

Vorlesungsreihe
Ökonomische Grundlagen der Nachhaltigkeit

Sustainable Finance

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IMD Lausanne
28 March 2023



Öffentliche Vorlesungen
Frühjahrssemester 2023

Sustainable Finance

Definitions

Sustainable finance refers to the process of taking **environmental, social and governance (ESG) considerations** into account when making investment decisions in the financial sector, leading to more long-term investments in sustainable economic activities and projects.

Environmental considerations might include climate change mitigation and adaptation, as well as the environment more broadly, for instance the preservation of biodiversity, pollution prevention and the circular economy.

ESG

The S and the G

Social considerations could refer to issues of inequality, inclusiveness, labour relations, investment in human capital and communities, as well as human rights issues.

The **governance** of public and private institutions –including management structures, employee relations and executive remuneration –plays a fundamental role in ensuring the inclusion of social and environmental considerations in the decision-making process.

https://finance.ec.europa.eu/sustainable-finance/overview-sustainable-finance_en

ESG Criteria



Ethics, Morals, Politics, Religion, Values

Holy See: Faith and Science: An Appeal for COP26

Faith leaders and leading scientists joined at the Vatican to raise ambition ahead of COP26. (www.gov.uk, Oct 2021)

[nature](#) > [nature climate change](#) > [comment](#) > [article](#)

Comment | [Published: 03 January 2022](#)

The value of values in climate science

Opinion | Why climate change is an ethical problem

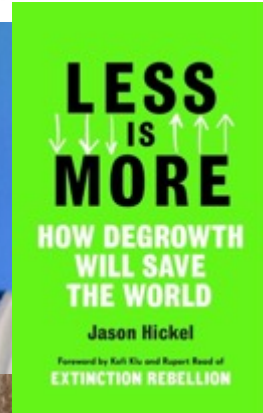
The Washington Post

Democracy Dies in Darkness

TIME

CLIMATE • POLICY

Climate Change is a Moral Crisis. But Our Political System Doesn't Treat It That Way



Forbes

On Fox, Donald Trump Calls Climate Change A 'Hoax': 'In The 1920's They Were Talking About Global Freezing'

(March 2022)

At least 149 GOP members of Congress STILL reject the reality of climate science

Published on December 15th, 2022



Intergovernmental Panel on Climate Change

Geneva – Established by WMO and UNEP in 1988

The background of the slide is a blue-tinted photograph of a mountain landscape at dusk or dawn. The sky is a deep blue with some light streaks, possibly from a satellite or a light trail. The mountains are silhouetted against the sky, and there's a misty or foggy atmosphere. The text is overlaid on this background.

AR6 Synthesis Report: Climate Change 2023

The IPCC finalized the Synthesis Report for the Sixth Assessment Report during the Panel's 58th Session held in Interlaken, Switzerland from 13 - 19 March 2023.

Headline Statements – AR6, WG III

Excerpts

C.1 [...] Without a strengthening of policies beyond those that are implemented by the end of 2020, GHG emissions are projected to rise beyond 2025, leading to a median global warming of 3.2 [2.2 to 3.5] °C by 2100 (*medium confidence*).

E.4 [...] Many regulatory and economic instruments have already been deployed successfully. Instrument design can help address equity and other objectives. These instruments could support deep emissions reductions and stimulate innovation if scaled up and applied more widely (*high confidence*).

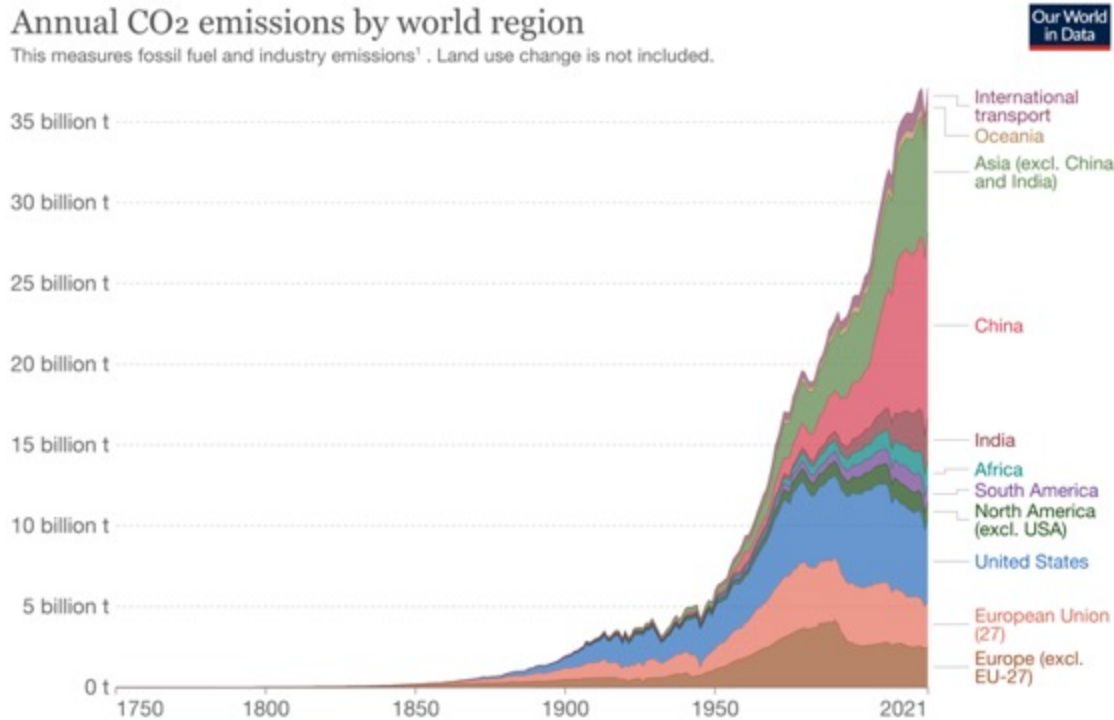
Economics



Annual CO₂ Emissions

Annual CO₂ emissions by world region

This measures fossil fuel and industry emissions¹. Land use change is not included.

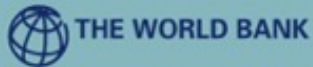


Source: Our World in Data based on the Global Carbon Project (2022) OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

<https://ourworldindata.org/grapher/annual-co-emissions-by-region>

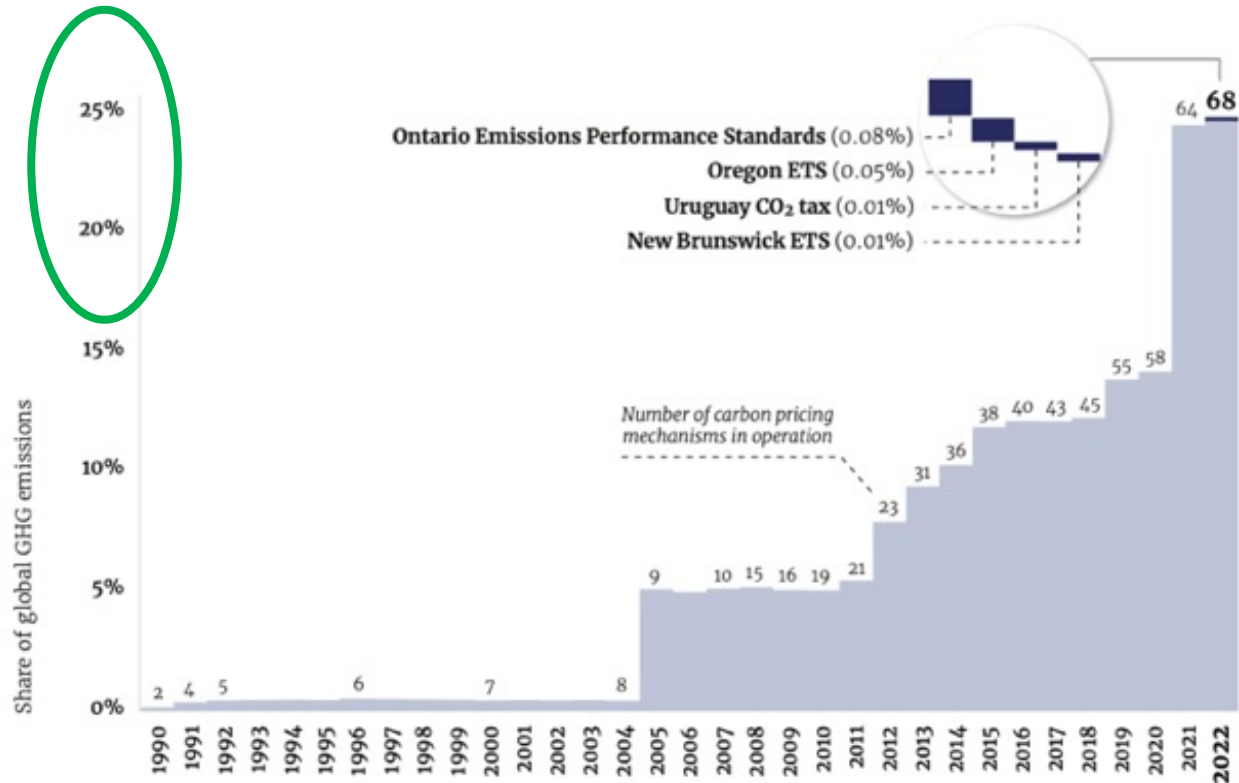
1. Fossil emissions: Fossil emissions measure the quantity of carbon dioxide (CO₂) emitted from the burning of fossil fuels, and directly from industrial processes such as cement and steel production. Fossil CO₂ includes emissions from coal, oil, gas, flaring, cement, steel, and other industrial processes. Fossil emissions do not include land use change, deforestation, soils, or vegetation.

State and Trends of Carbon Pricing 2022



<https://openknowledge.worldbank.org/handle/10986/37455>

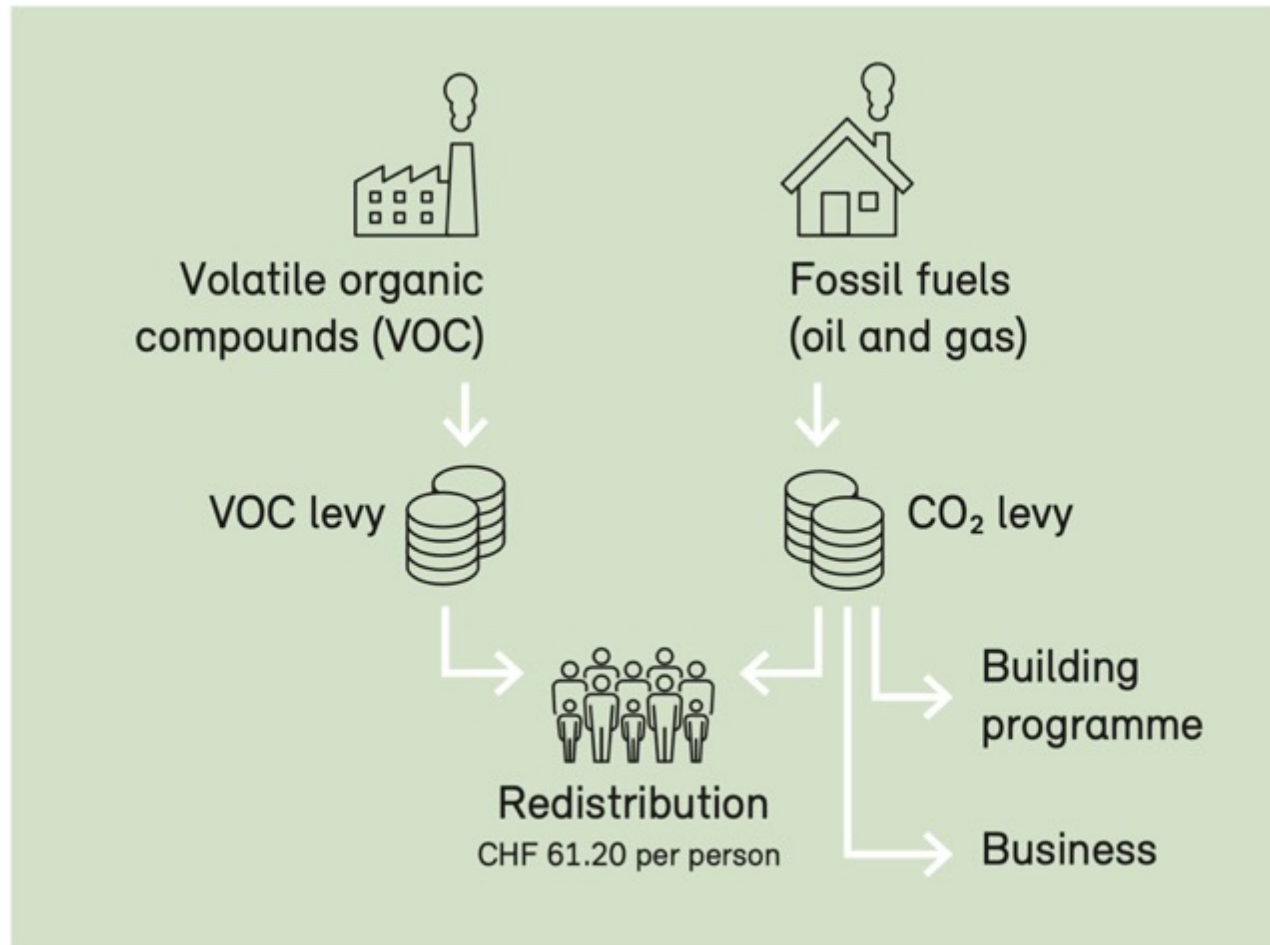
Carbon Pricing Instruments



CHF 61.20

Redistribution in 2023

<https://www.bafu.admin.ch/bafu/en/home/topics/climate/info-specialists/reduction-measures/co2-levy/redistribution.html>



How the environmental levies are redistributed

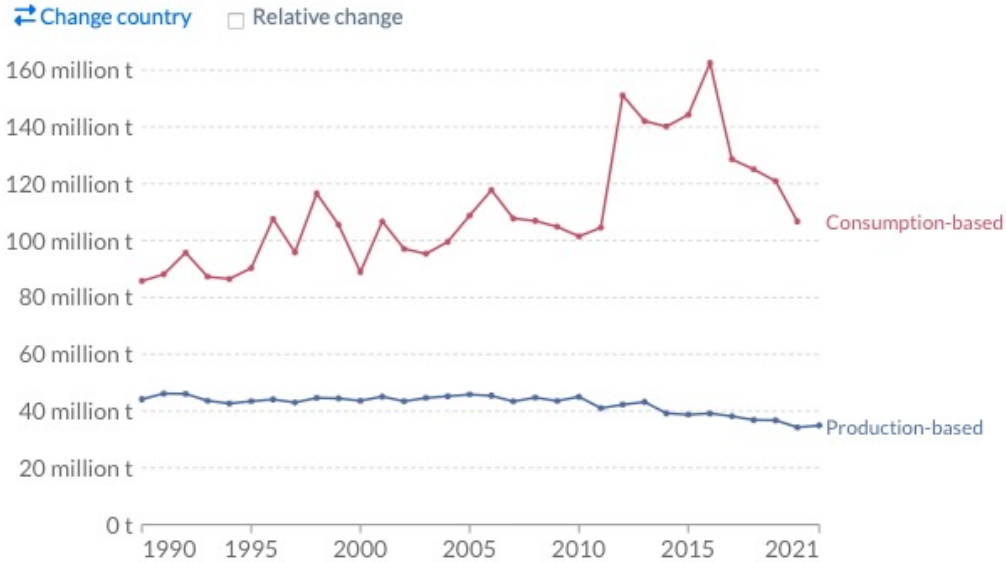
Production vs. Consumption (CO₂ not CO₂e)

Carbon Leakage

Production vs. consumption-based CO₂ emissions, Switzerland



Consumption-based emissions are national emissions that have been adjusted for trade. This measures fossil fuel and industry emissions. Land use change is not included.



Source: Our World in Data based on the Global Carbon Project (2022)
OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY

Country Rankings

Cumulative CO ₂ Emissions per Year (as of 2019)	
1. China	10.49 billion tons of CO ₂
2. USA	5.26 billion tons of CO ₂
3. India	2.63 billion tons of CO ₂
4. Russia	1.68 billion tons of CO ₂
...	
7. Germany	711 million tons of CO ₂
18. Italy	340 million tons of CO ₂
20. France	316 million tons of CO ₂
50. Austria	68 million tons of CO ₂
71. Switzerland	37 million tons of CO₂

Source: globalcarbonatlas.org 2021

Per Capita Emissions Including Grey Emissions (as of 2019)	
1. Luxemburg	36.44 tons
2. Qatar	27.08 tons
3. Brunei	23.00 tons
...	
10. USA	17.10 tons
13. Belgium	14.87 tons
16. Switzerland	13.51 tons
25. Austria	10.23 tons
28. Germany	9.88 tons
45. Italy	7.43 tons
52. France	6.48 tons

Source: ourworldindata.org 2021

Carbon Border Adjustment System

EU CBAM



CLIMATE CHANGE

CBAM: What you need to know about the new EU decarbonization incentive

Dec 19, 2022

- The EU has agreed to the world's first Carbon Border Adjustment Mechanism (CBAM), a measure aimed at preventing "carbon leakage".
- CBAM will initially cover several specific products in some of the most carbon-intensive sectors.
- CBAM, which some argue violates international trade rules, also aims to incentivize trading partners to decarbonize.

<https://www.weforum.org/agenda/2022/12/cbam-the-new-eu-decarbonization-incentive-and-what-you-need-to-know/>

EU CBAM

#EUGreenDeal

CARBON BORDER ADJUSTMENT MECHANISM

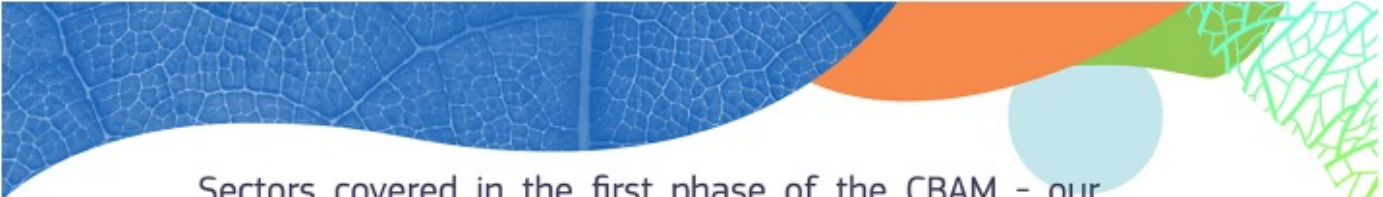


Climate change is a global problem that needs global solutions. As the EU raises its own climate ambition, and as long as less stringent climate policies prevail in many non-EU countries, there is a risk of so-called 'carbon leakage'. Carbon leakage occurs when companies based in the EU move carbon-intensive production abroad to countries where less stringent climate policies are in place than in the EU, or when EU products get replaced by more carbon-intensive imports.

The EU's Carbon Border Adjustment Mechanism (CBAM) is our landmark tool to put a fair price on the carbon emitted during the production of carbon intensive goods that are entering the EU, and to encourage cleaner industrial production in non-EU countries.

Difficult to Implement

First Phase Starts with Six Sectors



Sectors covered in the first phase of the CBAM - our environmental policy tool to help maximise the European and global impact of our fight against climate change.

CEMENT

IRON & STEEL

ALUMINIUM

FERTILISER

ELECTRICITY

HYDROGEN

#EUGreenDeal



Real learning
Real impact

Mixed Reactions

IMD Clients

CXO from an IMD client in a Zoom discussion (Spring 2022):

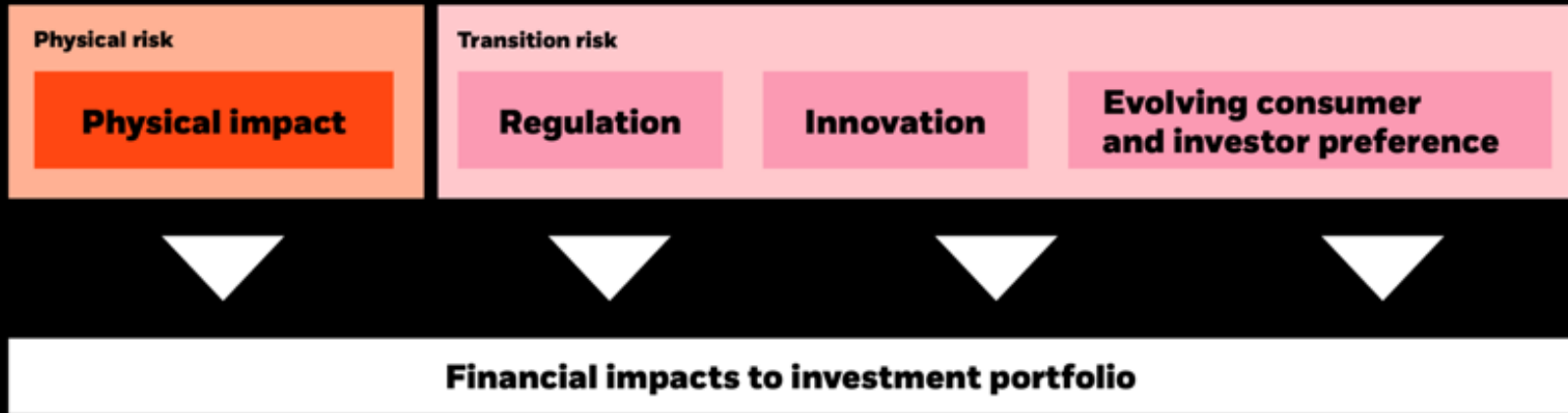
Should the EU really implement *CBAM*, then we will see the golden decade of stainless steel in Europe.

Participant from the Middle East in Strategic Finance 2 (October 2022):

If the EU attempts to implement *CBAM*, then we will sue them at the *WTO*.

Blackrock on the Risk of Climate Change

Investors over the coming decades will experience the impact of climate on asset prices in four ways:



Green Swan

1. FINANCIAL SERVICES:

AT THE HUB OF TRANSITION

Through lending and capital market activities, it is easy to see how the financial industry can either facilitate or hinder the transition to a low-carbon economy. If an unpredictable and catastrophic climate event were to occur – a so-called green swan – it could trigger a financial crisis that would affect the value of virtually every financial asset. **But even less-extreme events can have major impacts through a range of physical, transitional and liability risks, including stranded assets, bad loans and lost asset value.**

Sustainable Finance

Transition Risk

Stranded Assets (Definition of the Int'l Energy Agency)

Investments which have already been made but which, at some time prior to the end of their economic life, are no longer able to earn an economic return.

Examples: Palm oil land, coal plants, and many more

Transition Risk

Moving towards a less polluting economy means that some sectors of the economy face big shifts in asset values or higher costs of doing business.

Climate Action and Palm Oil

More than two thirds (76 per cent) of unplanted concessions in Indonesia and 15 per cent of the country's current concessions, including land farmed by smallholders, could be stranded assets by 2040, as efforts to end tropical deforestation ramp-up in a bid to comply with the Paris Agreement to slash carbon emissions to stave off climate change.

<https://www.eco-business.com/news/indonesian-palm-oil-faces-risk-of-stranded-assets-due-to-climate-action/?sw-signup=true>, August 2021

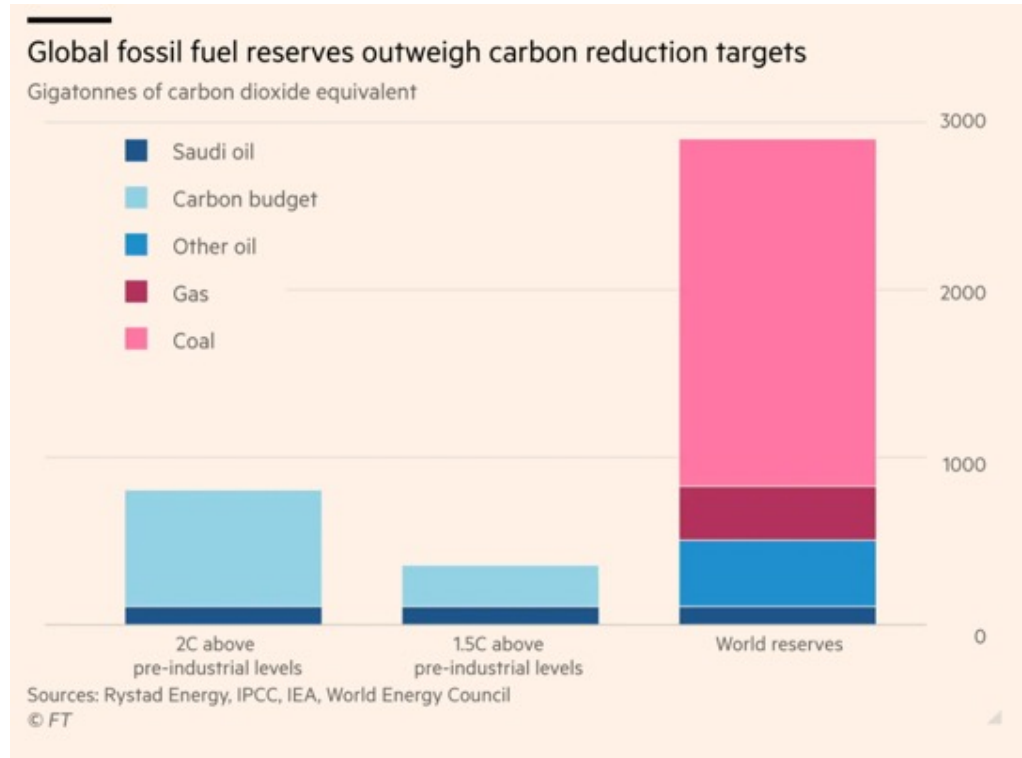
Indonesian palm oil faces risk of stranded assets due to climate action

Two thirds of unplanted concessions in Indonesia could be stranded assets by 2040, due to efforts to reduce the sector's impact on forests. But companies that grow sustainably could win big, a new study predicts.



Arial view of deforestation for palm oil on peatland in Central Kalimantan, Borneo, in Indonesia. Image: glennhurowitz, CC BY-NC-ND 3.0

Global Warming and Carbon Budgets



Asset Impairment

BP to take up to \$17.5bn hit on assets after cutting energy price outlook

Oil major expects demand to stay lower for longer and the shift away from fossil fuels to accelerate

“Its move is the biggest recognition yet among the largest oil and gas players that tens of billions of dollars worth of investment could be rendered uneconomic as the world pursues the Paris climate goals.”

<https://www.ft.com/content/2d84fc23-f38d-498f-9065-598f47e1ea09>, June 15, 2020

Example:

Assets Becoming Worthless

BP changed long-run oil price outlook from \$70 to \$55 a barrel

Implications:

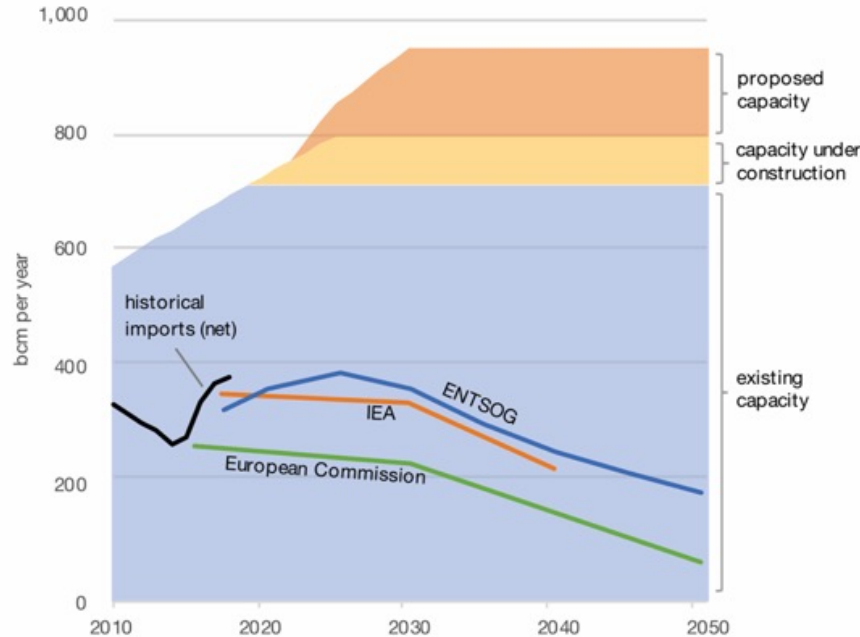
Resources in Canadian oil sands and ultra-deep-water wells off
Angola are no longer economical

Assets: really written off or company gaming its accounting?

Stranded Assets

EU Gas Imports vs. Import Capacity

Figure 5. EU natural gas imports and import capacity



Gas at a Crossroads

WHY THE EU SHOULD NOT CONTINUE TO EXPAND ITS GAS INFRASTRUCTURE

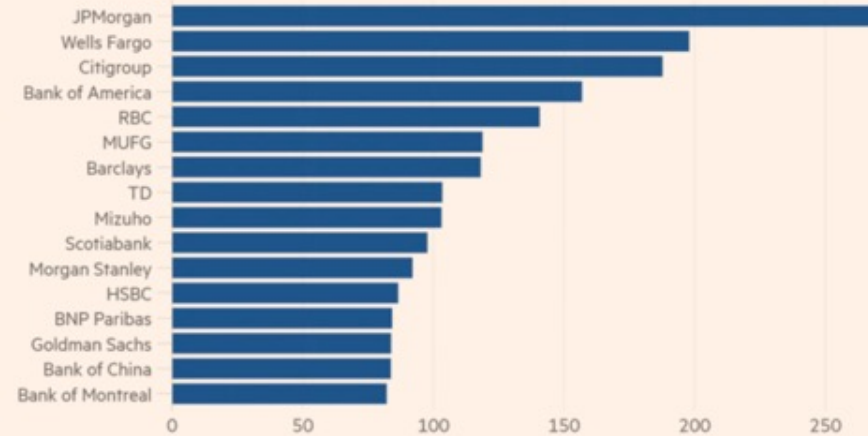
Global Energy Monitor, February 2020

EU is set to spend more than EUR 100 billion to expand import capacity by a third

Loan Exposure to Fossil Fuel Companies

Bank with the largest loan exposures to fossil fuel companies

Aggregate value from 2016 (\$bn)



Source: Banking on Climate Change
© FT

Barclays under fire over fossil fuel financing

Climate activists say bank's statements on climate change at odds with lending and underwriting activities



Banks have come under acute pressure from shareholders and protest groups over their role financing oil and coal companies © Getty Images

[Sustainable Finance](#)

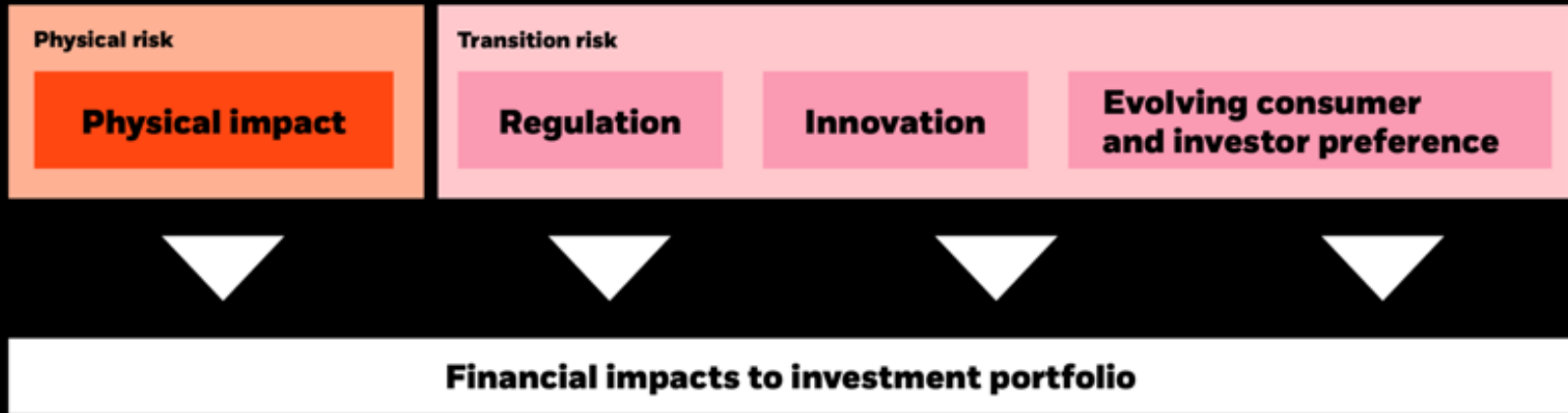
Transition Risk and Financial Markets

In our view, one of the biggest risks that investors face is that financial markets are not pricing in the effects of policy responses to climate change fast enough.

Five Sectors That Cannot Escape Climate Change, Morgan Stanley, Portfolio Allocation Trends & Highlights, Feb 2020

Blackrock on the Risk of Climate Change

Investors over the coming decades will experience the impact of climate on asset prices in four ways:

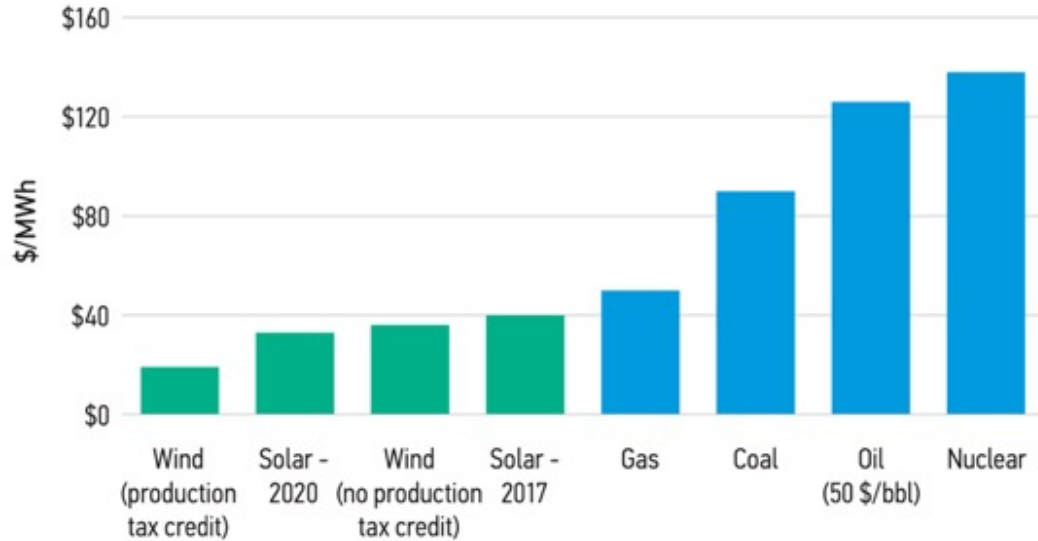


Levelized Cost of Energy (LCOE)

DISPLAY 3

Renewables are cheaper

Levelised cost of energy by source

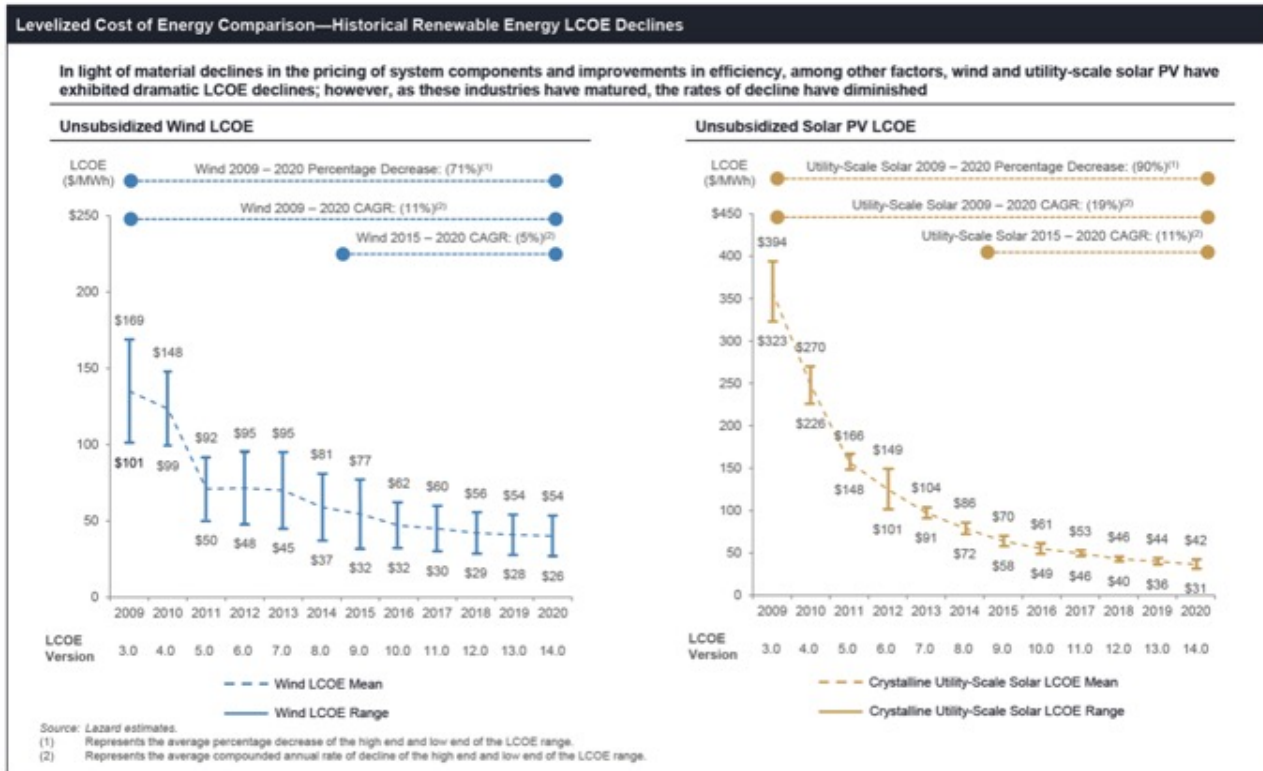


Source: Morgan Stanley Research.

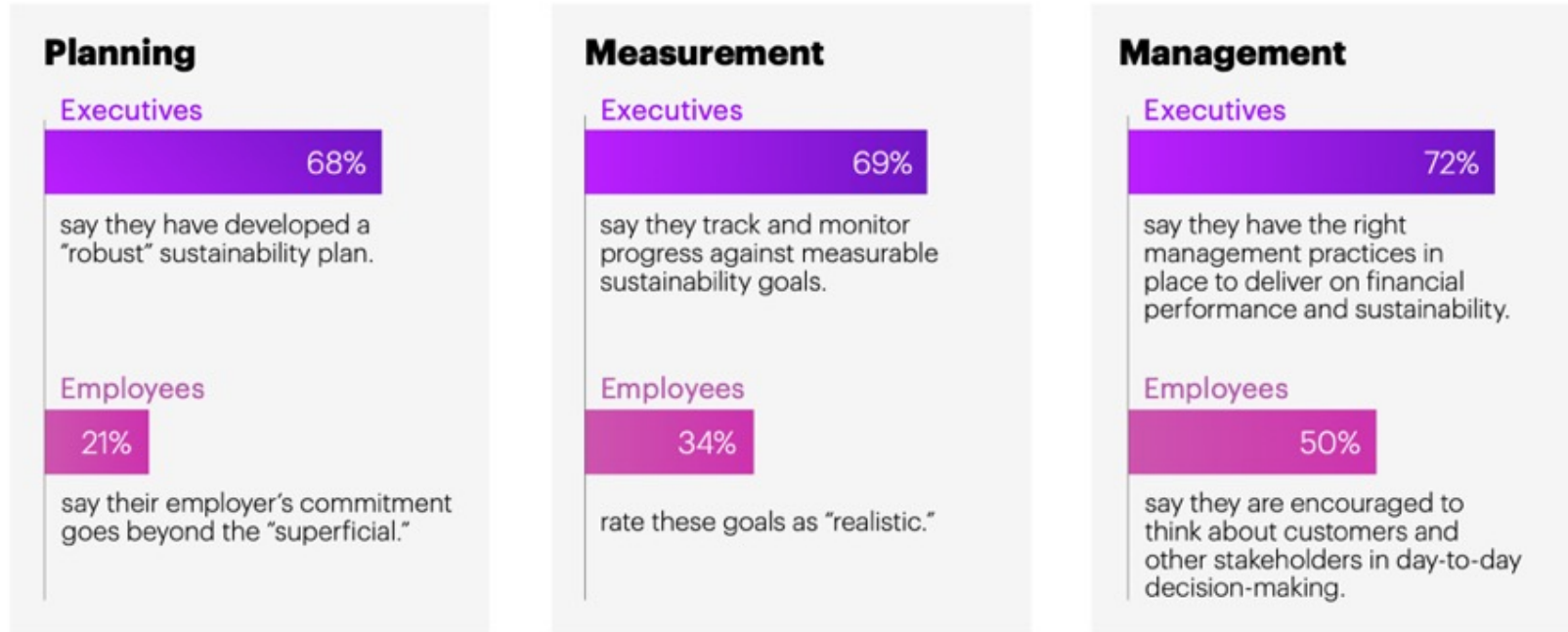
LCOE includes

- Initial investment
- Operations & maintenance
- Cost of fuel
- Cost of capital

Innovation Leads to Lower LCOE



Credibility Gap: Executives vs. Employees



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Source: Executive (N=1,496) and employee (N=2,535) surveys.

Figure 1

**Challenging what is
and inspiring what
could be.**

**We develop leaders
who transform
organizations and
contribute to society.**

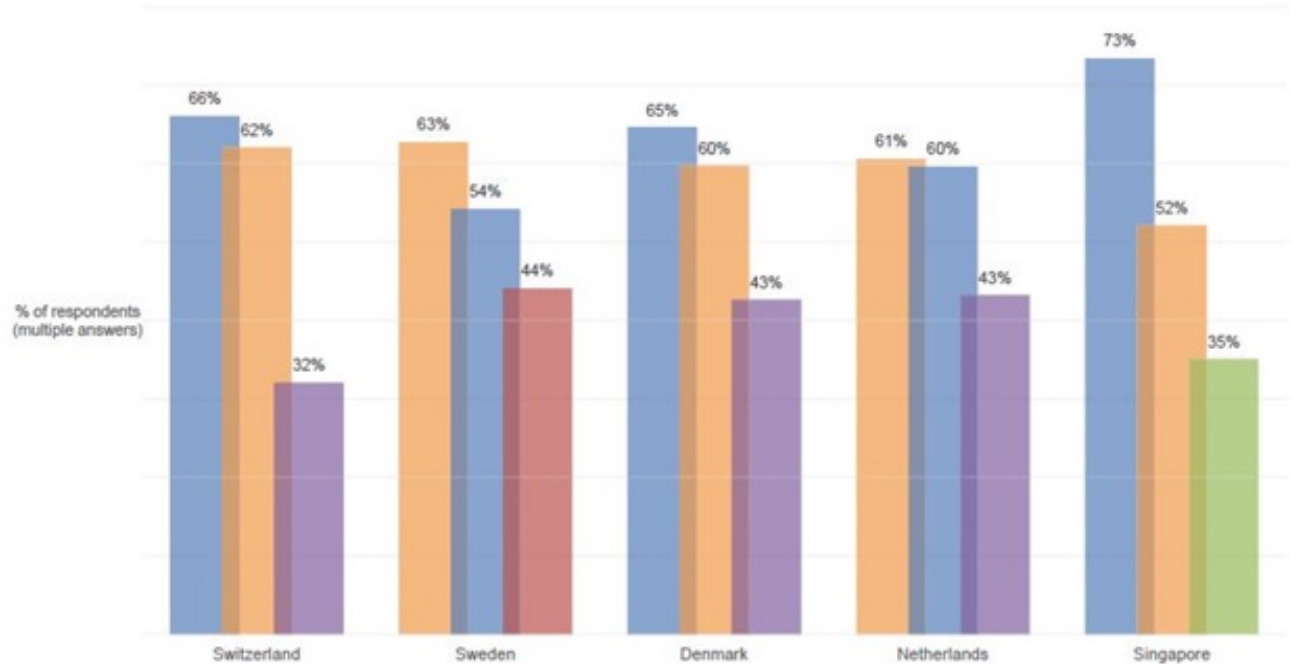
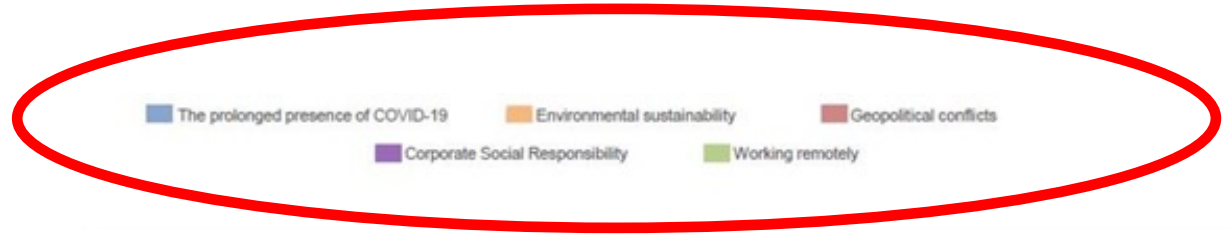
My job as an academic is not to be right as much as to catalyze a discussion that helps craft better solutions. If the previous sentence sounds like a cheap effort to smear Vaseline over the lens of all the stupid things I say, trust your judgment.

(Scott Galloway, NYU Stern)

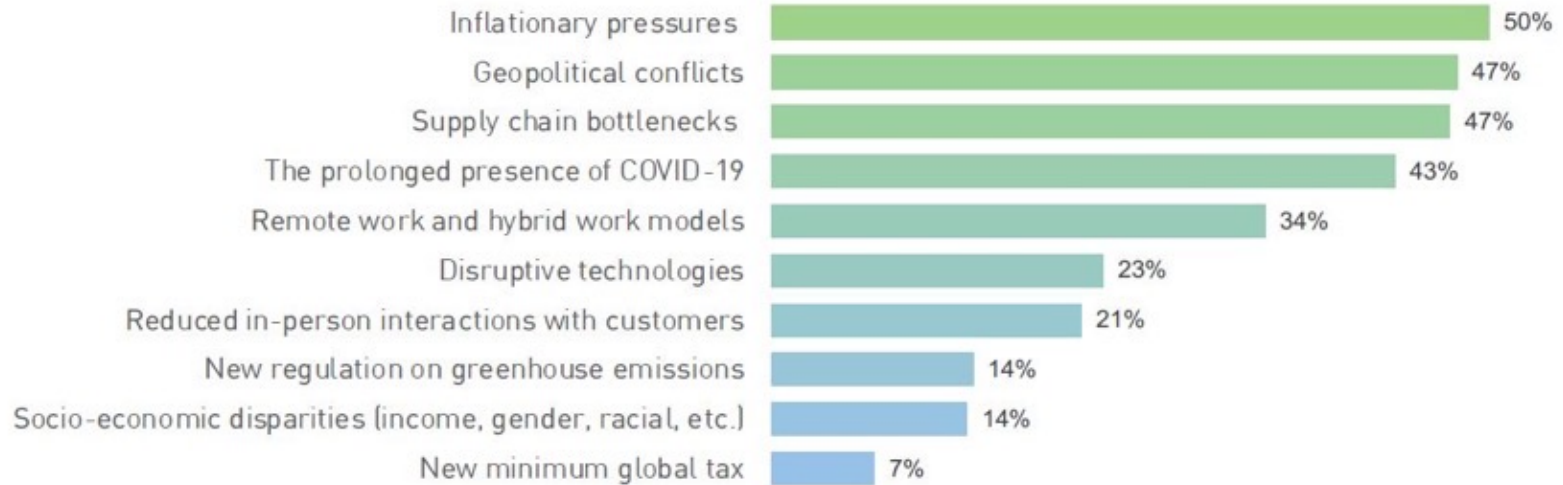
Thank You

IMD Poll 2021

Most Important Trends



IMD Poll 2022

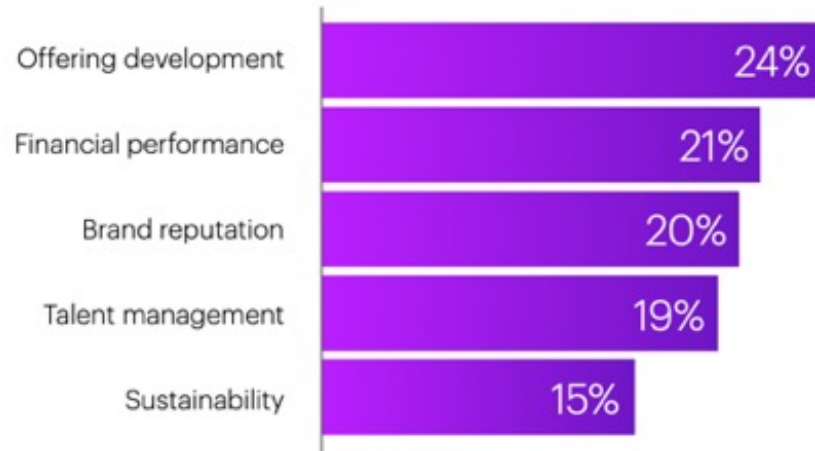


NOTE: The IMD Executive Opinion Survey was run between February 17th, 2022-May 11th, 2022. Only 3% of total responses were collected before the start of the Ukrainian-Russian war (February 24th, 2022). Based on a sample of 4'097 C-level and mid-level managers from the 63 countries included in the study.

Confirmation of IMD Findings

Sustainability trails other organizational priorities

Top business priorities (percentage of executives):



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Figure 5

Source: Executive survey (N=1,496).

Tragedy of the Horizon

The “tragedy of the horizon” is that the horizon of the normal business cycle is measured in [just a few] years, the political cycle — a four-year political cycle. Regulators, central banks, often look out two or three years. All of those horizons are shorter than the horizon over which the truly catastrophic impacts of climate change that are building today will be [made] manifest.

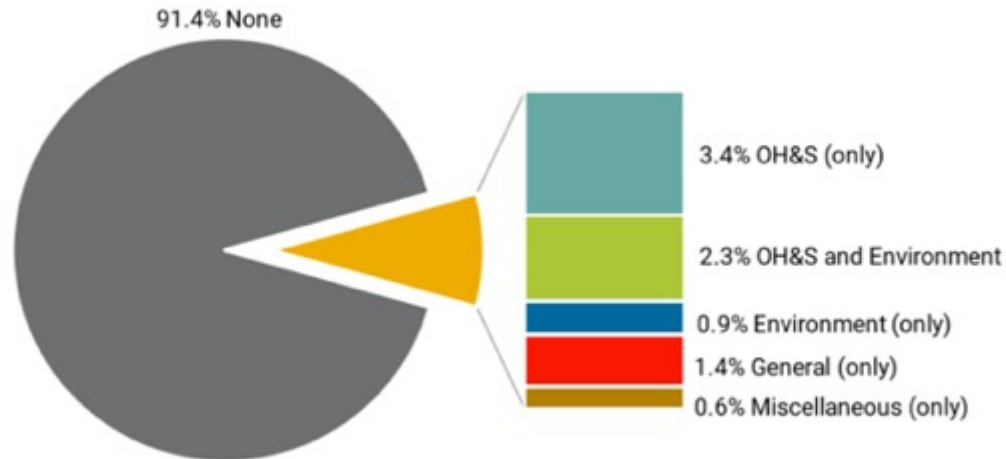
Former Bank of England Governor Mark Carney

<https://www.greenbiz.com/article/mark-carney-how-we-get-finance-act-climate>

Where Are The Incentives

Not Enough 'E', Not Enough 'G'

Exhibit 1: Types of ESG-linked compensation incentives, FTSE AW index*



*n=2,684, full sample covers 98% of the FTSE AW by weight; benchmark proxied by VWRD exchange-traded fund (ETF).² This analysis includes both long and short term pay-links. **Sources:** Sustainalytics³

<https://connect.sustainalytics.com/esg-spotlight-the-state-of-pay>

Incentives Are Changing

Mostly 'S', Though?

Use of ESG metrics correlates to company size

Percentage of companies that use ESG metrics in their executive compensation plans:



57%

S&P 500



< 10%

Russell 3000

(excluding the companies
in the S&P 500)

Source: Aon, "As More Firms Add ESG Metrics to Executive Pay, Best Practices are Emerging," August 2021.

Executive Performance

ESG Performance Metrics

Should a company's ESG performance determine its chief executive's pay?

November 2022 | SPOTLIGHT | BOARDROOM INTELLIGENCE

Financier Worldwide Magazine



(Source: <https://www.financierworldwide.com/should-a-companys-esg-performance-determine-its-chief-executives-pay#.Y44m3C8w3yl>, last accessed 5 December 2022)



November 2022 Issue