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

absolutely sustainable.

Andreas G. F. Hoepner

Notes: The underlying EU TEG work is based on the excellent and tireless efforts of Claudia Bolli, Manuel Coeslier, Delphine Dirat, Steffen Hoerter, Jean-Christophe Nicaise Chateau, Sebastien Lieblich, Sara Lovisolo, Veronique Menou, Cesare Posti, Chantal Sourlas and Jean-Yves Wilmotte. Andreas also gratefully acknowledges scientific support on the EU TEG work from Theodor Cojoianu, Saphira Rekker, Fabiola Schneider and Theresa Spandel.

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****.***

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***

&

2. ***Total AUM*** *since Dec 23rd 2020 effective launch* ***> €30bn.***

&

3. *Dozens 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*
   - *Sufficient financial performance (i.e. return per unit of risk)*
   - *Sufficient GHG reduction performance (i.e. at least 7% p.a.)*

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

The European Commission calls for a climate-neutral Europe by 2050.

On 28 November 2018, the Commission presented its strategic long-term vision for a prosperous, modern, competitive and **climate-neutral economy by 2050**. The **Net Zero 2050 target was agreed** by all member states except Poland on December 12th 2019. Following the invitations by the European Parliament and the European Council, the Commission's vision for a climate-neutral future covers nearly all EU policies and is in line with the Paris Agreement objective to keep the global temperature increase to well below 2°C and **pursue efforts to keep it to 1.5°C**.

https://ec.europa.eu/clima/policies/strategies/2050_en

The situation as of now

'Even we aimed to settle at an uncomfortable +4 degree, we would have to achieve net climate-neutral by 2100.'

Joeri Rogelj, Lead Author of IPCC's 1.5 degree report (Phone Call, August 14th 2019):

Ireland becomes world's first country to divest from fossil fuels

Bill passed by parliament means more than €300m shares in coal, oil, peat and gas will be sold 'as soon as practicable'

▲ A message to the Irish government to divest from fossil fuels is spelled out in lights in front of the lower house of parliament. Photograph: Sasko Lazarov/Photocall Ireland/Trócaire/350.org

Source: Guardian (July 2018)

The Washington Post
Democracy Dies in Darkness

Europe

European Parliament declares climate emergency amid momentum for a Green Deal

A bucket wheel excavator in the Garzweiler opencast mine in Juechen, western Germany, on Thursday. (Ina Fassbender/AFP/Getty Images)

Source: Washington Post (November 2019)

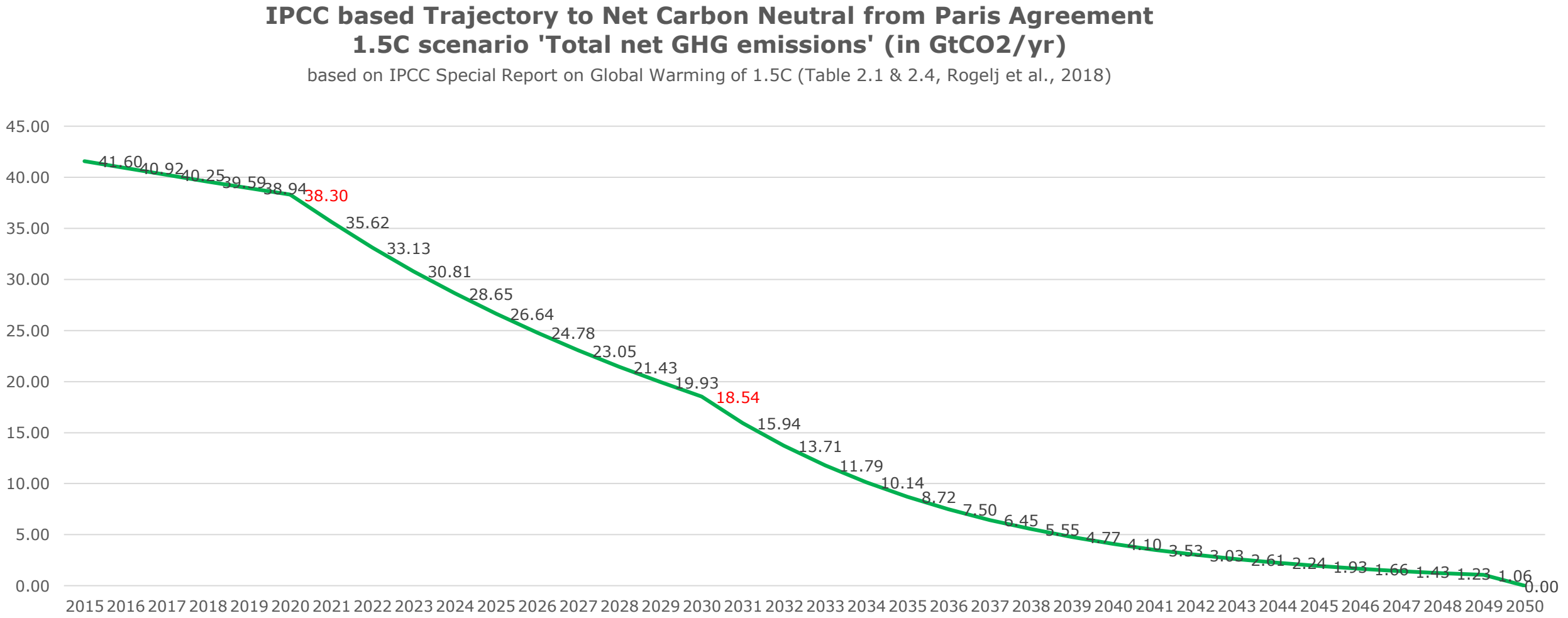
Next:

?

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

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



Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

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

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

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

Absolutely Sustainable Investing =

1. ***Reduce GHG emissions vs. Market Benchmark*** *in a given year*
   (Relatively more sustainable investing as practiced in 2019)
   +
2.
3.
4.
5.

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.

4.

5.

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.

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	✓

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

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	✓	✓ ✓

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

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	✓	✓ ✓	✓

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

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	✓	✓ ✓	✓	✓

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

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	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 >** **AH: 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	✓	✓ ✓	✓	✓	✓

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

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

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

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.

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

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

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

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

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

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****.***

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.

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'

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.

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

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.*

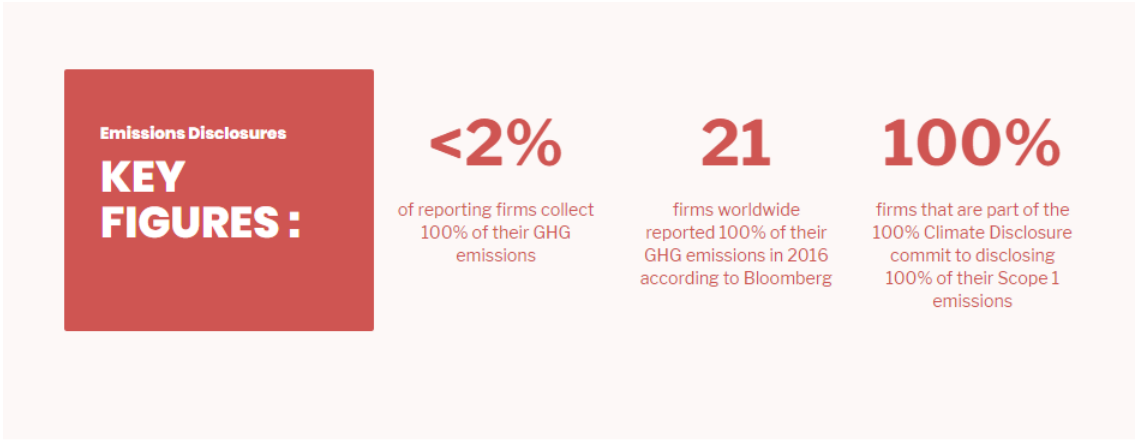
*These updates in the regulation will be key to the **success and consistency** of both climate benchmarks over time.*

*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**.*

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

The GHG Data Underreporting Challenge

Only 21 firms worldwide reported 100.0% of their Scope 1 GHG emissions in the view of the Mistra funded academic intiative www.climatedisclosure100.info. Only Bloomberg is publicly known to have corrected for years for this underreporting (i.e. ES074)



Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

GHG reporting to CDP Garcia Vega, Hoepner & Schiemann (2021, Carbon Data Quality)

Reported Global Emissions ≠ Sum of Breakdowns

Example 1 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%

GHG reporting to CDP Garcia Vega, Hoepner & Schiemann (2021, Carbon Data Quality)

Reported Global Emissions ≠ Sum of Breakdowns

Example 1 : 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 CO2e): 73,000,000

− Total Scope 1 Business Emissions (metric tons CO2e): 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%

GHG reporting to CDP Garcia Vega, Hoepner & Schiemann (2021, Carbon Data Quality)

Reported Global Emissions ≠ Sum of Breakdowns

Example 1 : 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 − Total Scope 1 GHG Emissions (metric tons CO2e): 73,441,900 = -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%

GHG reporting to CDP GHS (2021, Carbon Data Quality)

Reported Global Emissions ≠ Sum of Breakdowns

Example 1 : 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 − Total Scope 1 Region Emissions (metric tons CO2e): 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%

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

Notes: The underlying EU TEG work is based on the excellent and tireless efforts of Claudia Bolli, Manuel Coeslier, Delphine Dirat, Steffen Hoerter, Jean-Christophe Nicaise Chateau, Sebastien Lieblich, Sara Lovisolo, Veronique Menou, Cesare Posti, Chantal Sourlas and Jean-Yves Wilmotte. Andreas also gratefully acknowledges scientific support on the EU TEG work from Theodor Cojoianu, Saphira Rekker, Fabiola Schneider and Theresa Spandel.

The EU Taxonomy for Sustainable Activities:

forward looking incentives for green disclosure

Andreas G. F. Hoepner

Notes: The underlying EU TEG work is based on the excellent and tireless efforts of the taxonomy subgroup of the EU Technical Expert Group (TEG) for Sustainable Finance lead by Nathan Fabian. Prof. Hoepner is merely providing a humble financial data science perspective on the world leading content.

EU Taxonomy for Sustainable Activities: the metrics matter

1. *Forward Looking: **CapEx is key**!*

&

2. *By Asset Class: **CapEx & OpEx** in Fixed Income, **Revenue & CapEx** in Equities*

&

3. *Incentivising bundles of economic activities (i.e. corporations) to **disclose CapEx and Revenue by activity***

&

4. *Corporations self-reporting taxonomy compliance: independent, unbiased **Verification** needed*

&

5. *Non-reported Taxonomy compliance needs **Precautionary Principle** based estimation*

References (1/2): The EU Green Taxonomy

Slevin, D.; Hoerter, S; Humphreys, N.; Viñes Fiestas, H.; Lovisolo, S.; Wilmotte, J.-Y.; Latini, P.; Fettes, N.; Kidney, S.; Dixson-Decleve, S.; Claquin, T.; Blasco, J. L.; Kusterer, T.; Martínez Pérez, J.; Philipponnat, T.; Löffler, K.; Vitorino, E.; Pfaff, N.; Brockmann, K. L.; Redondo Pereira, P.; Coeslier, M.; Menou, V.; Aho, A.; Fabian, N.; Hartenberger, U.; Lacroix, M.; Baumgarts, M.; Bolli, C.; Philipova, E.; Pinto, M.; Bukowski, M.; Krimphoff, J.; Hoepner, A. G. F.; Masoni, P. & Kramer, B. (2020) 'Taxonomy: Final report of the Technical Expert Group on Sustainable Finance'. Brussels: European Commission.

The Technical Annex:
https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy-annexes_en.pdf

The Excel Tool:
https://ec.europa.eu/info/files/sustainable-finance-teg-taxonomy-tools_en

References (2/2): EU Climate Transition Investing

Hoepner, A. G. F.; Masoni, P.; Kramer, B.; Slevin, D.; Hoerter, S; Humphreys, N.; Viñes Fiestas, H.; Lovisolo, S.; Wilmotte, J.-Y.; Latini, P.; Fettes, N.; Kidney, S.; Claquin, T.; Blasco, J. L.; Dixson-Decleve, S.; Kusterer, T.; Martínez Pérez, J.; Suttor Sorel, L.; Löffler, K.; Vitorino, E.; Pfaff, N.; Brockmann, K. L.; Micilotta, F.; Coeslier, M.; Menou, V.; Aho, A.; Fabian, N.; Philipova, E.; Hartenberger, U.; Lacroix, M.; Baumgarts, M.; Bolli, C.; Pinto, M.; Bukowski, M. & Krimphoff, J. (2019b) 'Handbook of Climate Transition Benchmarks, Paris-Aligned Benchmark and Benchmarks' ESG Disclosure'. Brussels: European Commission.

Hoepner, A. G. F.; Masoni, P.; Kramer, B.; Slevin, D.; Hoerter, S; Ravanel, C.; Viñes Fiestas, H.; Lovisolo, S.; Wilmotte, J.-Y.; Latini, P.; Fettes, N.; Kidney, S.; Dixson-Decleve, S.; Claquin, T.; Blasco, J. L.; Kusterer, T.; Martínez Pérez, J.; Suttor Sorel, L.; Löffler, K.; Vitorino, E.; Pfaff, N.; Brockmann, K. L.; Micilotta, F.; Coeslier, M.; Menou, V.; Aho, A.; Fabian, N.; Philipova, E.; Hartenberger, U.; Lacroix, M.; Baumgarts, M.; Bolli, C.; Pinto, M.; Bukowski, M. & Krimphoff, J. (2019a) 'TEG Final Report on Climate Benchmarks and Benchmarks' ESG Disclosure'. Brussels: European Commission.

Both documents have appendices to look out for including

- guidance on climate tail risk measurement

- references to the underlying climate science

- Mappings of (i) NACE to (ii) BICS, GICS, ICB and TRBC

Final EU Regulation based on Hoepner et al. (2019a,b) available here: https://ec.europa.eu/finance/docs/level-2-measures/benchmarks-delegated-act-2020-4757_en.pdf

EU Taxonomy's incentive for Green CapEx (Slevin et al. 2020, p.29)

Figure 6: Example of company disclosures, from economic activity to company level

EU Taxonomy's incentive for Green CapEx (Slevin et al. 2020, p.30)

Table 4: Differences in calculation approaches for company climate change mitigation and adaptation

Financial metric	Climate change mitigation	Climate change adaptation
Turnover	Can be counted where economic activity meets Taxonomy technical screening criteria for substantial contribution to climate change mitigation and relevant DNSH criteria.	Turnover can be recognised only for activities enabling adaptation. Turnover cannot be recognised for adapted activities at this stage.
Capex & opex	Can be counted where costs incurred (capex and, if relevant, opex) are part of a plan to meet Taxonomy technical screening criteria for substantial contribution to climate change mitigation and relevant DNSH criteria.	Can be counted where costs incurred (capex and, if relevant, opex) are part of a plan to meet Taxonomy technical screening criteria for substantial contribution to climate change adaptation and relevant DNSH criteria.

EU Taxonomy for Sustainable Activities: the metrics matter

1

2

3

4

5

Forward Looking: ***CapEx is key****!*

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

EU Taxonomy's incentive for Green CapEx (Slevin et al. 2020, p.41)

Table 8: Comparing disclosure methodologies for equities and fixed income

EQUITIES	FIXED INCOME (Corporate)[42]
1. % of the fund that complies with the Taxonomy; breakdown by environmental objectives; and breakdown by activities (all weighted). Investors are required to disclose the % of the fund invested in 'transition' and 'enabling' activities. 2. % of the fund that is potentially Taxonomy-align breakdown by environmental objectives and activities. Commentary following recommendations. 3. (Until the Taxonomy is finished) % of the fund that responds to environmental objectives 3–6, and a breakdown by objective, including an explanation on the methodology and criteria used following recommendations.	Same as equities. In addition, when appropriate, breakdown by: 1. % invested in bonds compliant with EU Green Bond Standard (100% Taxonomy-aligned); 2. % of the fund invested in green bonds partially aligned (and % that is Taxonomy-aligned); 3. % of the fund invested in corporate bonds (and the % that is Taxonomy-aligned).
What to disclose: Turnover.[43] Some investors, however, might decide to build a forward-looking portfolio and disclose the same information based on capex.	**What to disclose:** Capex, and opex if relevant. For corporate bonds, turnover could be used in selected cases, as appropriate, where capex does not properly represent the investments made by the issuer. If both metrics are used (e.g. one for green bonds, one for corporate bonds), it needs to be specified and reported separately.

EU Taxonomy for Sustainable Activities: the metrics matter

1

2

3

4

5

Forward Looking: ***CapEx is key****!*

&

By Asset Class: ***CapEx & OpEx*** *in Fixed Income,* ***Revenue & CapEx*** *in Equities*

EU Taxonomy's incentive for Green CapEx (Slevin et al. 2020, p.27)

3.2 COMPANY DISCLOSURE

3.2.1 Summary of requirements

The final Taxonomy Regulation introduces a new disclosure requirement for companies already required to provide a non-financial statement under the Non-Financial Reporting Directive.[29] National implementation varies, but NFRD covers, at a minimum, large public-interest companies with more than 500 employees, including listed companies, banks and insurance companies.

The requirements differ between financial and non-financial companies. Some financial companies will also be subject to the Financial Market Participant disclosure requirement (See: Financial market participants).

All companies subject to this requirement will include a description of how, and to what extent, their activities are associated with Taxonomy-aligned activities. For non-financial companies, the disclosure must include:

- the proportion of turnover aligned with the Taxonomy; and
- capex and, if relevant, opex aligned with the Taxonomy.

This disclosure should be made as part of the non-financial statement, which may be located in annual reporting or in a dedicated sustainability report.

The Commission developed new climate reporting guidelines for companies in 2019. A summary of the guidelines is also available. These guidelines already recommended that companies disclose their taxonomy-alignment.

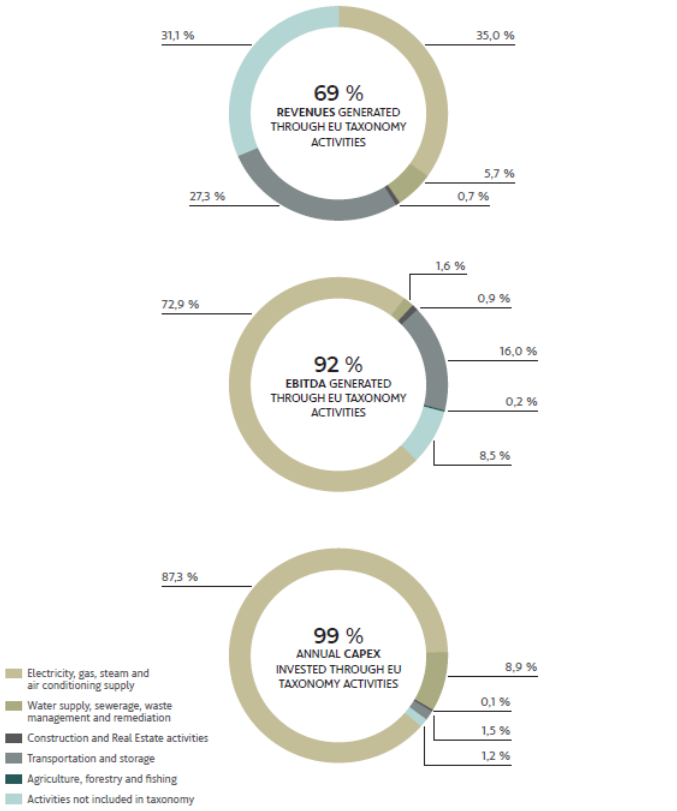
By 1 June, 2021, the European Commission will adopt a delegated act specifying how these obligations should be applied in practice. The delegated act will consider the differences between non-financial and financial companies.

EU Taxonomy for Sustainable Activities: the metrics matter

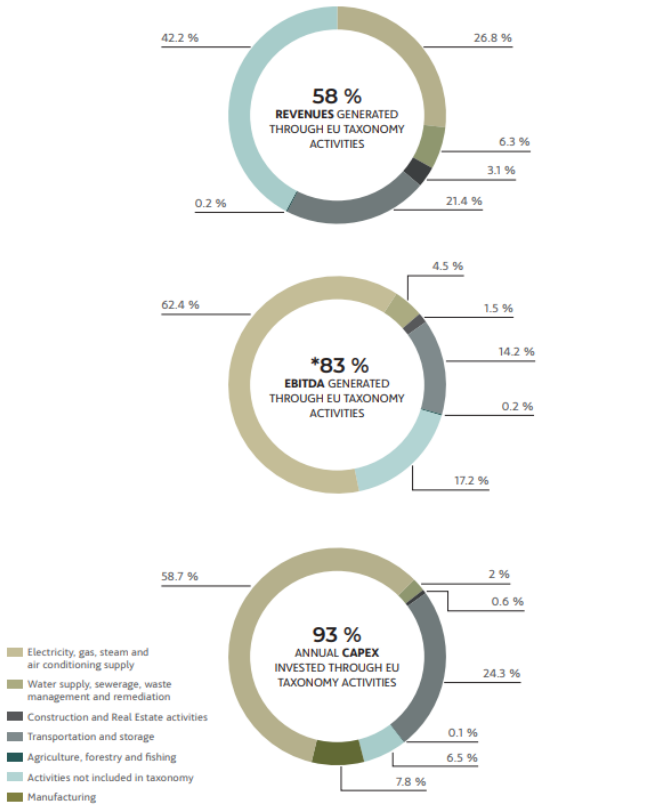
1. *Forward Looking:* ***CapEx is key****!*
2. *&*
3. *By Asset Class:* ***CapEx & OpEx*** *in Fixed Income,* ***Revenue & CapEx*** *in Equities*
4. *&*
5. *Incentivising bundles of economic activities (i.e. corporations) to* ***disclose CapEx and Revenue by activity***

ACCIONA's EU Green Taxonomy Report before (left) and after (right) independent, solicited verification

Once the criteria, metrics and thresholds of each subcategory were analyzed, ACCIONA's activities were aligned with the Taxonomy in terms of global revenue, EBITDA, and annual CAPEX using 2018 figures:



Once the criteria, metrics and thresholds of each subcategory were analyzed, ACCIONA's activities were aligned with the Taxonomy in terms of global revenue, EBITDA, and annual CAPEX using 2019 figures verified by independent auditors:



*The EBITDA figure is not verified since the EU Technical Expert Group on Sustainable Finance does not contemplate this variable amongst those that can be used for calculating percentages of activity that meet the requirements of the taxonomy.

Hoepner (2020) Climate Transition (i.e. Paris-Aligned) Investing: absolutely sustainable. UBA Sep 20th 2021

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE

EU Taxonomy for Sustainable Activities: the metrics matter

1. *Forward Looking: **CapEx is key**!*

   &

2. *By Asset Class: **CapEx & OpEx** in Fixed Income, **Revenue & CapEx** in Equities*

   &

3. *Incentivising bundles of economic activities (i.e. corporations) to **disclose CapEx and Revenue by activity***

   &

4. *Corporations self-reporting taxonomy compliance: independent, unbiased **Verification** needed*

5.

EU Climate Transition Benchmarks Law (2020/4757): Article 12.2

2. Administrators of EU Paris-aligned Benchmarks shall exclude from those benchmarks any companies that are found or estimated by them or by external data providers to significantly harm one or more of the environmental objectives referred to in Article 9 of Regulation (EU) 2020/852 of the European Parliament and of the Council[10], in accordance with the rules on estimations laid down in Article 13(2) of this Regulation.

3. Administrators of EU Paris-aligned Benchmarks shall disclose in their benchmark methodology any additional exclusion criteria they use and which are based on climate-related or other environmental, social and governance (ESG) factors.

CHAPTER III
TRANSPARENCY AND ACCURACY

Article 13

Source: European Commission 2020/4757 - 17/07/2020

EU Climate Transition Benchmarks Law (2020/4757): Article 13.2

2. For the purposes of Article 12(2), administrators of EU Paris-aligned Benchmarks shall comply with the following requirements:

(a) administrators 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 and research methodology that they have used, and the main assumptions and precautionary principles underlying those estimations;

(ii) the external data sets used in the estimation;

(b) administrators of EU Paris-aligned Benchmarks that use estimations that are based on data provided by an external data provider shall formalise, document and make public all of the following information:

(i) the name and contact details of the data provider;

(ii) the methodology used and the main assumptions and precautionary principles, where available;

(iii) a hyperlink to the website of the data provider, and to the relevant methodology used, where available.

EU Taxonomy for Sustainable Activities: the metrics matter

1. *Forward Looking: **CapEx is key**!*

&

2. *By Asset Class: **CapEx & OpEx** in Fixed Income, **Revenue & CapEx** in Equities*

&

3. *Incentivising bundles of economic activities (i.e. corporations) to **disclose CapEx and Revenue by activity***

&

4. *Corporations self-reporting taxonomy compliance: independent, unbiased **Verification** needed*

&

5. *Non-reported Taxonomy compliance needs **Precautionary Principle** based estimation*

The EU Taxonomy for Sustainable Activities:

forward looking incentives for green disclosure

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

Andreas G. F. Hoepner

Notes: The underlying EU TEG work is based on the excellent and tireless efforts of the taxonomy subgroup of the EU Technical Expert Group (TEG) for Sustainable Finance lead by Nathan Fabian. Prof. Hoepner is merely providing a humble financial data science perspective on the world leading content.

EU TECHNICAL EXPERT GROUP ON SUSTAINABLE FINANCE