e.g., return, upside deviations), financial risks (e.g., systemic risks, downside deviations) and overall financial performance (i.e., return divided by unit of risk) of investment operations which finance economic activities in primary markets.

While such primary market financing may vary across asset classes, issuers, economic activities, regions, and through time, we acknowledge that the real-world impact of an investors materializes particularly in primary markets which directly fund real world activities.

Investors wishing to enhance their real-world impact may adhere to SDG literate financing in primary markets, either through financing purely an activity supportive of the SDGs or by providing general financing which enables the issuer to achieve specific SDG milestone(s). Consequently, we recognise that applying SDG literate Financing Principles may better align our financing with scientific recommendations to achieve the SDGs, the Paris Agreement, and broader objectives of society.

Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

- **Principle 1 – Our Preferences & Expectations:** We will prefer to finance SDG literate issuances wherever possible. Where we provide general financing, we expect

  (i) issuers of securities to make clear commitments to one or more SDGs to be achieved by a specific time stamp.

  (ii) whereby these clear commitments must be incentivized by a coupon step up or equivalent financial penalty in case the issuer fails to achieve them in time.

- **Principle 2 – Our Issuer Engagement:** We will be active financiers and

  (i) discourage issuers to issue bonds which are illiterate with respect to SDGs as they neither relate to an SDG supportive activity nor make a specific SDG commitment.

  (ii) encourage appropriate disclosure on SDG performance information with respect to both issuers themselves and the issuances which we finance.

  (iii) engage directly with Chief Financial Officers to enhance our effectiveness in implementing the Principles for SDG literate Financing.

- **Principle 3 – Our Commitment:** Where market realities do not permit us to finance purely SDG literate securities, we will disclose our percentage of SDG literate financing annually.

- **Principle 4 – Walking the Talk:** We will promote acceptance and implementation of the Principles for SDG literate Financing within primary financing markets through collaboration with other asset owners and scientists through

  (i) participating in joint communication and outreach events

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In signing the Principles, we as financiers publicly commit to adopt and implement them, where consistent with our fiduciary responsibilities. We also commit to collaborate with scientists to evaluate the effectiveness and improve the content of the Principles for SDG literate Financing over time. We encourage other investors to adopt the Principles."

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<u>SDG linked Bonds:</u>

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- Strong growth rates
- Infinitely scalable

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- Infinitely scalable
- Legally enforceable engagement milestones, ideal for PAI Engagements
- Prioritization of KPIs case by case by investors & issuer rather than outside (accounting) bodies

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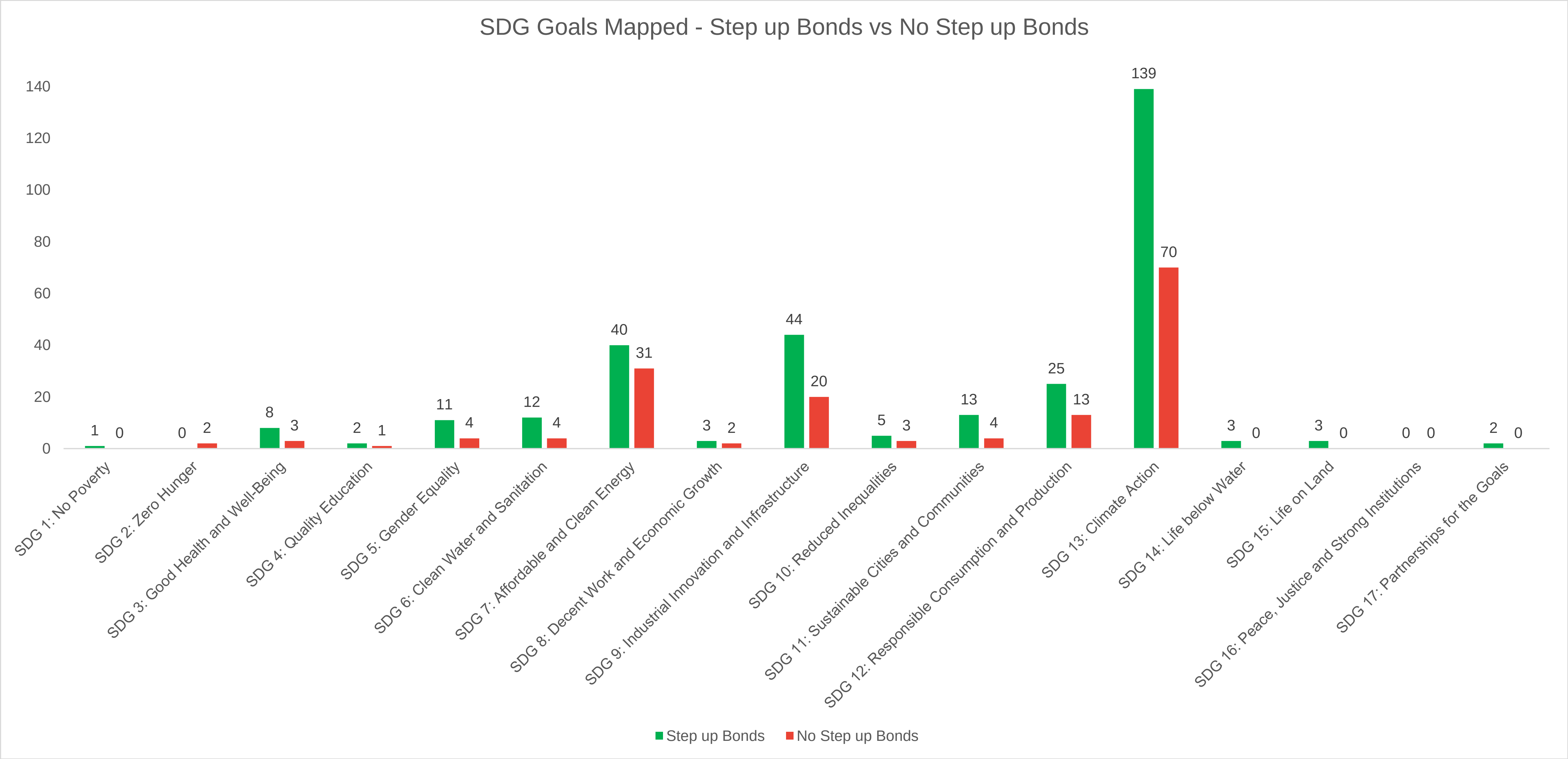
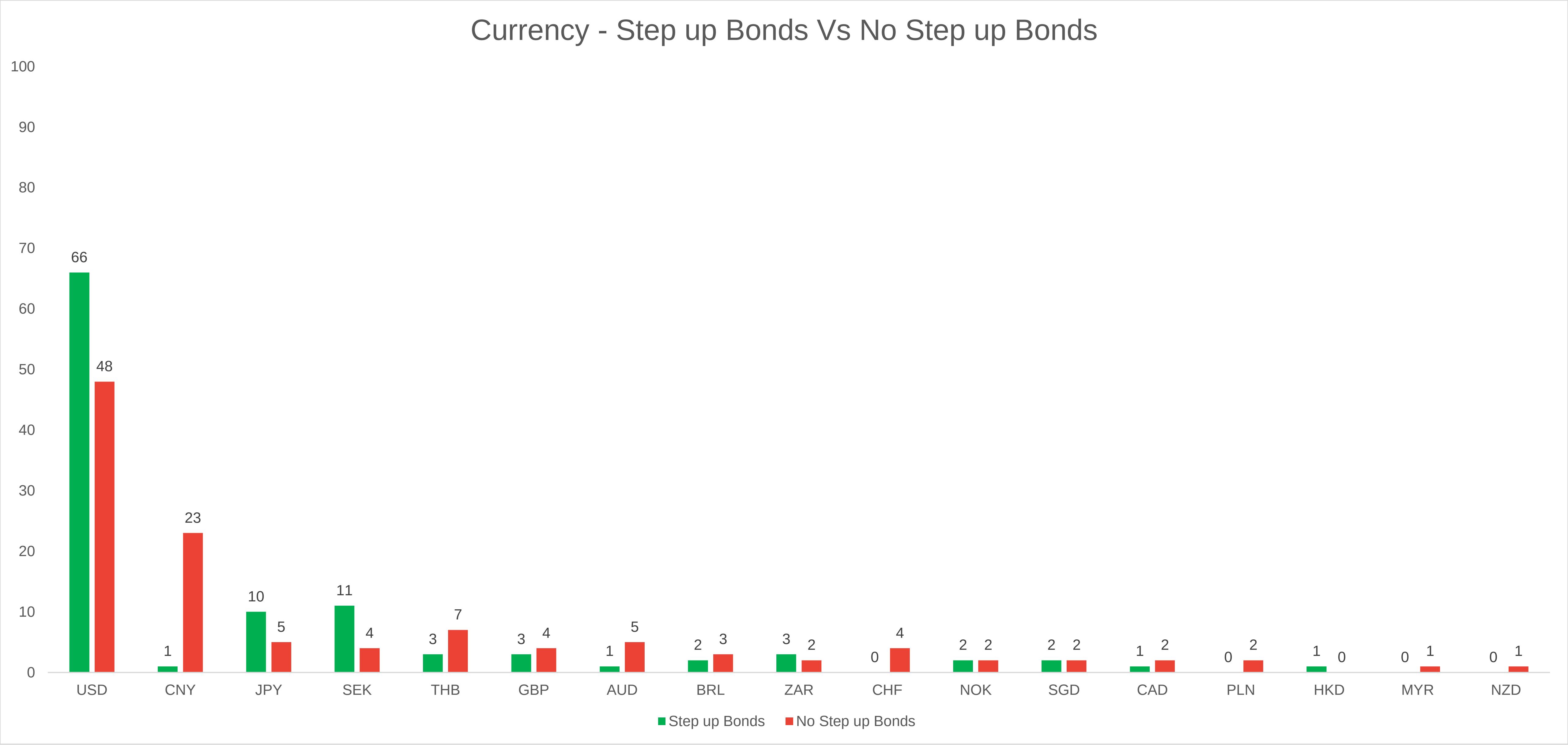
Preamble 3:

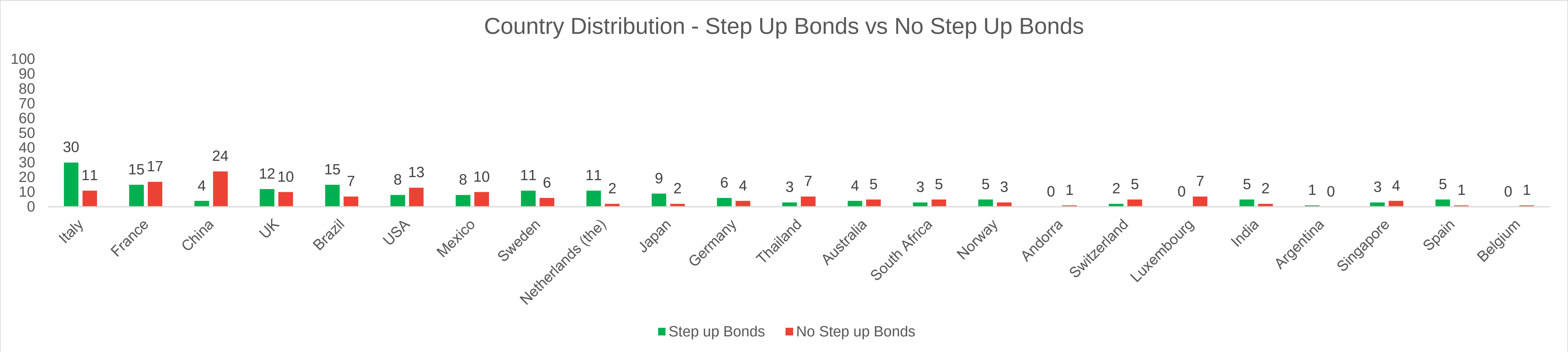
SDG linked Bonds: a future superstar?

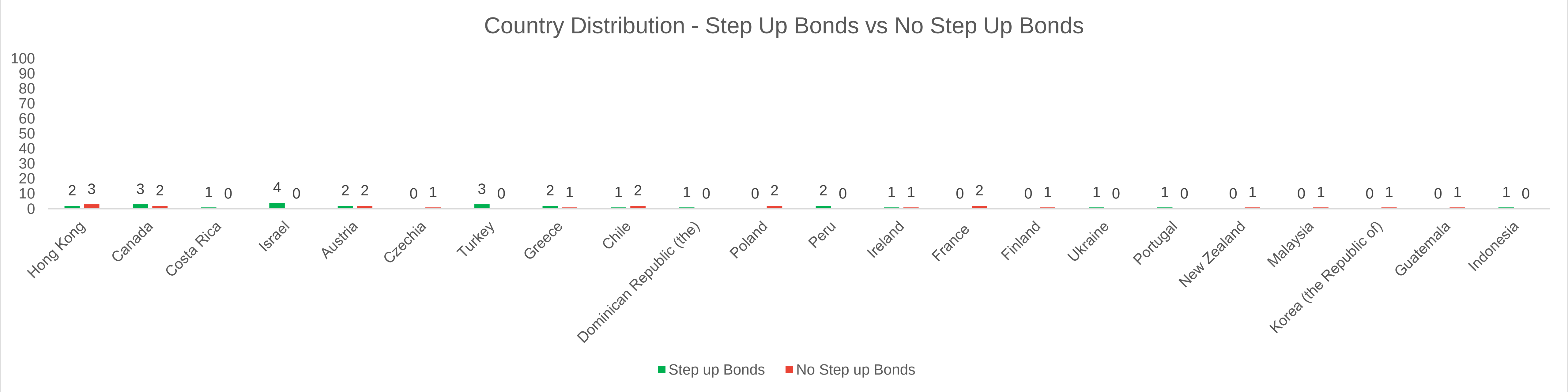


SDG Goals Mapped - Step up Bonds vs No Step up Bonds
140
120
100
80
60
40
20
0
1
0
0
2
8
3
2
1
11
4
12
4
40
31
3
2
44
20
5
3
13
4
25
13
139
70
3
0
3
0
0
0
2
0
SDG 1: No Poverty
SDG 2: Zero Hunger
SDG 3: Good Health and Well-Being
SDG 4: Quality Education
SDG 5: Gender Equality
SDG 6: Clean Water and Sanitation
SDG 7: Affordable and Clean Energy
SDG 8: Decent Work and Economic Growth
SDG 9: Industrial Innovation and Infrastructure
SDG 10: Reduced Inequalities
SDG 11: Sustainable Cities and Communities
SDG 12: Responsible Consumption and Production
SDG 13: Climate Action
SDG 14: Life below Water
SDG 15: Life on Land
SDG 16: Peace, Justice and Strong Institutions
SDG 17: Partnerships for the Goals
Step up Bonds
No Step up Bonds


SDG Targets Mapped - Step Up Bonds vs No Step Up Bonds
150
130
110
90
70
50
30
10
-10
139
70
43
19
33
28
19
10
11
4
9
4
6
2
5
3
6
1
6
1
4
2
4
2
3
2
3
1
2
1
13.2 Integrate climate change measures into national policies, strategies and planning
9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
5.5 Ensure women’s full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, pe
12.2 By 2030, achieve the sustainable management and efficient use of natural resources
7.3 By 2030, double the global rate of improvement in energy efficiency
10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
Step up Bonds
No Step Up Bonds


Currency - Step up Bonds Vs No Step up Bonds
100
90
80
70
60
50
40
30
20
10
0
66
48
1
23
10
5
11
4
3
7
3
4
1
5
2
3
3
2
0
4
2
2
2
2
1
2
0
2
1
0
0
1
0
1
USD
CNY
JPY
SEK
THB
GBP
AUD
BRL
ZAR
CHF
NOK
SGD
CAD
PLN
HKD
MYR
NZD
Step up Bonds
No Step up Bonds


Country Distribution - Step Up Bonds vs No Step Up Bonds
100
90
80
70
60
50
40
30
20
10
0
Italy 30 11
France 15 17
China 4 24
UK 12 10
Brazil 15 7
USA 8 13
Mexico 8 10
Sweden 11 6
Netherlands (the) 11 2
Japan 9 2
Germany 6 4
Thailand 3 7
Australia 4 5
South Africa 3 5
Norway 5 3
Andorra 0 1
Switzerland 2 5
Luxembourg 0 7
India 5 2
Argentina 1 0
Singapore 3 4
Spain 5 1
Belgium 0 1
Step up Bonds
No Step up Bonds


Country Distribution - Step Up Bonds vs No Step Up Bonds
100
90
80
70
60
50
40
30
20
10
0
Hong Kong 2 3
Canada 3 2
Costa Rica 1 0
Israel 4 0
Austria 2 2
Czechia 0 1
Turkey 3 0
Greece 2 1
Chile 1 2
Dominican Republic (the) 1 0
Poland 0 2
Peru 2 0
Ireland 1 1
France 0 2
Finland 0 1
Ukraine 1 0
Portugal 1 0
New Zealand 0 1
Malaysia 0 1
Korea (the Republic of) 0 1
Guatemala 0 1
Indonesia 1 0
Step up Bonds
No Step up Bonds

Preamble 4:

With the Taxonomy nowadays defining "french fries as salad",

SFDR Art. 9 is the new Green Superstar!

SFDR simplified by EU FISMA "SFDR" (i.e. C4) Unit Head

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"#Article9 claims to be walking the walk,

SFDR simplified by EU FISMA "SFDR" (i.e. C4) Unit Head

"#Article9 claims to be walking the walk,

#Article8 claims to be talking the walk,

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"#Article9 claims to be walking the walk,

#Article8 claims to be talking the walk,

#Article6 you have to do it whether or not you are talking or walking"

Alain Deckers (Head of Asset Management Unit, EU FISMA) on LinkedIn (May 13th '22) in response to my simplification below

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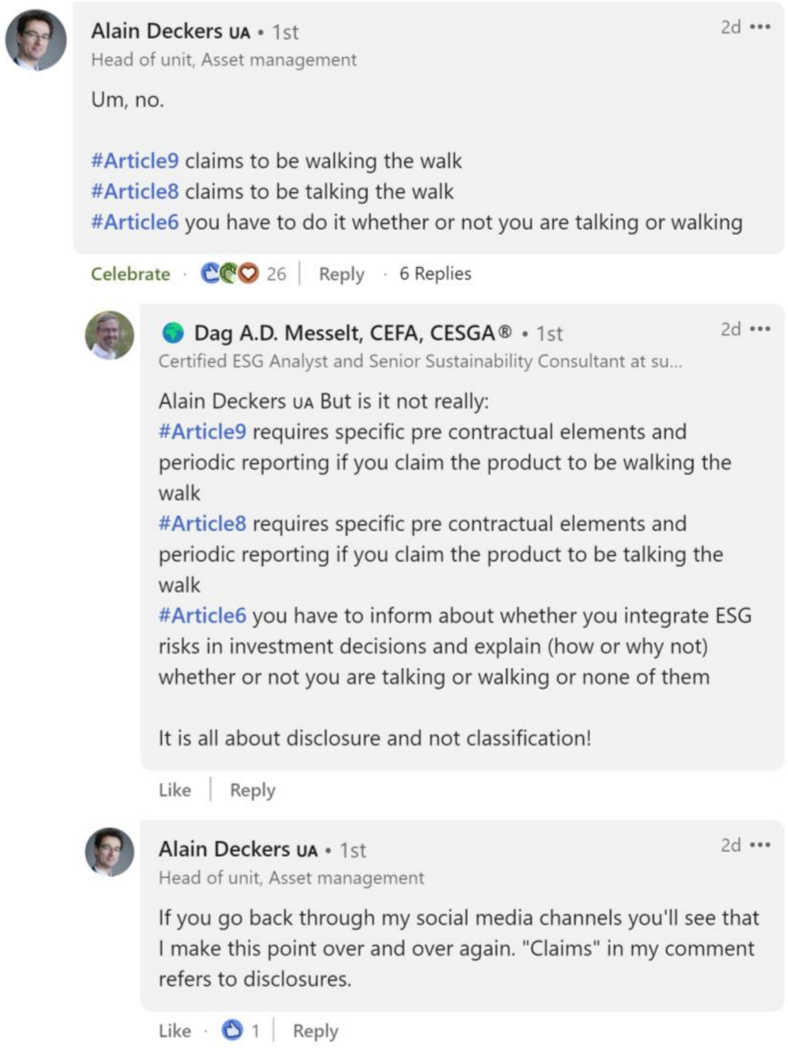

SFDR Article 9

Article 9

Transparency of sustainable investments in pre-contractual disclosures

1. Where a financial product has sustainable investment as its objective and an index has been designated as a reference benchmark, the information to be disclosed pursuant to Article 6(1) and (3) shall be accompanied by the following:

(a) information on how the designated index is aligned with that objective;

(b) an explanation as to why and how the designated index aligned with that objective differs from a broad market index.

2. Where a financial product has sustainable investment as its objective and no index has been designated as a reference benchmark, the information to be disclosed pursuant to Article 6(1) and (3) shall include an explanation on how that objective is to be attained.

3. Where a financial product has a reduction in carbon emissions as its objective, the information to be disclosed pursuant to Article 6(1) and (3) shall include the objective of low carbon emission exposure in view of achieving the long-term global warming objectives of the Paris Agreement.

By way of derogation from paragraph 2 of this Article, where no EU Climate Transition Benchmark or EU Paris-aligned Benchmark in accordance with Regulation (EU) 2016/1011 of the European Parliament and of the Council ([20]) is available, the information referred to in Article 6 shall include a detailed explanation of how the continued effort of attaining the objective of reducing carbon emissions is ensured in view of achieving the long-term global warming objectives of the Paris Agreement.

4. Financial market participants shall include in the information to be disclosed pursuant to Article 6(1) and (3) an indication of where the methodology used for the calculation of the indices referred to in paragraph 1 of this Article and the benchmarks referred to in the second subparagraph of paragraph 3 of this Article are to be found.

5. The ESAs shall, through the Joint Committee, develop draft regulatory technical standards to specify the details of the presentation and content of the information to be disclosed pursuant to this Article.

SFDR Article 9 (3)

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Transparency of sustainable investments in pre-contractual disclosures

1. Where a financial product has sustainable investment as its objective and an index has been designated as a reference benchmark, the information to be disclosed pursuant to Article 6(1) and (3) shall be accompanied by the following:

(a) information on how the designated index is aligned with that objective;

(b) an explanation as to why and how the designated index aligned with that objective differs from a broad market index.

2. Where a financial product has sustainable investment as its objective and no index has been designated as a reference benchmark, the information to be disclosed pursuant to Article 6(1) and (3) shall include an explanation on how that objective is to be attained.

3. Where a financial product has a reduction in carbon emissions as its objective, the information to be disclosed pursuant to Article 6(1) and (3) shall include the objective of low carbon emission exposure in view of achieving the long-term global warming objectives of the Paris Agreement.

By way of derogation from paragraph 2 of this Article, where no EU Climate Transition Benchmark or EU Paris-aligned Benchmark in accordance with Regulation (EU) 2016/1011 of the European Parliament and of the Council ([20]) is available, the information referred to in Article 6 shall include a detailed explanation of how the continued effort of attaining the objective of reducing carbon emissions is ensured in view of achieving the long-term global warming objectives of the Paris Agreement.

4. Financial market participants shall include in the information to be disclosed pursuant to Article 6(1) and (3) an indication of where the methodology used for the calculation of the indices referred to in paragraph 1 of this Article and the benchmarks referred to in the second subparagraph of paragraph 3 of this Article are to be found.

5. The ESAs shall, through the Joint Committee, develop draft regulatory technical standards to specify the details of the presentation and content of the information to be disclosed pursuant to this Article.

SFDR Article 9 (1)(a)

Article 9

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SFDR Article 2 (17)

(17) 'sustainable investment' means an investment in an economic activity that contributes to an environmental objective, as measured, for example, by key resource efficiency indicators on the use of energy, renewable energy, raw materials, water and land, on the production of waste, and greenhouse gas emissions, or on its impact on biodiversity and the circular economy, or an investment in an economic activity that contributes to a social objective, in particular an investment that contributes to tackling inequality or that fosters social cohesion, social integration and labour relations, or an investment in human capital or economically or socially disadvantaged communities, provided that such investments do not significantly harm any of those objectives and that the investee companies follow good governance practices, in particular with respect to sound management structures, employee relations, remuneration of staff and tax compliance;

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SFDR 2(17) simplified:

(a) You can include any investment with at least one underlying activity contributing [somewhat or substantial] to one of the sustainability objectives chosen for your fund

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(b) Provided that, you exclude (i) any investment with at least one underlying activity doing significant harm on any social or environmental PAI and (ii) any corporation with less than good management structures, employee relations, employee renumeration and tax structures

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Key to understanding 2(17) is to recognise that (a) and (b)(i) represent an assessment of activities NOT the corporation itself, which is only assessed in (b)(ii). In other words, two corporations with an identical portfolio of activities but very different public reputation should be classified equivalently under (a) and (b)(i), which is crucial to insulate 2(17) from PR based Greenwashing.

Absolutely Sustainable Investing =

1 ***Reduce GHG emissions vs. Market Benchmark*** *in a given year (Relatively more sustainable investing as practiced in 2019)*

\+

2 ***Reduce GHG emissions year on year*** *by at least 7% p.a..*

\+

3 *Reach* ***Net Zero GHG emissions by 2050****.*

\+

4 *Integrate* ***Scope 3 GHG emissions.***

\+

5 *Use the* ***Precautionary Principle*** *in GHG data estimations****.***

Precautionary Principle based Estimation

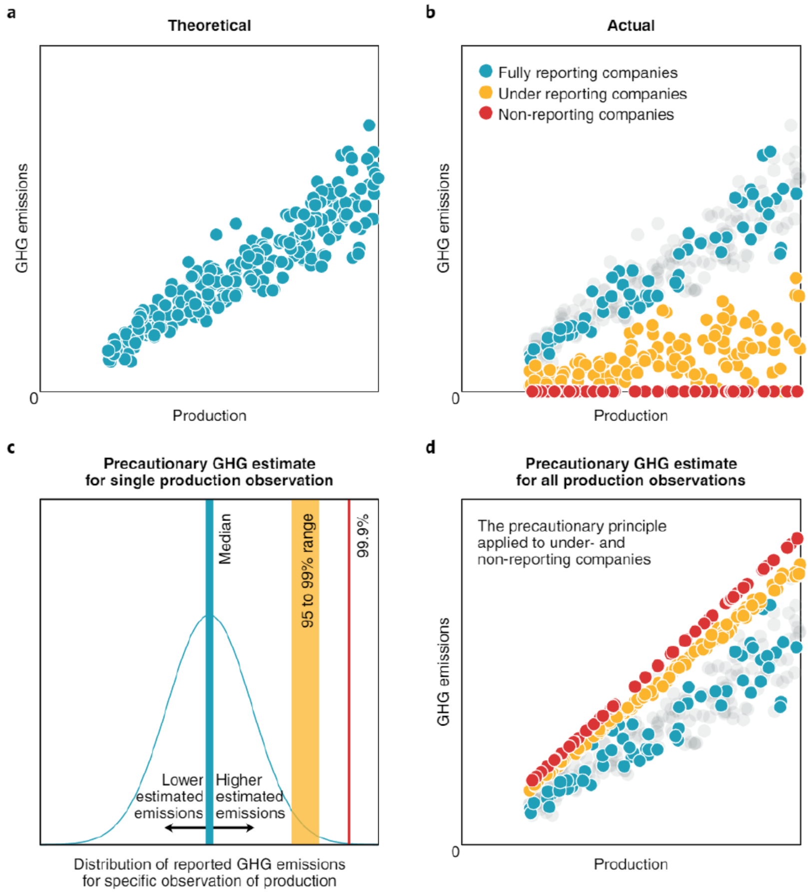


Fig. 1 | Application of the precautionary principle to estimation of under- and non-reporting companies.
a, Theoretical distribution of company GHG emissions as a function of production. **b**, Illustrative actual distribution of company GHG emissions under full (blue), underreporting (yellow) and non-reporting (red) scenarios. **c**, Proposed application of the precautionary principle to estimate the GHG emissions for an under- or non-reporting company with a specific production level. **d**, Outcome of the application of the precautionary principle to estimating under- and non-reporting emissions, providing incentives for improvement.

Absolutely Sustainable Investing: Paris Aligned Benchmarks and/or Climate Transition Benchmarks

1. ***Quasi Mandatory*** *as* ***Benchmark*** *for* ***EU SFDR Article 9 funds with climate objective*** *(clarified by ESMA July 2021)*

&

2. ***Total AUM*** *since Dec 23rd 2020 effective launch* ***> €50bn.***

&

3. *100+ of Indices, ETFs and even inhouse AO mandates launched.*

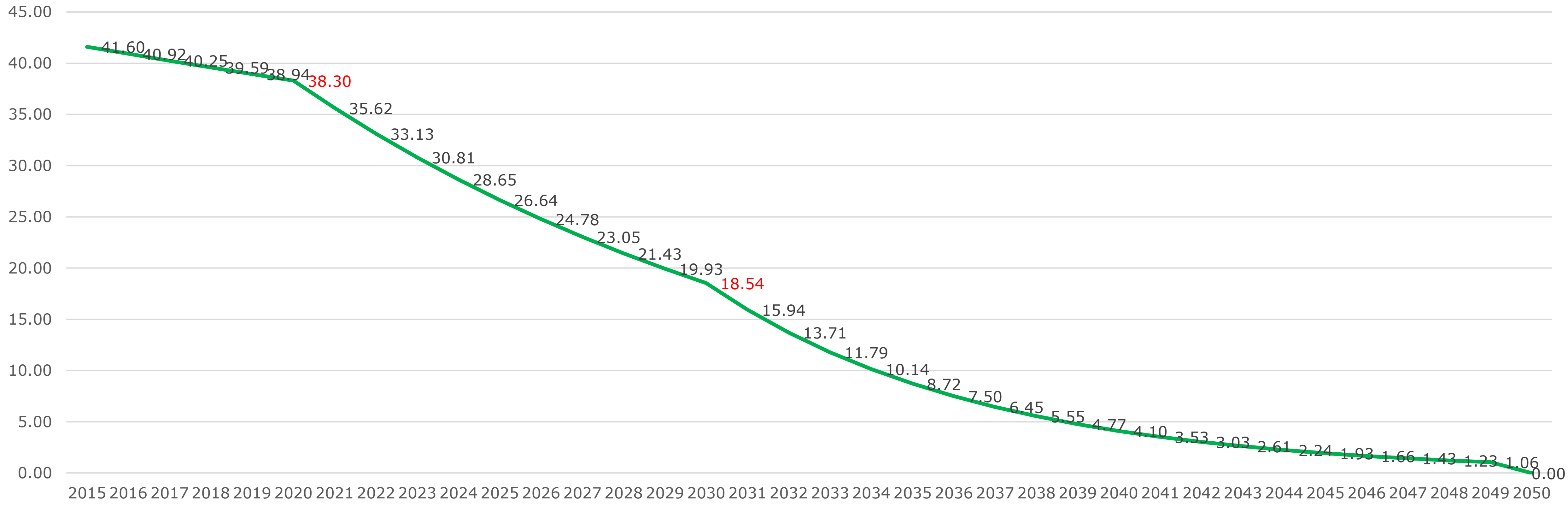
~

4. *Real World Impact: The strong growth in PABs and CTBs combined with the mandatory application for Article 9 funds with climate objective will lead to top tier EU sustainability funds being benchmarked on*
   - *ROI: Sufficient financial performance (i.e. return per unit of risk)*
   - *RIO: Sufficient GHG reduction performance (i.e. at least 7% p.a.)*

What is needed?!
A trajectory to Net Carbon/Climate Neutral in 2050

IPCC based Trajectory to Net Carbon Neutral from Paris Agreement 1.5C scenario 'Total net GHG emissions' (in GtCO2/yr)

based on IPCC Special Report on Global Warming of 1.5C (Table 2.1 & 2.4, Rogelj et al., 2018)



Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable.

"Thank you for your attention.
I would love to learn from your questions and comments."

Andreas G. F. Hoepner

Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable.

Appendices

Andreas G. F. Hoepner

Key Objective of the Climate Benchmarks (1/3)

(5) The benchmark methodology of EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks should be linked to the commitments laid down in the Paris Agreement. It is therefore necessary to use the 1,5°C scenario, with no or limited overshoot, referred to in the Special Report on Global Warming of 1,5°C from the Intergovernmental Panel on Climate Change (IPCC)[6] ('IPCC scenario'). That IPCC scenario is in line with the Commission's objective to reach net zero greenhouse gas (GHG) emissions by 2050, set out in the European Green Deal. To be in line with the IPCC scenario, investments should be reallocated from fossil-fuels dependent activities to green or renewable activities and the climate impact of those investments should improve year after year.

Source: European Commission Ref. Ares(2020)1993773 - 08/04/2020

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(Relatively more sustainable investing as practiced in 2019)

+

2

3

4

5

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Reduce GHG emissions vs. Market Benchmark *in a given year*
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+

2

Reduce GHG emissions year on year *by at least 7% p.a..*

+

3

4

5

Differentiation of climate benchmarks

*The two climate benchmarks **vary in their level of ambition**.*

*As a result, most of the recommendations are **common** to both climate benchmarks but with **different thresholds**.*

*Specifically, the Paris-Aligned Benchmark (PAB) **use exclusions**, while the Climate Transition Benchmark (CTB) does not.*

Recommendations for climate benchmarks: Minimum Standards

The TEG recommends minimum standards for the ***EU Climate Transition Benchmark*** *and the* ***EU Paris-aligned Benchmark:***

	Climate Scenario
	IPCC 1.5°C **with no or limited overshoot**
EU CTB	✓
EU PAB	✓

Recommendations for climate benchmarks: Minimum Standards

The TEG recommends minimum standards for the ***EU Climate Transition Benchmark*** *and the* ***EU Paris-aligned Benchmark:***

	Climate Scenario	Relative decarbonization
	IPCC 1.5°C with no or limited overshoot	**CTB: -30%** **PAB: -50%** Minimum reduction in GHG emissions intensity (GHG/EVIC) compared to market index
EU CTB	✓	✓
EU PAB	✓	✓ ✓

Recommendations for climate benchmarks: Minimum Standards

The TEG recommends minimum standards for the ***EU Climate Transition Benchmark*** *and the* ***EU Paris-aligned Benchmark:***

	Climate Scenario	Relative decarbonization	Self decarbonization
	IPCC 1.5°C with no or limited overshoot	**CTB: -30%** **PAB: -50%** Minimum reduction in GHG emissions intensity (GHG/EVIC) compared to market index	**-7%** Minimum on average per annum reduction in GHG emissions intensity until 2050
EU CTB	✓	✓	✓
EU PAB	✓	✓ ✓	✓

Recommendations for climate benchmarks: Minimum Standards

The TEG recommends minimum standards for the ***EU Climate Transition Benchmark*** *and the* ***EU Paris-aligned Benchmark:***

2-factor Greenwashing Protection

	Climate Scenario	Relative decarbonization	Self decarbonization	Equity Allocation Constraint
	IPCC 1.5°C with no or limited overshoot	**CTB: -30%** **PAB: -50%** Minimum reduction in GHG emissions intensity (GHG/EVIC) compared to market index	**-7%** Minimum on average per annum reduction in GHG emissions intensity until 2050	**= or >** AH: Degree of Exposure to "asset heavy" sectors compared with investable universe [Equities Only]
EU CTB	✓	✓	✓	✓
EU PAB	✓	✓ ✓	✓	✓

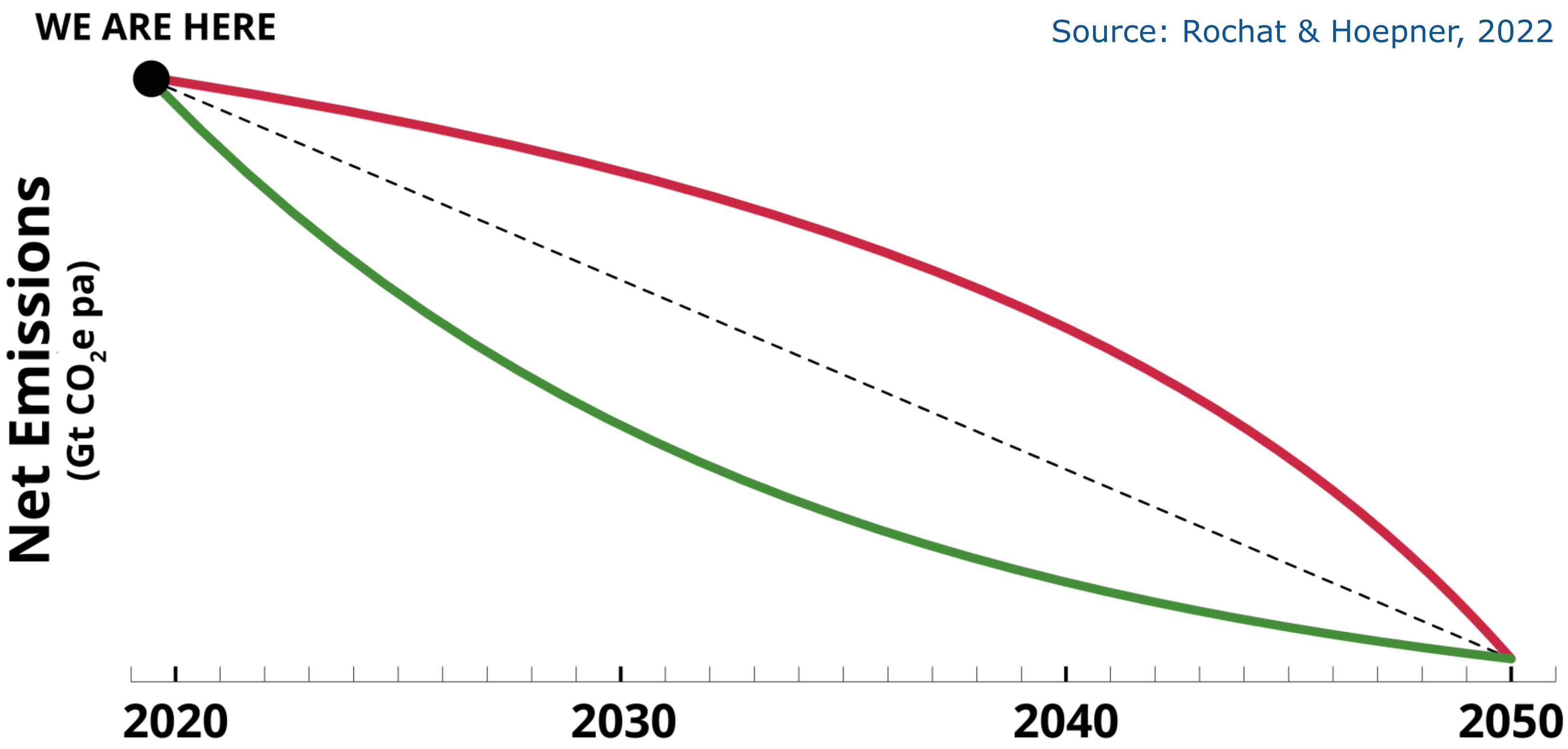
Recommendations for climate benchmarks: Minimum Standards

The TEG recommends minimum standards for the ***EU Climate Transition Benchmark*** *and the* ***EU Paris-aligned Benchmark:***

2-factor Greenwashing Protection (Equity Allocation Constraint and Activity Exclusion)

	Climate Scenario	Relative decarbonization	Self decarbonization	Equity Allocation Constraint	Activity Exclusion
	IPCC 1.5°C with no or limited overshoot	**CTB: -30%** **PAB: -50%** Minimum reduction in GHG emissions intensity (GHG/EVIC) compared to market index	**-7%** Minimum on average per annum reduction in GHG emissions intensity until 2050	**= or >** Degree of Exposure to "asset heavy" sectors compared with investable universe [Equities Only]	1) Coal (1%+ rev.) 2) Oil (10%+ rev.) 3) Natural Gas 4) Electricity producers with carbon intensity of lifecycle GHG emissions higher than 100gCO2e/kWh (both 50%+ rev)
EU CTB	✓	✓	✓	✓	
EU PAB	✓	✓ ✓	✓	✓	✓

CTBs & PABs curve the right trajectory to Net Zero 2050



Dotted line falls 3-4% depending on base year (e.g. 2017 vs. 2025).

Red line is focused on economic efficiency and falls lesser.

Green line is focused on impact sufficiency and falls steeper.

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Reach ***Net Zero GHG emissions by 2050****.*

4

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GHG emissions: Scope 3 is Key!

GHG emissions should be considered using Life-Cycle Analysis with scope 3 being phased-in during a four year period

Period considered	NACE Level 2 (L2) Sectors considered	Suggested metric to be used by order of priority	Potential reduction target
At the date of implementation	At least energy (O&G), mining (i.e. NACE L2: 05, 06, 07, 08, 09, 19, 20)	Scope 3 emissions, Fossil fuel reserves (volume or revenue data)	30% for CTBs, 50% for PABs
Two years after implementation	At least transportation, construction, buildings, materials, industrial activities (i.e. NACE L2: 10-18, 21-33, 41-43, 49-53, 81)	Scope 3	30% for CTBs, 50% for PABs
Four years after implementation	Every sector	Scope 3	30% for CTBs, 50% for PABs

Double counting can be addressed by 'Footprinting Scope 1' and separately 'Benchmarking Scope 2 & 3', with at least 7% reductions on both

Key Objective of the Climate Benchmarks (2/3)

(8) A decarbonisation based only on Scope 1 and Scope 2 (GHG) emissions could lead to counterintuitive results. It should therefore be clarified that the minimum standards for EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks should not only consider direct emissions from companies, but also emissions assessed on a life-cycle basis and thus including Scope 3 (GHG) emissions. However, due to the insufficient quality of the data currently available for Scope 3 GHG emissions, it is necessary to set out an appropriate phase-in timeline. That phase-in timeline should be based on the list of economic activities set out in Regulation (EC) No 1893/2006.

Source: European Commission Ref. Ares(2020)1993773 - 08/04/2020

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Integrate ***Scope 3 GHG emissions.***

5

Key Objective of the Climate Benchmarks (3/3)

Article 12

Transparency requirements for estimations

In addition to the requirements laid down in Annex III to Regulation (EU) 2016/1011, administrators of EU Climate Transition Benchmarks or of EU Paris-aligned Benchmarks shall comply with the following requirements:

(a) administrators of EU Climate Transition Benchmarks or of EU Paris-aligned Benchmarks that use estimations that are not based on data provided by an external data provider, shall formalise, document and make public the methodology upon which such estimations are based, including:

- (i) the approach that they have used to calculate GHG emissions, and the main assumptions and the precautionary principles underlying those estimations;
- (ii) the research methodology to estimate missing, unreported, or underreported GHG emissions;
- (iii) the external data sets used in the estimation of missing, unreported or underreported GHG emissions;

Source: European Commission Ref. Ares(2020)1993773 - 08/04/2020

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+

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+

4. *Integrate* ***Scope 3 GHG emissions.***

+

5. *Use the* ***Precautionary Principle*** *in GHG data estimations****.***

Be aware of corporate GHG reporting!

You Retweeted

Carbon Tracker
@CarbonBubble

Professor @AndreasHoepner: "companies are pretending they care about the environment, but they can’t even add up the [#emissions] data." It shows their #NetZero targets are just a big public relations exercise.’’

bloomberg.com
Corporate Greenhouse Gas Numbers Don’t Always Add Up
A new study reveals errors, omissions and even rounding issues. “It shows that their net-zero targets are just a big public relations exercise,’’ a researcher said.

3:15 PM · Jan 13, 2022 · Twitter Web App

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 1 : Imperial
(Imperial Oil)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch	
											Total	Percentage
Activity												
Business		✓	✓	✓	✓	✗	✓	✓			1	14.3%
Facility												
GHG	✓	✓	✓	✓	✓	✓	✓	✓			0	0%
Region	✓										0	0%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 1 : Business (Worst Mismatch)

Imperial
(Imperial Oil)

	Breakdown by Business	CO2e
1	Downstream	44,632,649
2	Upstream	5,769,102
3	Chemicals	309,863

Reported Global Scope 1 Emissions (metric tons CO2e): **10,711,614**

Total Scope 1 Business Emissions (metric tons CO2e): **50,711,614**

$\underbrace{10{,}711{,}614 - 50{,}711{,}614}_{-40{,}000{,}000}$

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity												
Business		✓	✓	✓	✓	✗	✓	✓			1	14.3%
Facility												
GHG	✓	✓	✓	✓	✓	✓	✓	✓			0	0%
Region	✓										0	0%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 2 Walmart
(Wal-Mart Stores, Inc.)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch	
											Total	Percentage
Activity		✓	✗	✗	✗	✗	✗	✗	✗	✓	7	77.8%
Business	✓	✓	✓	✓	✓	✗	✓	✗	✗	✓	3	30%
Facility												
GHG	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	7	70%
Region	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	2	20%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 2 : Activity (Worst Mismatch)

Walmart

(Wal-Mart Stores, Inc.)

	Breakdown by Activity	CO2e
1	Store	5,352,450
2	Logistics	1,320,190
3	Distribution Center	99,060
4	Other	67,029
5	Dark Store	2,548
6	Factory	2,012
7	Co-located site	1,644
8	Data Center	572
9	Loss Prevention	2

Reported Global Scope 1 Emissions (metric tons CO2e): **6,761,814**

Total Scope 1 Activity Emissions (metric tons CO2e): **6,845,507**

$\underbrace{6{,}761{,}814 - 6{,}845{,}507}_{-83{,}693}$

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity		✓	✗	✗	✗	✗	✗	✗	✗	✓	7	77.8%
Business	✓	✓	✓	✓	✓	✗	✓	✗	✗	✓	3	30%
Facility												
GHG	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	7	70%
Region	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	2	20%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 2 : Business (Worst Mismatch)

Walmart

(Wal-Mart Stores, Inc.)

Reported Global Scope 1 Emissions (metric tons CO2e): **6,650,232**

−

Total Scope 1 Business Emissions (metric tons CO2e): **6,698,732**

= **-48,500**

	Breakdown by Business	CO2e
1	US and Puerto Rico	4,341,657
2	Mexico	666,761
3	Brazil	434,323
4	China	261,902
5	UK	218,806
6	Argentina	210,746
7	Chile	203,529
8	Canada	182,335
9	Japan	65,692
10	Africa	56,924
11	Honduras	12,274
12	Costa Rica	10,614
13	India	10,040
14	Nicaragua	7,943
15	Guatemala	7,603
16	El Salvador	7,583

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity		✓	✗	✗	✗	✗	✗	✗	✗	✓	7	77.8%
Business	✓	✓	✓	✓	✓	✗	✓	✗	✗	✓	3	30%
Facility												
GHG	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	7	70%
Region	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	2	20%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 2 : GHG (Worst Mismatch)

Walmart

(Wal-Mart Stores, Inc.)

	Breakdown by GHG	CO2e
1	CO_2	3,225,551
2	HFCs	2,661,801
3	N_2O	14,469
4	CH_4	1,838

Reported Global Scope 1 Emissions (metric tons CO_2e)

$$\underbrace{\boxed{6{,}101{,}641} - \boxed{5{,}903{,}659}}_{\boxed{197{,}982}}$$

Total Scope 1 GHG Emissions (metric tons CO_2e)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity		✓	✗	✗	✗	✗	✗	✗	✗	✓	7	77.8%
Business	✓	✓	✓	✓	✓	✗	✓	✗	✗	✓	3	30%
Facility												
GHG	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	7	70%
Region	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	2	20%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 2 : Region (Worst Mismatch)

Walmart

(Wal-Mart Stores, Inc.)

	Breakdown by Region	CO2e
1	United States of America	4,293,156
2	Mexico	666,761
3	Brazil	434,323
4	China	261,902
5	United Kingdom	218,806
6	Argentina	210,746
7	Chile	203,529
8	Canada	182,335
9	Japan	65,692
10	Africa	56,924
11	Puerto Rico	48,501
12	Honduras	12,274
13	Costa Rica	10,614
14	India	10,040
15	Nicaragua	7,943
16	Guatemala	7,603
17	El Salvador	7,583

Reported Global Scope 1 Emissions (metric tons CO2e)

6,650,232 − 6,698,732

$\underbrace{6{,}650{,}232 - 6{,}698{,}732}_{-48{,}500}$

Total Scope 1 Region Emissions (metric tons CO2e)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity		✓	✗	✗	✗	✗	✗	✗	✗	✓	7	77.8%
Business	✓	✓	✓	✓	✓	✗	✓	✗	✗	✓	3	30%
Facility												
GHG	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	7	70%
Region	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	2	20%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 3 RioTinto

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch	
											Total	Percentage
Activity												
Business	✗	✗	✗	✓	✗	✗	✗	✗		✗	8	88.9%
Facility												
GHG	✗	✗	✗	✗	✗	✗	✗	✗		✗	9	100%
Region	✗	✗	✓	✗	✗	✗	✗	✗		✗	8	88.9%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 3 : Business (Worst Mismatch)

RioTinto

	Breakdown by Business	CO2e
1	Aluminium	9,600,000
2	Energy and Minerals	3,600,000
3	Iron Ore	3,200,000
4	Copper and Diamonds	1,300,000
5	Corporate Functions	230,000
6	Growth and Innovation	4000

Reported Global Scope 1 Emissions (metric tons CO2e): 17,800,000

Total Scope 1 Business Emissions (metric tons CO2e): 17,934,000

17,800,000 − 17,934,000 = -134,000

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity												
Business	✗	✗	✗	✓	✗	✗	✗	✗		✗	8	88.9%
Facility												
GHG	✗	✗	✗	✗	✗	✗	✗	✗		✗	9	100%
Region	✗	✗	✓	✗	✗	✗	✗	✗		✗	8	88.9%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 3 : GHG (Worst Mismatch)

RioTinto

	Breakdown by GHG	CO2e
1	CO_2	17,900,000
2	CH_4	1,000,000
3	PFCs	900,000
4	N_2O	33,000
5	SF_6	13,000
6	HFCs	7000

Reported Global Scope 1 Emissions (metric tons CO2e): 19,800,000

\- Total Scope 1 GHG Emissions (metric tons CO2e): 19,853,000

-53,000

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity												
Business	✗	✗	✗	✓	✗	✗	✗	✗		✗	8	88.9%
Facility												
GHG	✗	✗	✗	✗	✗	✗	✗	✗		✗	9	100%
Region	✗	✗	✓	✗	✗	✗	✗	✗		✗	8	88.9%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 3 : Region (Worst Mismatch)

RioTinto

	Breakdown by Region	CO2e
1	Oceania	10,700,000
2	North America	7,600,000
3	Africa	2,100,000
4	Europe	1,300,000
5	Asia Middle East (AME)	300,000
6	South America	1000

Reported Global Scope 1 Emissions (metric tons CO2e): 21,900,000

− 22,001,000 Total Scope 1 Region Emissions (metric tons CO2e)

-101,000

	2010	2011	2012	2013	2014	**2015**	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity												
Business	✗	✗	✗	✓	✗	✗	✗	✗		✗	8	88.9%
Facility												
GHG	✗	✗	✗	✗	✗	✗	✗	✗		✗	9	100%
Region	✗	✗	✓	✗	✗	✗	✗	✗		✗	8	88.9%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 4 RWE
(RWE AG)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch	
											Total	Percentage
Activity		✗	✗	✓	✗	✗				✓	4	66.7%
Business		✗	✓	✓							1	33.3%
Facility												
GHG										✓	0	0%
Region	✓		✓	✓	✗	✗				✓	2	33.3%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 4 : Activity (Worst Mismatch)

RWE

(RWE AG)

	Breakdown by Activity	CO2e
1	Electricity	163,800,000
2	Gas&Oil	1,900,000

Reported Global Scope 1 Emissions (metric tons CO2e)

Total Scope 1 Activity Emissions (metric tons CO2e)

$$\underbrace{163{,}800{,}000 - 165{,}700{,}000}_{-1{,}900{,}000}$$

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity		✗	✗	✓	✗	✗				✓	4	66.7%
Business		✗	✓	✓							1	33.3%
Facility												
GHG										✓	0	0%
Region	✓		✓	✓	✗	✗				✓	2	33.3%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 4 : Business (Worst Mismatch)

RWE
(RWE AG)

	Breakdown by Business	CO2e
1	Germany	130.6
2	United Kingdom	18.9
3	Netherlands	8.3
4	Central Eastern and South Eastern Europe	7.1

Reported Global Scope 1 Emissions (metric tons CO2e): 167,100,000

–

Total Scope 1 Business Emissions (metric tons CO2e): 164.9

= 167,099,835.1

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity		✗	✗	✓	✗	✗				✓	4	66.7%
Business		✗	✓	✓							1	33.3%
Facility												
GHG										✓	0	0%
Region	✓		✓	✓	✗	✗				✓	2	33.3%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 4 : Region (Worst Mismatch)

RWE

(RWE AG)

	Breakdown by Region	CO2e
1	Germany	126,510,000
2	United Kingdom	18,900,000
3	Netherlands	8,300,000
4	Hungary	6,500,000
5	Turkey	500,000

Reported Global Scope 1 Emissions (metric tons CO2e)

165,700,000 − 160,710,000

Total Scope 1 Region Emissions (metric tons CO2e)

4,990,000

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch	
											Total	Percentage
Activity		✗	✗	✓	✗	✗				✓	4	66.7%
Business		✗	✓	✓							1	33.3%
Facility												
GHG										✓	0	0%
Region	✓		✓	✓	✗	✗				✓	2	33.3%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 5 Shell
(Royal Dutch Shell)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch	
											Total	Percentage
Activity												
Business	✓	✗	✗	✗	✗	✗	✗	✗		✗	8	88.9%
Facility												
GHG	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	10	100%
Region	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	9	90%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 5 : Business (Worst Mismatch)

Shell

(Royal Dutch Shell)

	Breakdown by Business	CO2e
1	Downstream	37,500,000
2	Upstream (other than flaring)	26,300,000
3	Upstream flaring	7,400,000
4	Shipping	2,000,000
5	Other	240,000

Reported Global Scope 1 Emissions (metric tons CO_2e): **73,000,000**

−

Total Scope 1 Business Emissions (metric tons CO_2e): **73,440,000**

$\underbrace{73{,}000{,}000 - 73{,}440{,}000}_{-440{,}000}$

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity												
Business	✓	✗	✗	✗	✗	✗	✗	✗		✗	8	88.9%
Facility												
GHG	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	10	100%
Region	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	9	90%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 5 : GHG (Worst Mismatch)

Shell

(Royal Dutch Shell)

	Breakdown by GHG	CO2e
1	CO2	70,600,000
2	CH4	2,520,000
3	N2O	300,000
4	HFCs	21,500
5	SF6	400

Reported Global Scope 1 Emissions (metric tons CO2e): 73,000,000 − 73,441,900 : Total Scope 1 GHG Emissions (metric tons CO2e)

-441,900

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity												
Business	✓	✗	✗	✗	✗	✗	✗	✗		✗	8	88.9%
Facility												
GHG	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	10	100%
Region	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	9	90%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Worst Firms (Scope 1):

Reported Global Emissions ≠ Sum of Breakdowns

Example 5 : Region (Worst Mismatch)

Shell

(Royal Dutch Shell)

	Breakdown by Region	CO2e
1	USA	15,000,000
2	Middle East	12,000,000
3	Canada	7,700,000
4	Netherlands	7,100,000
5	Singapore	4,800,000
6	Malaysia	3,800,000
7	Nigeria	3,700,000
8	Rest of world	3,700,000
9	Germany	3,400,000
10	Australia	3,300,000
11	UK	3,000,000
12	South America	1,700,000
13	International Waters	1,400,000

Reported Global Scope 1 Emissions (metric tons CO2e)

70,000,000 − 70,600,000

Total Scope 1 Region Emissions (metric tons CO2e)

$\underbrace{70{,}000{,}000 - 70{,}600{,}000}_{-600{,}000}$

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mismatch Total	Mismatch Percentage
Activity												
Business	✓	✗	✗	✗	✗	✗	✗	✗		✗	8	88.9%
Facility												
GHG	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	10	100%
Region	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	9	90%

Source: Garcia Vega, Hoepner, Rogelj & Schiemann (2022)

Recommendations for climate benchmarks: Companies' Targets

It is crucial to understand that IPCC trajectory alignment can only be sufficiently assessed for 'self-sufficient subsets of the economy' (i.e. diversified indices).

- Analysis on sector or firm level ignore the interactions between firms and sector specific carbon budgets are usually constructed by sector insiders, who tend to give themselves a too large share of the global carbon budget.

<u>Hence, a firm itself cannot be 1.5 degree aligned unless it is net climate/carbon neutral. Firms can only be assessed as 'suitable, somewhat suitable or unsuitable for 1.5 degree alignment'</u>

Inspired by the Precautionary Principle, benchmark administrators shall consider increasing the weight of a company that set and publish evidence based decarbonisation objectives in case all of the subsequent conditions apply:

a) the benchmark administrator deems the company's Scope 1 GHG emissions reporting fully credible in terms of consistency and accuracy

b) the benchmark administrator deems the company's Scope 2 GHG emissions reporting fully credible in terms of consistency and accuracy

c) the benchmark administrator deems the company's Scope 3 GHG emissions reporting fully credible in terms of consistency and accuracy

d) the benchmark administrator observes the company to have reduced its total GHG emissions intensity of Scope 1, 2 and 3 emissions by an average of at least 7% per annum for at least three consecutive years.

Net Zero Zeal (NZZ) greenwashing-proof ‘Scientinnz’ Conditional Rating

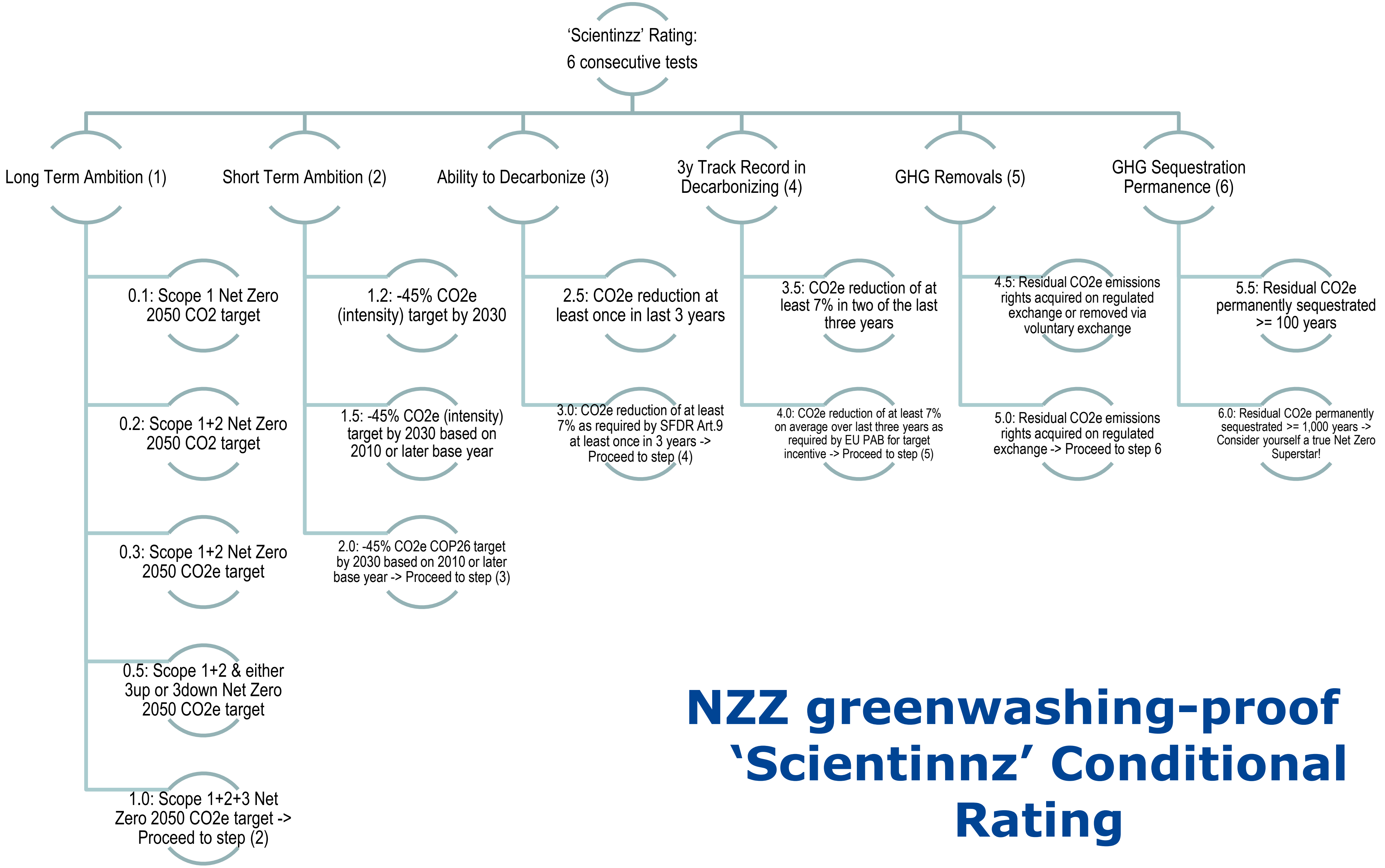
‘Scientinzz’ Rating:
6 consecutive tests

- Long Term Ambition (1)
- Short Term Ambition (2)
- Ability to Decarbonize (3)
- 3y Track Record in Decarbonizing (4)
- GHG Removals (5)
- GHG Sequestration Permanence (6)

Scientinnz Greenwashing-Proof Rating Development Team:

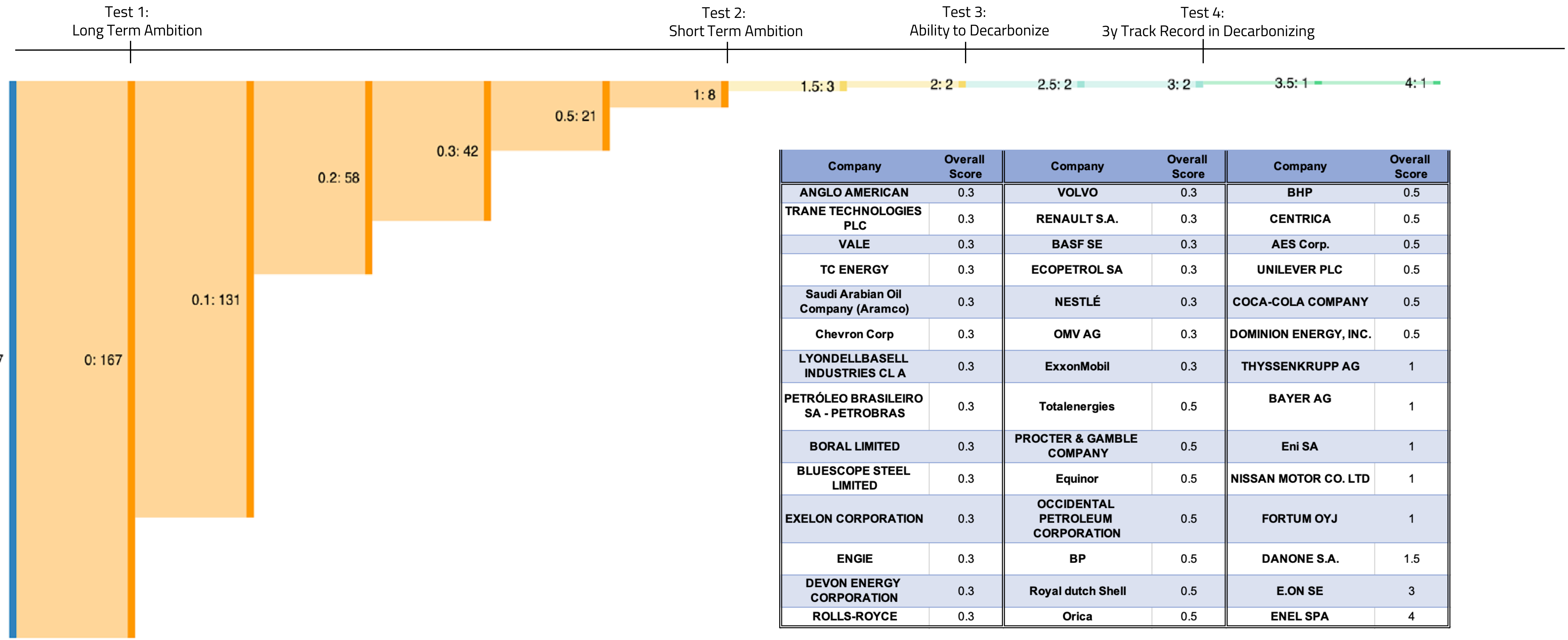
Co-Leads:
Prof. Andreas Hoepner, Co-Inventor and Lead Author of EU Paris-Aligned Benchmarks, Head of the Data Subgroup of the European Platform for Sustainable Finance, SVL & UCD
Assoc. Prof. Joeri Rogelj, Lead Author of the IPPC’s ‘Mitigation pathways compatible with 1.5°C’ & Imperial College London

Members:
Assoc. Prof. Theodor Cojoianu, Member of the European Platform for Sustainable Finance, Member of the UK Treasury’s Green Technical Advisory Group & University of Edinburgh
Prof. Giovanna Michelon, University of Bristol
Drs. Ifigeneia Paliabelos, NZZ & University of Hamburg
Assoc. Prof. Saphira Rekker, University of Queensland



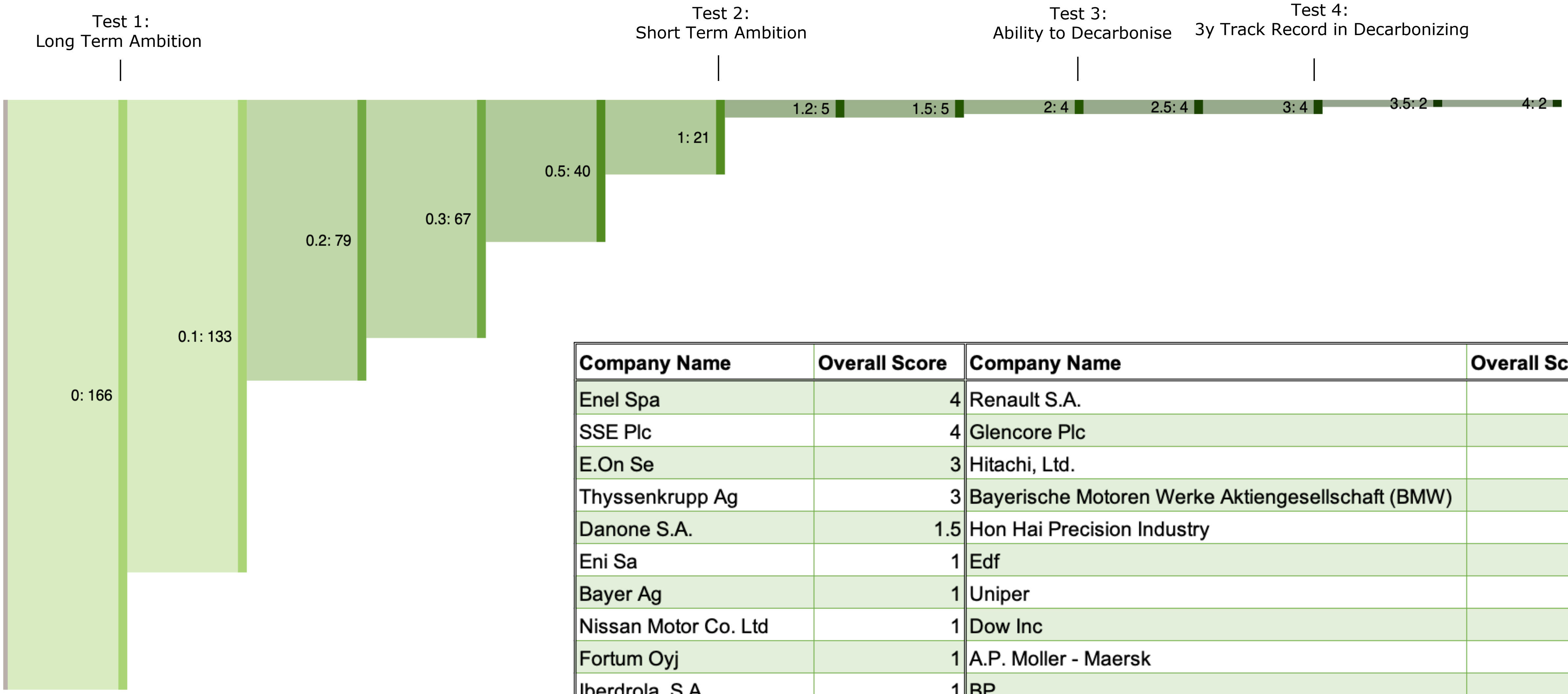
NZZ greenwashing-proof ‘Scientinnz’ Conditional Rating

Climate Action 100+: NZZ Graph (as of April 2022)



Company	Overall Score	Company	Overall Score	Company	Overall Score
ANGLO AMERICAN	0.3	VOLVO	0.3	BHP	0.5
TRANE TECHNOLOGIES PLC	0.3	RENAULT S.A.	0.3	CENTRICA	0.5
VALE	0.3	BASF SE	0.3	AES Corp.	0.5
TC ENERGY	0.3	ECOPETROL SA	0.3	UNILEVER PLC	0.5
Saudi Arabian Oil Company (Aramco)	0.3	NESTLÉ	0.3	COCA-COLA COMPANY	0.5
Chevron Corp	0.3	OMV AG	0.3	DOMINION ENERGY, INC.	0.5
LYONDELLBASELL INDUSTRIES CL A	0.3	ExxonMobil	0.3	THYSSENKRUPP AG	1
PETRÓLEO BRASILEIRO SA - PETROBRAS	0.3	Totalenergies	0.5	BAYER AG	1
BORAL LIMITED	0.3	PROCTER & GAMBLE COMPANY	0.5	Eni SA	1
BLUESCOPE STEEL LIMITED	0.3	Equinor	0.5	NISSAN MOTOR CO. LTD	1
EXELON CORPORATION	0.3	OCCIDENTAL PETROLEUM CORPORATION	0.5	FORTUM OYJ	1
ENGIE	0.3	BP	0.5	DANONE S.A.	1.5
DEVON ENERGY CORPORATION	0.3	Royal dutch Shell	0.5	E.ON SE	3
ROLLS-ROYCE	0.3	Orica	0.5	ENEL SPA	4

Climate Action 100+: NZZ Graph (as of April 2022)



Company Name	Overall Score	Company Name	Overall Score
Enel Spa	4	Renault S.A.	1
SSE Plc	4	Glencore Plc	1
E.On Se	3	Hitachi, Ltd.	1
Thyssenkrupp Ag	3	Bayerische Motoren Werke Aktiengesellschaft (BMW)	1
Danone S.A.	1.5	Hon Hai Precision Industry	1
Eni Sa	1	Edf	1
Bayer Ag	1	Uniper	1
Nissan Motor Co. Ltd	1	Dow Inc	1
Fortum Oyj	1	A.P. Moller - Maersk	1
Iberdrola, S.A.	1	BP	1
Teck Resources Limited	1		

Recommendations for climate benchmarks: Reviews

*The report emphasizes the need for a **regular update** of these requirements, considering evolutions in the state of the market and the research in the field, and newly released IPCC reports.*

*These updates in the regulation will be key to the **success and consistency** of both climate benchmarks over time.*

*In light of the legislative text as agreed between co-legislators, the Commission shall **review the minimum standards** of the benchmarks by 31 December 2022, in order to ensure consistency with the **EU Taxonomy**.*

How to design SFDR Article 9 funds?

Does the fund have environmental objectives?

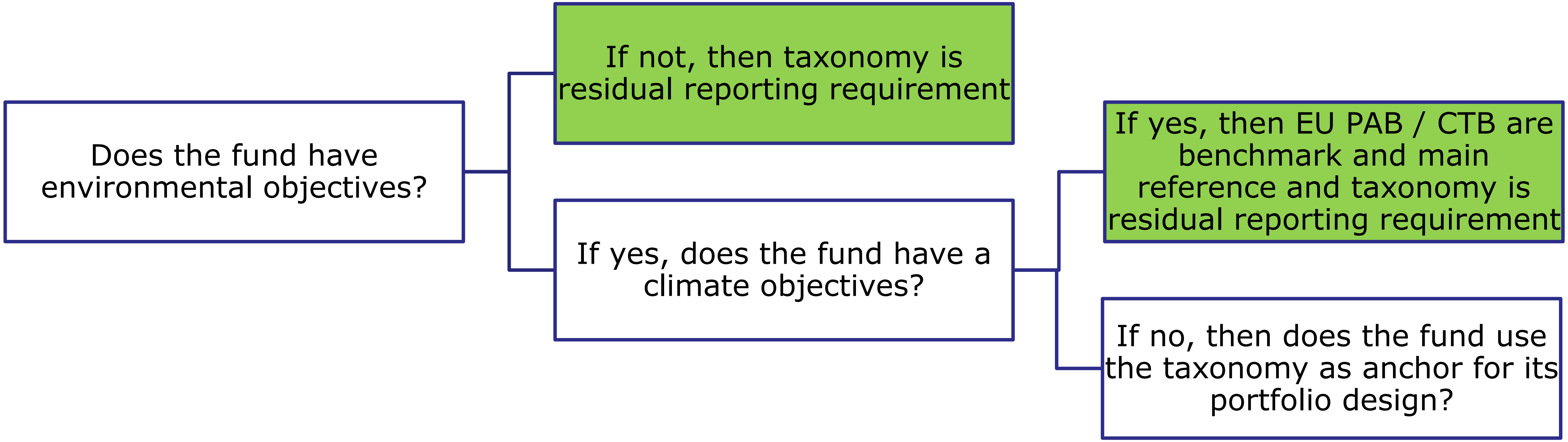
How to design SFDR Article 9 funds?

Does the fund have environmental objectives?

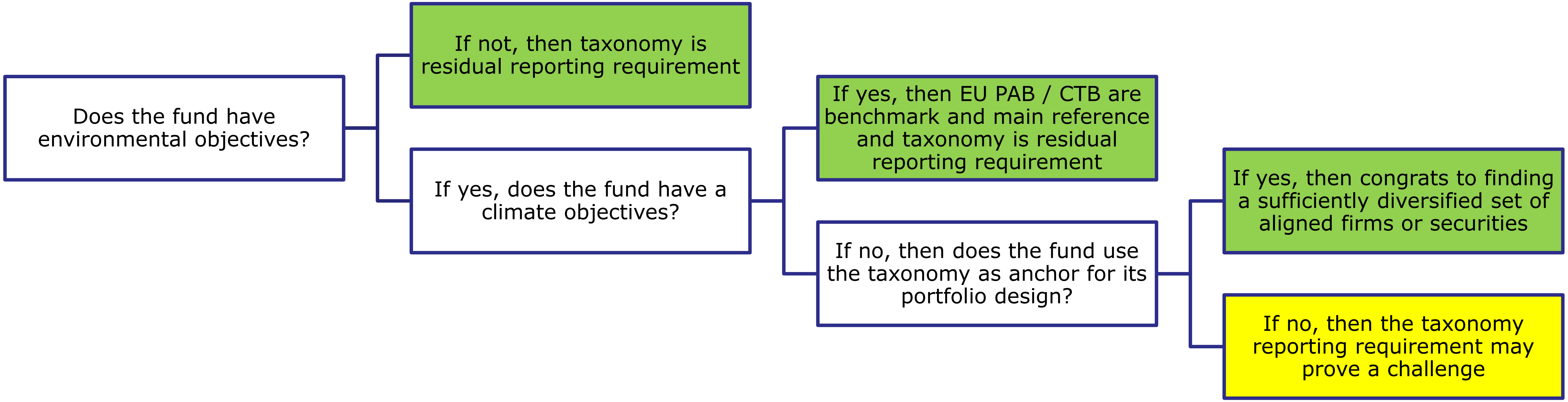
If not, then taxonomy is residual reporting requirement

If yes, does the fund have a climate objectives?

How to design SFDR Article 9 funds?



How to design SFDR Article 9 funds?



Taxonomy DNSH vs. SFDR DNSH (other than PAI)

"The ESAs had proposed in the [first] consultation paper that, because taxonomy-aligned investments would already be subject to a DNSH requirement under the Taxonomy Regulation, such investments would not need to be subject to the SFDR DNSH requirement.

https://www.simmons-simmons.com/en/publications/ckv6uumi61gkt0a71sjft7khz/esg-esas-publish-their-final-report-with-draft-rts-under-sfdr

Taxonomy DNSH vs. SFDR DNSH (other than PAI)

“The ESAs had proposed in the [first] consultation paper that, because taxonomy-aligned investments would already be subject to a DNSH requirement under the Taxonomy Regulation, such investments would not need to be subject to the SFDR DNSH requirement.

However, the ESAs have determined that they are not legally capable to make this derogation and therefore all sustainable investments (including taxonomy-aligned investments) will be subject to the SFDR DNSH requirement (including [but not equal to] consideration of the adverse impact indicators in Annex I SFDR RTS).

https://www.simmons-simmons.com/en/publications/ckv6uumi61gkt0a71sjft7khz/esg-esas-publish-their-final-report-with-draft-rts-under-sfdr

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Firms and data providers will therefore have to make adjustments to their processes for determining whether an investment is taxonomy-aligned.

As the SFDR DNSH requirement is more subjective than the prescriptive measures for the Taxonomy DNSH requirements under the technical screening criteria (**as under SFDR, it is up to firms to determine what would amount to "significant" harm**), firms may need to add the SFDR DNSH assessment as an overlay to any taxonomy-alignment assessment that they obtain from third party data vendors."

https://www.simmons-simmons.com/en/publications/ckv6uumi61gkt0a71sjft7khz/esg-esas-publish-their-final-report-with-draft-rts-under-sfdr

Taxonomy DNSH vs. SFDR DNSH (other than PAI)

AH: "The relevant ESA official(s) have clarified many times to me that SFDR DNSH is not intended to have any quantitative (exclusion) thresholds"

"The ESAs had proposed in the [first] consultation paper that, because taxonomy-aligned investments would already be subject to a DNSH requirement under the Taxonomy Regulation, such investments would not need to be subject to the SFDR DNSH requirement.

However, the ESAs have determined that they are not legally capable to make this derogation and therefore all sustainable investments (including taxonomy-aligned investments) will be subject to the SFDR DNSH requirement (including [but not equal to] consideration of the adverse impact indicators in Annex I SFDR RTS).

Firms and data providers will therefore have to make adjustments to their processes for determining whether an investment is taxonomy-aligned.

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https://www.simmons-simmons.com/en/publications/ckv6uumi61gkt0a71sjft7khz/esg-esas-publish-their-final-report-with-draft-rts-under-sfdr

Principal Adverse Impact (PAI) Statement

Level 1 approach

- Information about their policies on the identification and prioritisation of principal adverse sustainability impacts
- A description of the principal adverse sustainability impacts and of any actions in relation thereto taken or where relevant, planned
- Brief summaries of engagement policies
- A reference to their adherence to responsible business conduct codes and internationally recognised standards for due diligence and reporting and, where relevant, the degree of their alignment with the objectives of the Paris Agreement

ESAs proposed approach

- Prescriptive template
- Description of principal adverse sustainability impacts
- 64 ESG indicators in total
- 14 mandatory indicators (+2 from optional lists) for investee companies (as opposed to 32 mandatory indicators +2 from optional lists)
- 2 mandatory indicators for sovereigns and supranationals
- 2 mandatory indicators applicable to real estate
- Description of policies to identify and prioritise principal adverse sustainability impacts
- Description of actions to address principal adverse sustainability impacts (beside each indicator)
- Engagement policies
- References to international standards
- Historical comparison (5 years as opposed to 10)

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Principal Adverse Impact (PAI) Statement

Level 1 approach

- Information about their policies on the identification and prioritisation of principal adverse sustainability impacts
- A description of the principal adverse sustainability impacts and of any actions in relation thereto taken or where relevant, planned
- Brief summaries of engagement policies
- A reference to their adherence to responsible business conduct codes and internationally recognised standards for due diligence and reporting and, where relevant, the degree of their alignment with the objectives of the Paris Agreement

ESAs proposed approach

- Prescriptive template
- Description of principal adverse sustainability impacts
- 64 ESG indicators in total
- 14 mandatory indicators (+2 from optional lists) for investee companies (as opposed to 32 mandatory indicators +2 from optional lists)
- 2 mandatory indicators for sovereigns and supranationals
- 2 mandatory indicators applicable to real estate
- Description of policies to identify and prioritise principal adverse sustainability impacts
- Description of actions to address principal adverse sustainability impacts (beside each indicator)
- Engagement policies
- References to international standards
- Historical comparison (5 years as opposed to 10)

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Principal Adverse Impact (PAI) Statement

Level 1 approach	ESAs proposed approach
	• Prescriptive template • Description of principal adverse sustainability impacts • 64 ESG indicators in total • 14 mandatory indicators (+2 from optional lists) for investee companies (as opposed to 32 mandatory indicators +2 from optional lists) • 2 mandatory indicators for sovereigns and supranationals • 2 mandatory indicators applicable to real estate
• Information about their policies on the identification and prioritisation of principal adverse sustainability impacts	• Description of policies to identify and prioritise principal adverse sustainability impacts
• A description of the principal adverse sustainability impacts and of any actions in relation thereto taken or where relevant, planned	• Description of actions to address principal adverse sustainability impacts (beside each indicator)
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AH: "Quantitative KPIs should comply with improvement over time or explain otherwise."