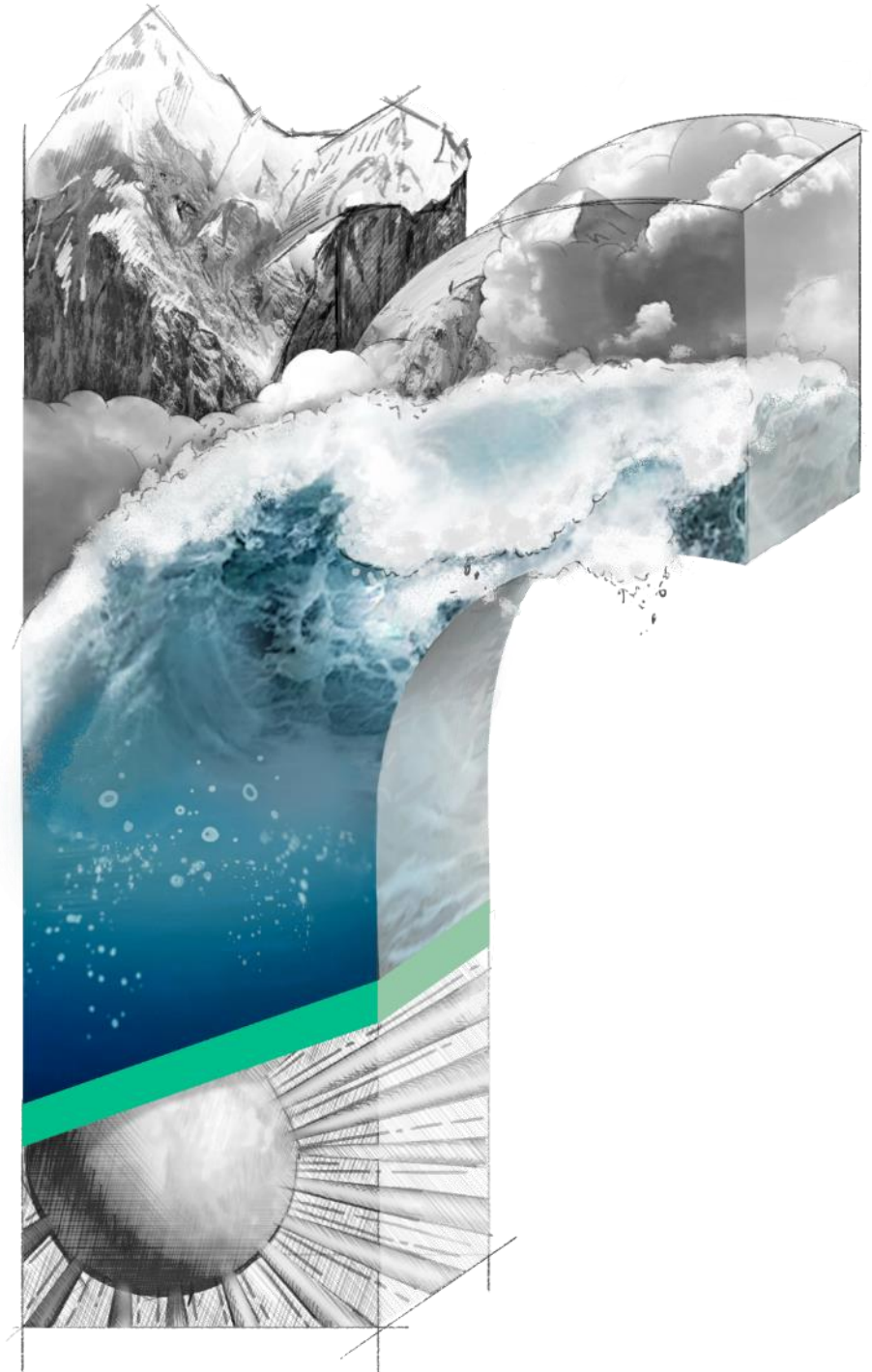


Dealing with Uncertainty

Hannah Helmke
Marcela Scarpellini

right. based on science

right. based on science

Founded in 2016 in Frankfurt (GER) by Hannah Helmke and Dr. Sebastian Müller

Data Provider and Consultancy

Mission: **Increase transparency** on climate-related risks and opportunity within the market

Team comprising **10 people** with various professional backgrounds

Listed on #100 **Watchlist 2019** by Business Punk

Next milestone: XDC Model **open source**

EUROPÄISCHE UNION:
Investition in Ihre Zukunft
Europäischer Fonds für regionale Entwicklung

esa

right.

Selected clients and partner

Frankfurt School of Finance & Management

German Excellence. Global Relevance.

GLS Bank

das macht Sinn

provadis Hochschule

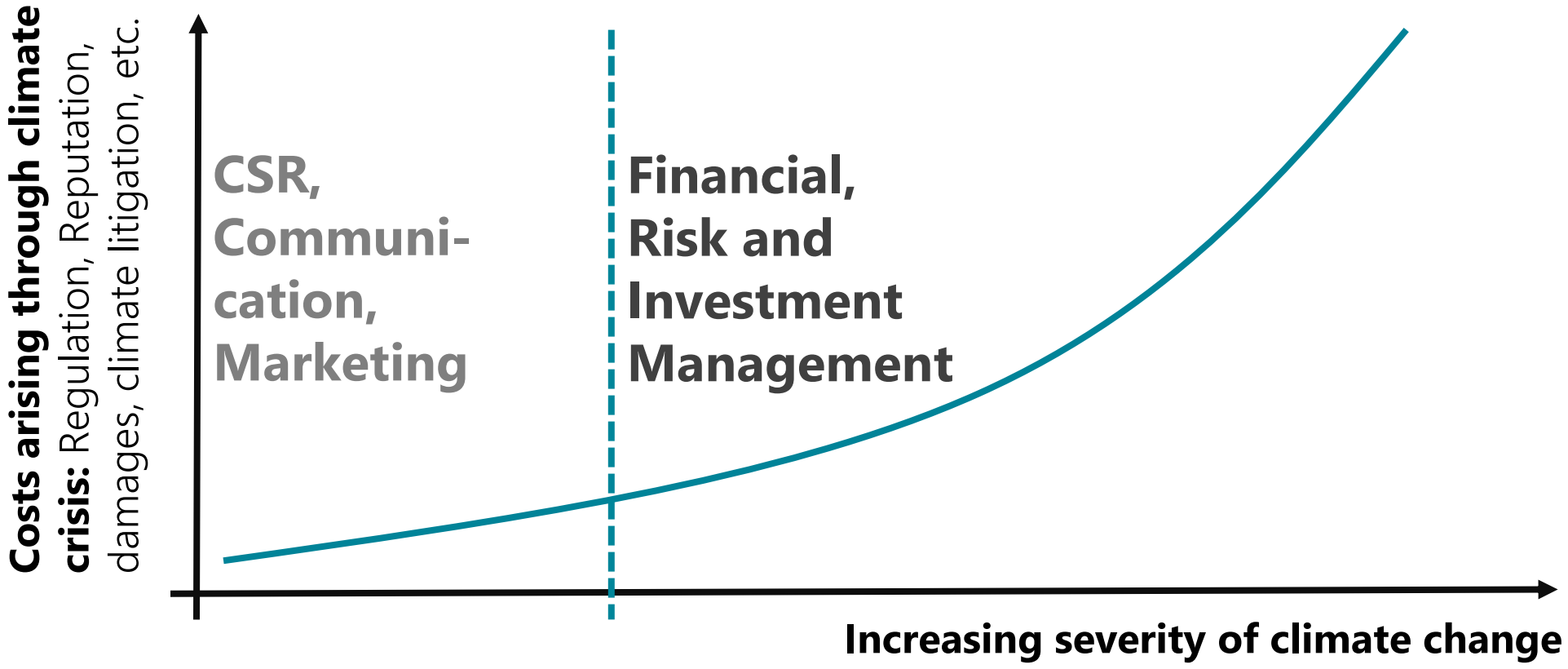
d-fine

„Frau Helmke und ich saßen einmal gemeinsam als Panelists auf der Bühne und ich lernte right. als ein Unternehmen kennen, welches einen interessanten Ansatz zum Brückenschlag zwischen Klimawissenschaft und Wirtschaft verfolgt.“

Prof. Dr. Dr. h.c. Hans Joachim Schellnhuber

Market

From Sustainability to X°C-Compatibility

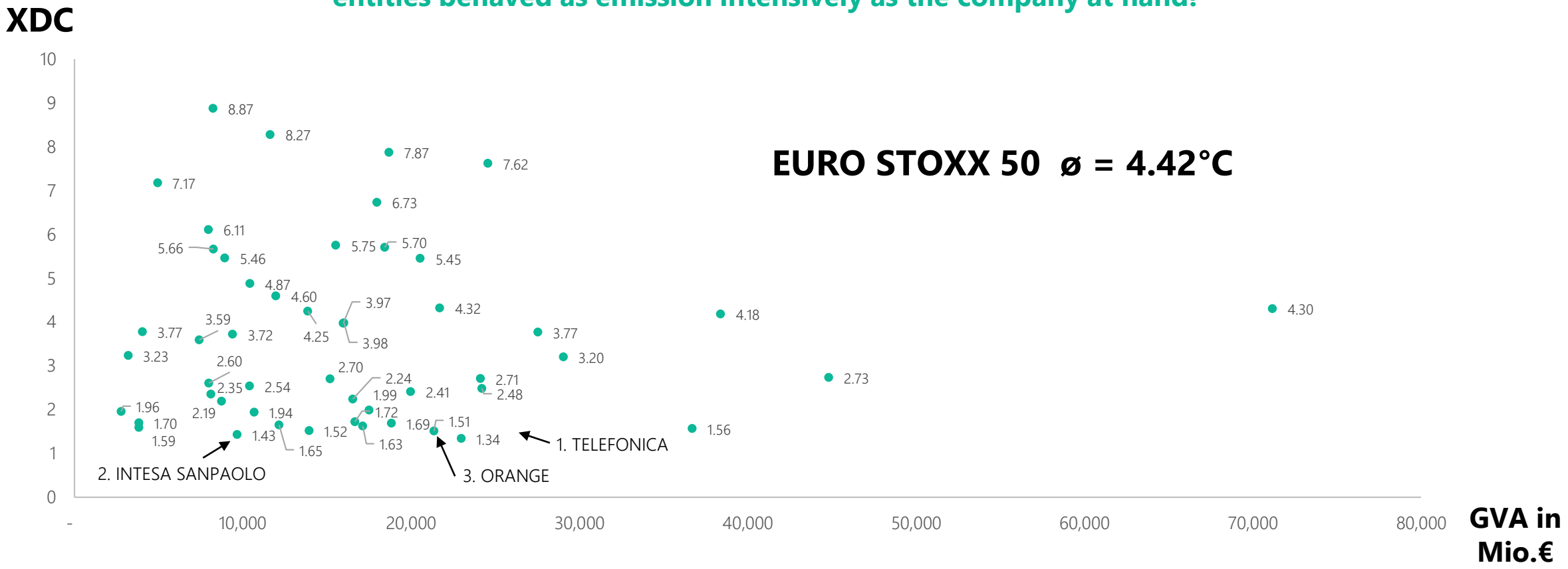


right. works on the hypotheses that as soon as costs arising trough the climate crisis pass the threshold to financial visibility, science-based climate metrics will be the best available method for managing climate-related risks.

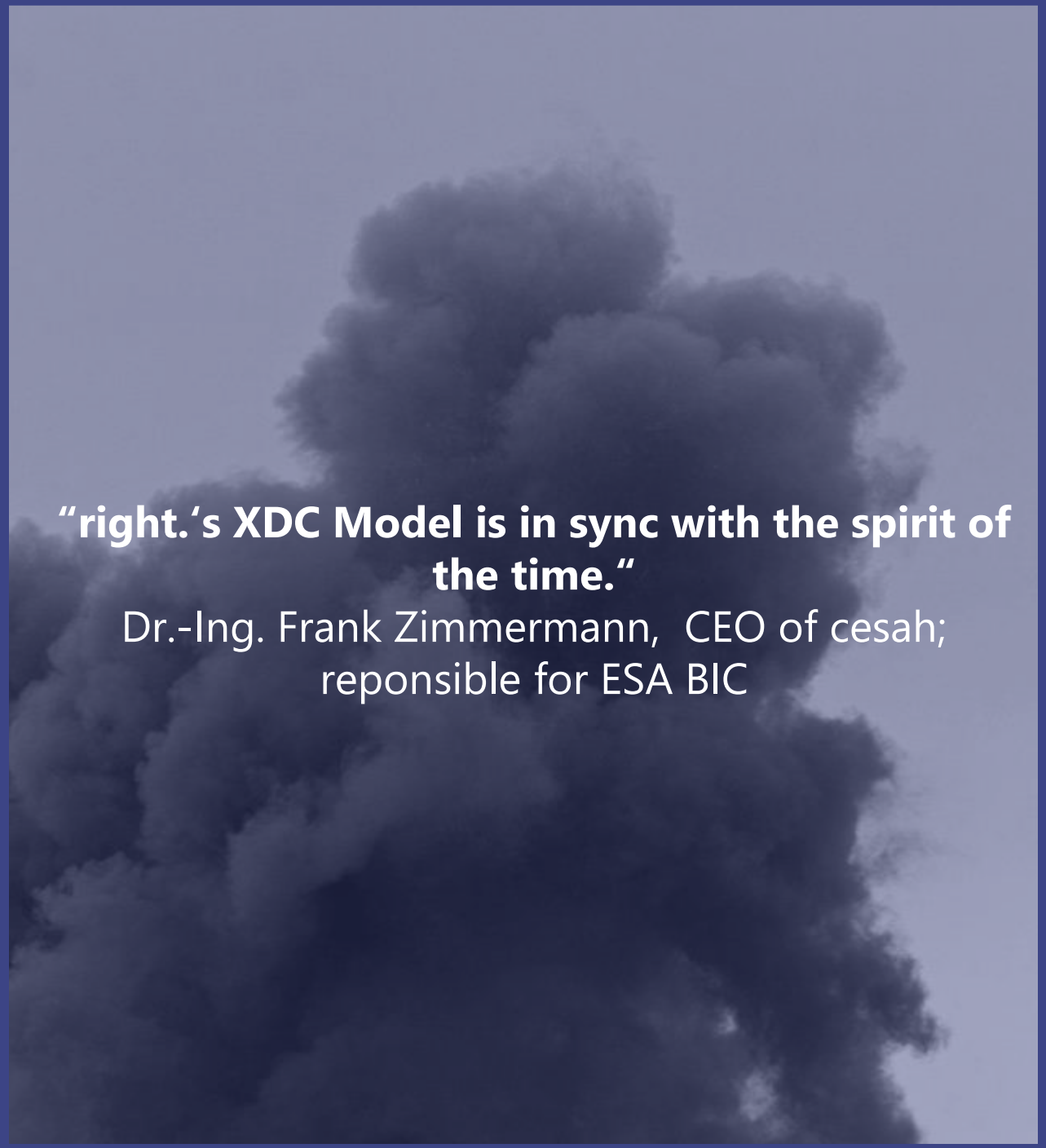
EURO STOXX 50

Standard XDC[1] 2016

X-Degree Compatibility ("XDC"): How many degrees the world would warm by 2050 if all economic entities behaved as emission intensively as the company at hand?



[1] Standard XDC for the base year 2016 with standard assumptions for a Business As Usual scenario: The Standard XDC is calculated with 3.2 % global gross value added growth until 2050 (Source: IEA and IMF). The ratio between the emissions and the gross value added stays constant under the Business As Usual scenario with a growth rate of 3.2 % until 2050. Source emissions data: Engaged Tracking; Source finance data: FactSet Research Systems.



“right.’s XDC Model is in sync with the spirit of the time.“

Dr.-Ing. Frank Zimmermann, CEO of cesah; reponsible for ESA BIC

XDC Model

The X-Degree Compatibility ("XDC") is a science-based climate metric, which serves to measure climate risk as an independent risk category. The XDC quantifies, for an individual economic unit e.g. a company or a project, by how many °C the earth would warm up by 2050 if all economic units were as emission-intensive as the unit under consideration.

The XDC is calculated by using our XDC Model, which can generate several metrics for the real economy, as well as for the financial sector. It can also be useful for political organizations and academic institutions. And can also be used for calculating specific reduction pathways’ alignment with the a 1.5°C or 2°C target, for a specific company.

If, for example, a company has an XDC of 6.08°, this means that the earth would warm up by 6.08°C if all companies were as emission-intensive as the company under consideration.

XDC Model

Overall data sources

Potsdam Institute for Climate Impact Research*

Intergovernmental Panel on Climate Change

National Oceanic and Atmospheric Administration

Self-reported data by companies

Emissions data provider, e.g. Engaged Tracking

ILO

Destatis

OECD

World Bank

FactSet Research Systems

ETP, IEA 2016

Self-reported data

Climate Science Sources

Emission Data Sources

Data Sources for Economic Data

*Cooperation starting Q1 2019

XDC Model

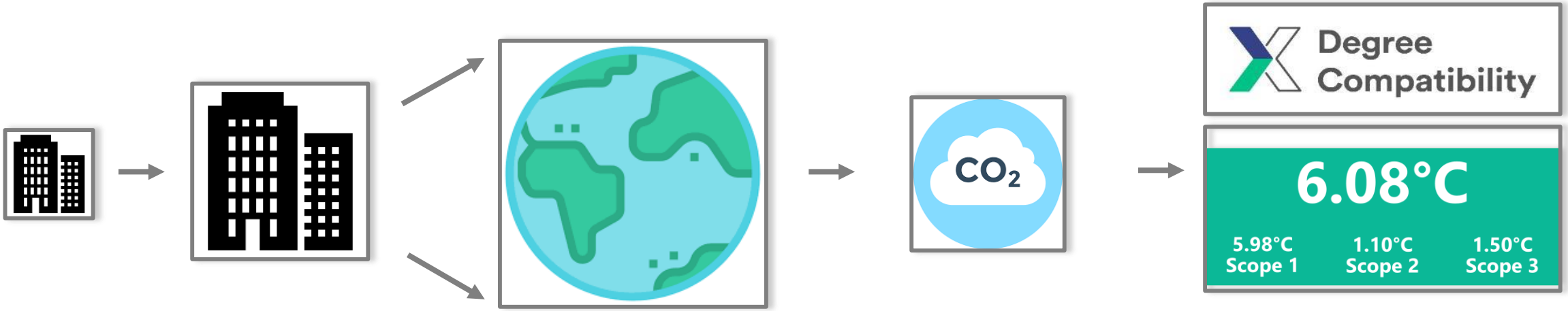
Degree Compatibility

Standard XDC: Comparison

Scenario-based XDC: Strategy

XDC Model

The logic behind the XDC Model



1. How many emissions does a company need between today and 2050 in order to generate 1 m € of Gross Value Added?

2. What amount of emissions would reach the atmosphere if every company needed as many emissions between today and 2050 to generate 1 m € of Gross Value Added as the company at hand?

3. What level of global warming would result from that amount of emissions reaching the atmosphere?

XDC Model

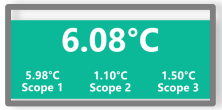
The logic behind the XDC Model

2016 | **2016 - 2050** | **2016 – 2050** | **2016 - 2050**

3.2 % p.a.

2016 Standard XDC

3.2 % p.a.



1	2	3	4	5	6
Company specific	Company specific	Upscaling Global EEI	Global GHGs	Climate effective-ness	XDC
GHG Emissions **EBITA + Per.Cos** = Economic Emission Intensity (EEI)	**Scenario BAU:** Accumulated EEI	Upscaling to global EEI to achieve global GHG CO2e	CO2e in the atmosphere	Impact of global GHG on global warming	Company contribution to global warming

XDC Model

Company specific "Economic Emissions Intensity"

The calculation of the company specific "Economic Emissions Intensity"

1 — 2016

Emissions (tCO2e) / Total GVA

GHG Emission	GHG Scope 1, 2, 3
Total GVA	EBITDA + Personnel costs

2 — 2017 - 2050

∑ tCO2e company / ∑ GVA company

GHG Growth	3.2 % p.a.
GVA Growth	3.2 % p.a.

2016 - 2050

tCO2e / 1m€ GVA

Economic Emission Intensity (EEI)

How many emissions does a company need to generate 1 m€ GVA

XDC Model

Upscaling to a global level

From a company specific "Economic Emissions Intensity" to a "Global amount of CO2e"

2016

Global GVA

Global GVA | Worldbank

3

2017 - 2050

∑ GVA m€ of the world

GVA Growth | 3.2[1] % p.a.

[1] IMF (2015) World Economic Outlook Database; IEA (2015b) World Energy Outlook

4

2016 - 2050

tCO2e / 1m€ GVA * ∑ GVA m€ of the world

Global amount of tCO2e

How much GHG would be in the atmosphere by 2050, if everybody would work as emission intensively as me?

XDC Model

From global GHG to CO2e to the Standard XDC

Standard XDC with Scope 1, 2 and 3 values

2016 - 2050

Global amount of tCO2e

5

Degree Compatibility

Climate Effective-ness Formula

Impact of global GHG on global average temperature?

6

Standard XDC Scope 1, 2 and 3

6.08°C

5.98°C	1.10°C	1.50°C
Scope 1	Scope 2	Scope 3

XDC Model

Overview for the entire process

1 2 Company specific Economic Emission Intensity

2016

Emissions (tCO2e) / Total GVA

X %

2016 - 2050

∑ tCO2e company / ∑ GVA company

Economic Emission Intensity (EEI) for 2016 - 2050

tCO2e / 1m€ GVA

3 4 Upscaling to a global level

2016

Global GVA m€

X %

2016 - 2050

∑ GVA m€ of the world

tCO2e / 1m€ GVA * ∑ GVA m€ of the world

Global amount of tCO2e

5 6 Standard XDC with Scope 1, 2 and 3 values

2016 - 2050

Global amount of tCO2e

Climate effectiveness formula

Degree Compatibility

6.08°C

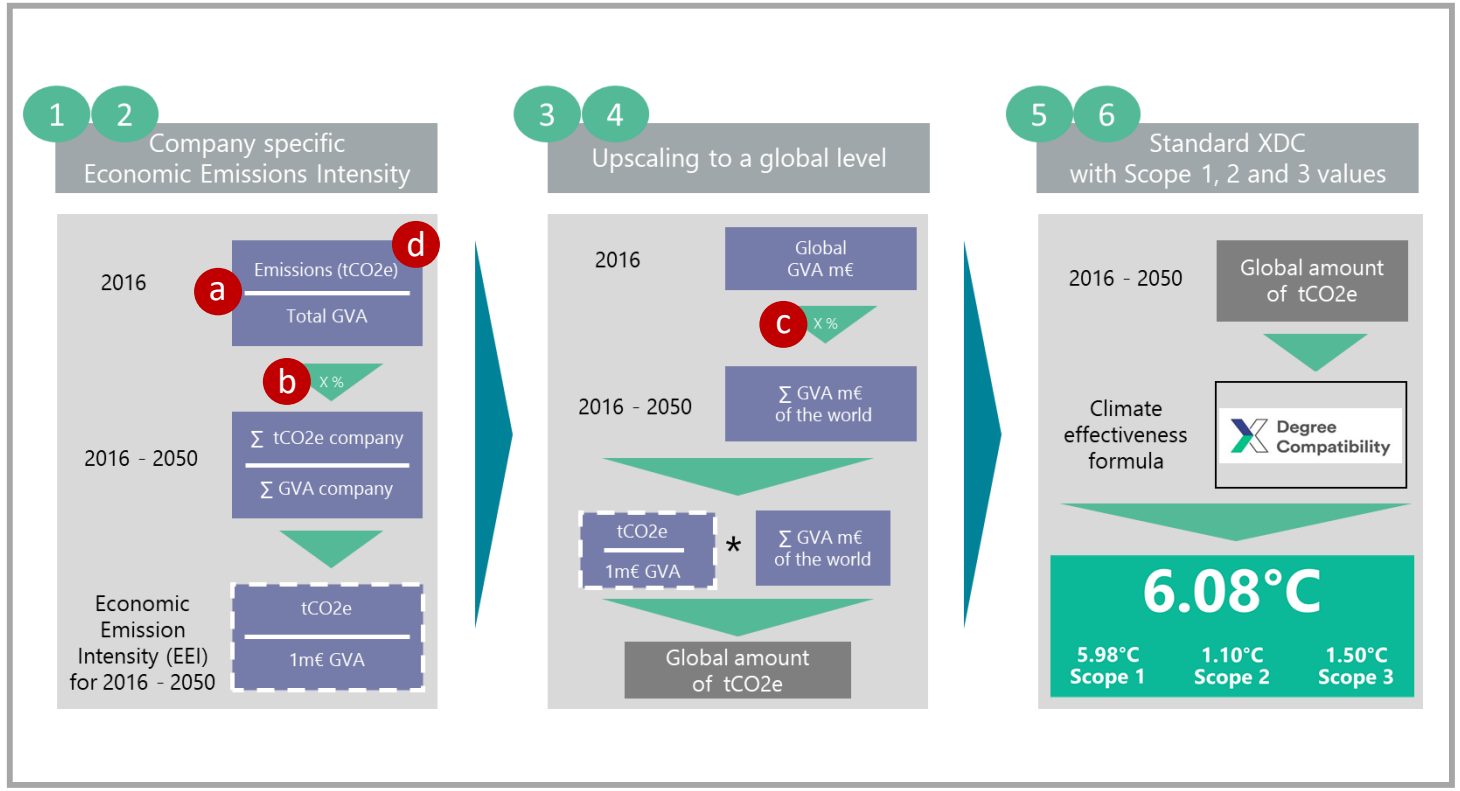
5.98°C Scope 1	1.10°C Scope 2	1.50°C Scope 3

XDC Model

Assumptions: Standard XDC

2016 - Standard XDC[1]

a	GVA- and Emission data	**Total Company**
b	Standard company Emission- and GVA growth	**3.2 %**
c	Global economical growth assumptions	**3.2[2] %**
d	GHG Scope 1 consideration GHG Scope 2 consideration GHG Scope 3 consideration	**100%** **50%** **50%**



[1] Standard assumptions is a Business as Usual scenario: constant ratio of emissions and gross value added from the base year until 2050; 100 % consideration Scope 1 XDC, 50 % consideration Scope 2 XDC, 50 % consideration Scope 3 XDC
[2] IMF (2015) World Economic Outlook Database; IEA (2015b) World Energy Outlook

XDC webApp

www.xdegreecompatible.de/en

Degree Compatibility

Free | Premium licence | DE | EN | ? | Login

By how many °C would the earth warm up to by 2050 if every company were as emission-intensive as...

... Apple

according to the Boston Consulting Group: The Most Innovative Companies, 2018?

1.49°C*

XDC webApp

Test the XDC webApp with this information

Test data for a company from the NACE sectors: **Production of chemical products**

2.000.000.000 EUR
EBITDA

1.000.000.000 EUR
Personal Costs

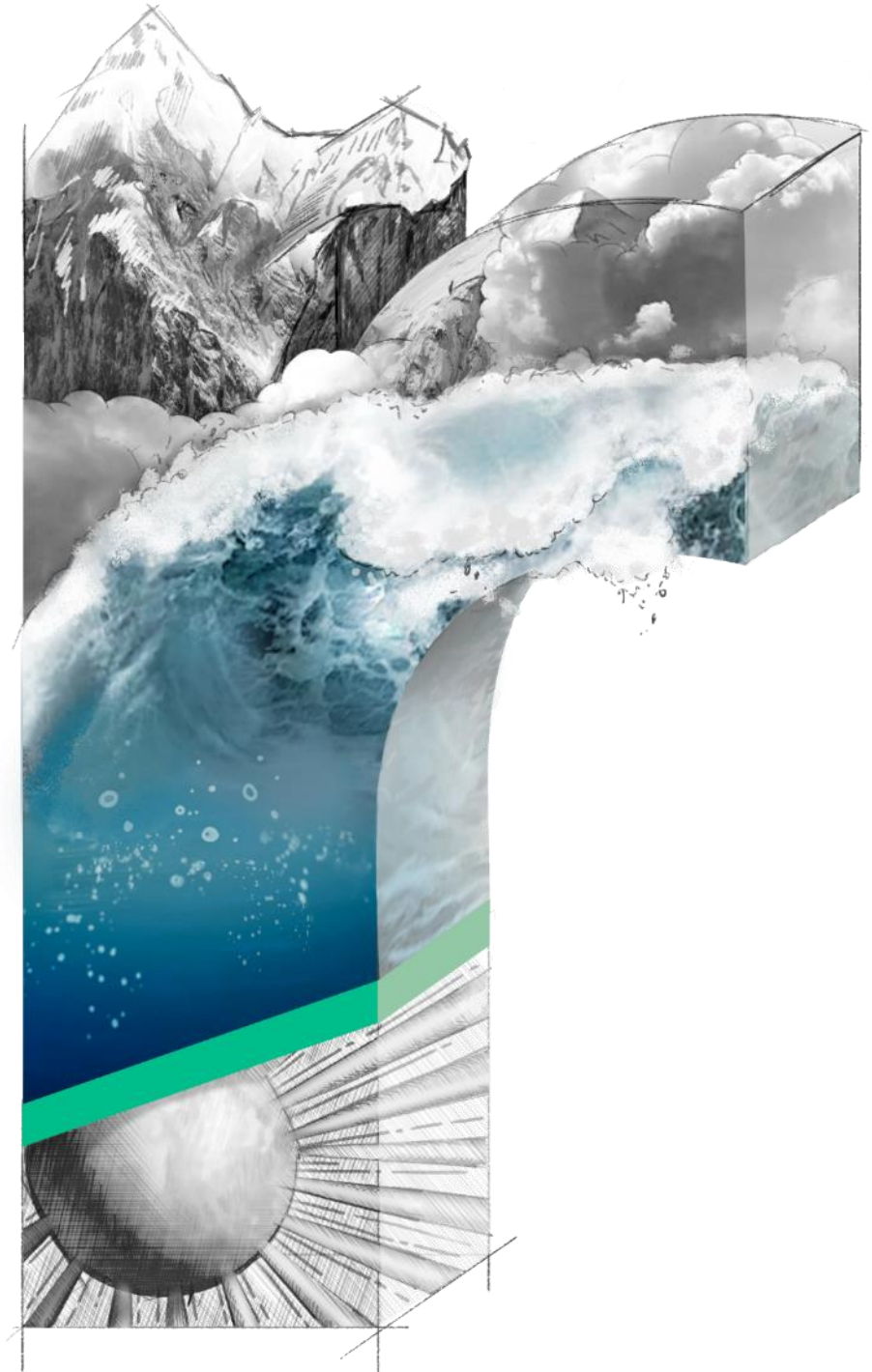
8.000.000.000 EUR
Sales

4.000.000 t CO2e
Scope 1

200.000 t CO2e
Scope 2

1.600.000 t CO2e
Scope 3

Numbers are illustrative



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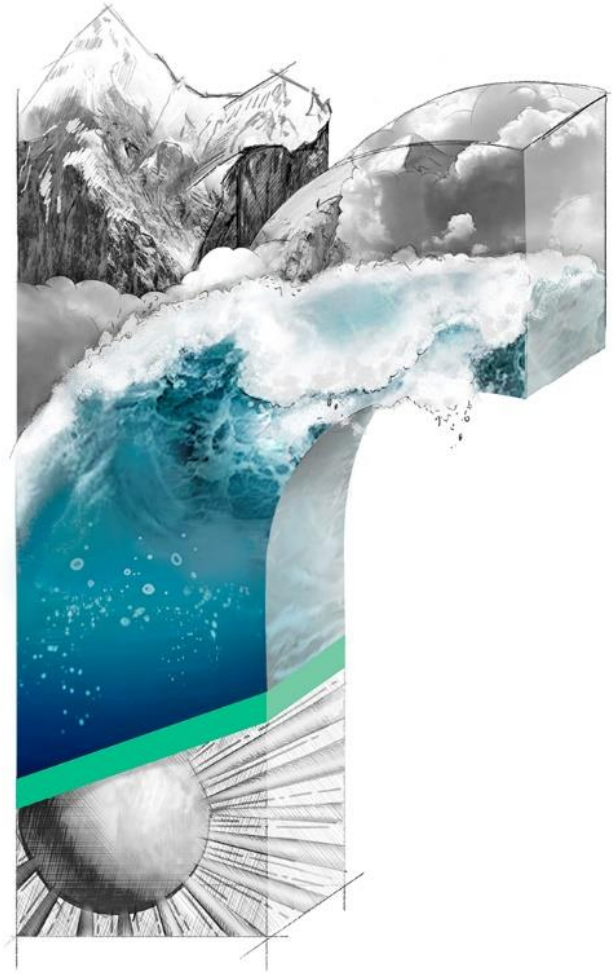

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