Ninety One

—
Investing for a world of change

Why Net Zero must be inclusive

How Irish Pension schemes can play their part

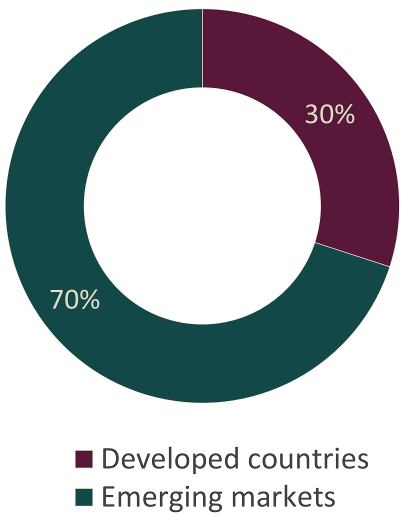
September 2021

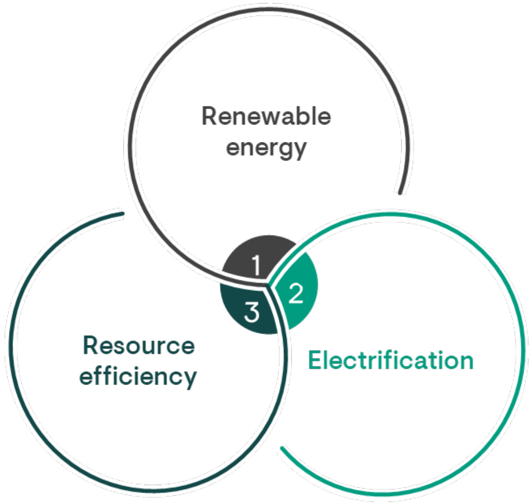
Key Takeaways

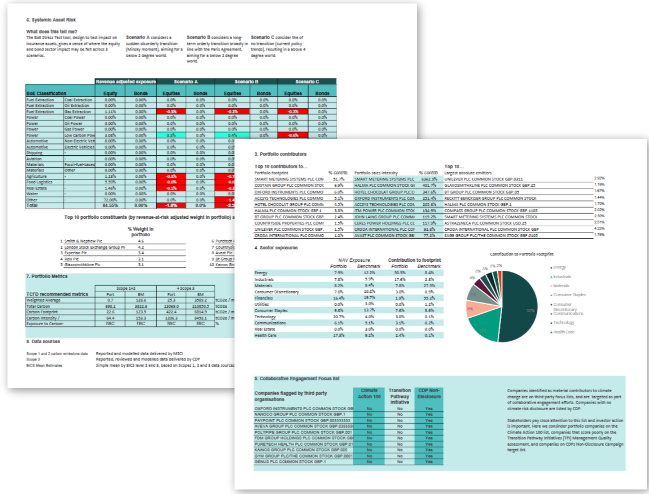
Ensure an inclusive transition

Increasing contribution to solutions

Assessing monitoring, and engaging



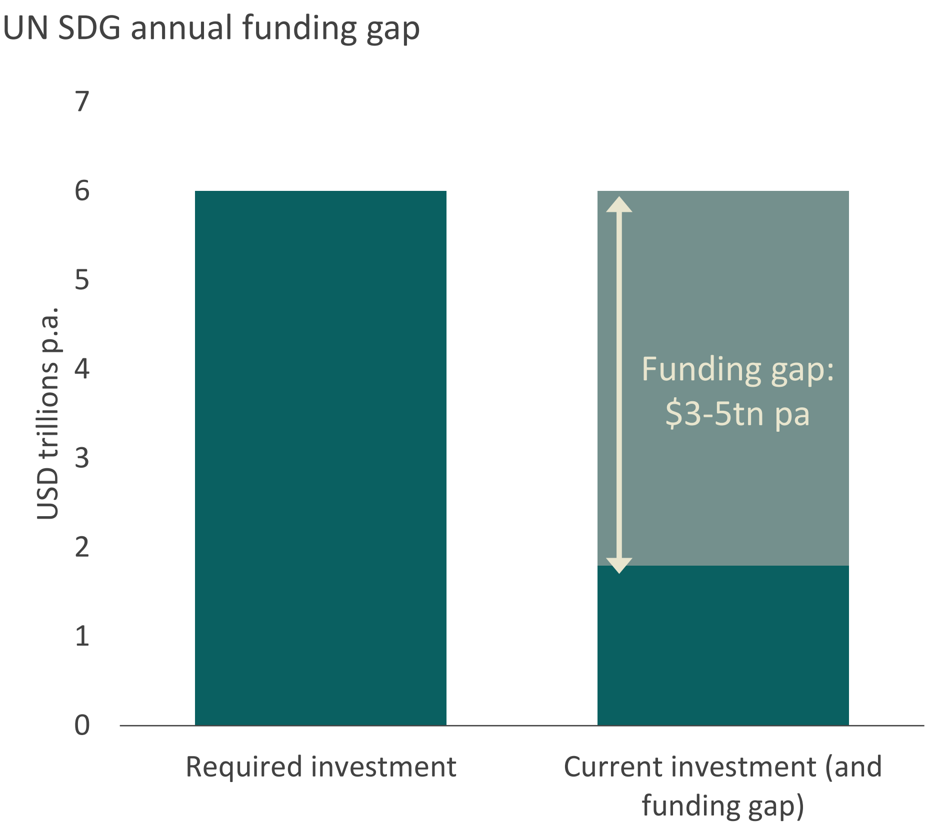


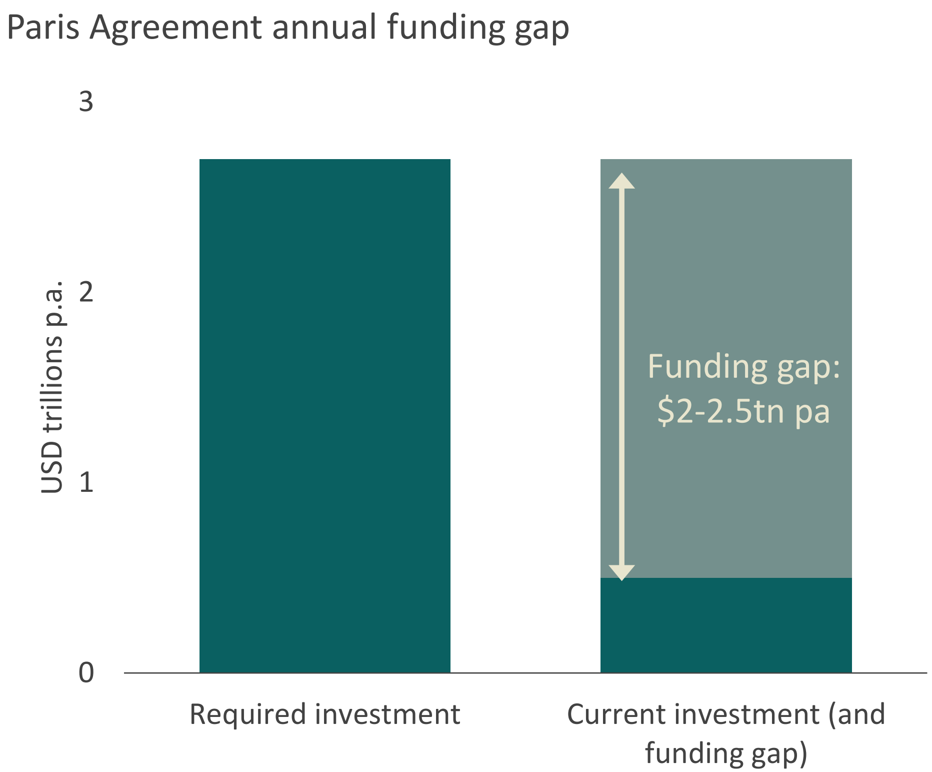


The size of capital required

The investment industry has a responsibility to address these needs

- $5-$7tn annual investment required to meet SDGs
- $2-$4tn annual investment required to meet Paris Agreement
- SDGs and Paris Agreement are currently grossly underfunded





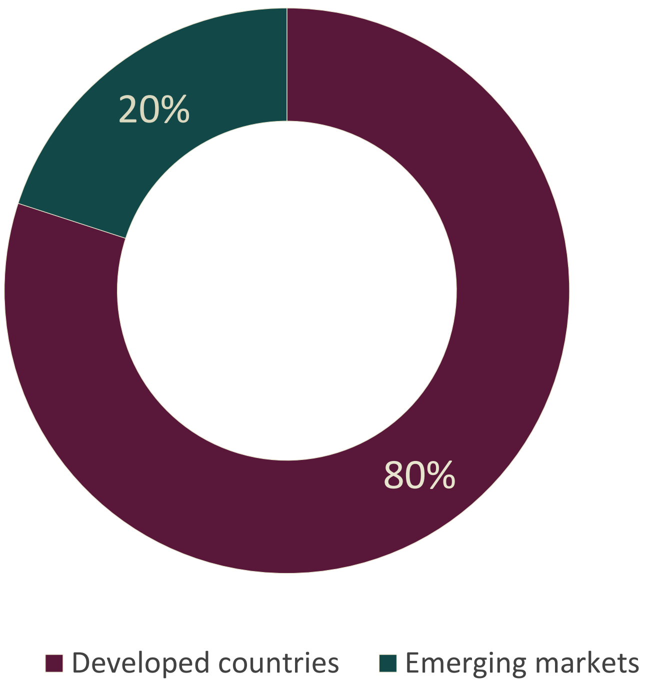
Source: OECD (Global Outlook on Financing for Sustainable Development 2021), Credit Suisse, Climate Policy Initiative - Global Landscape of Climate Finance UN IPCC. November 2019.
https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2019/

Emerging markets will determine the world's ability to reach net zero

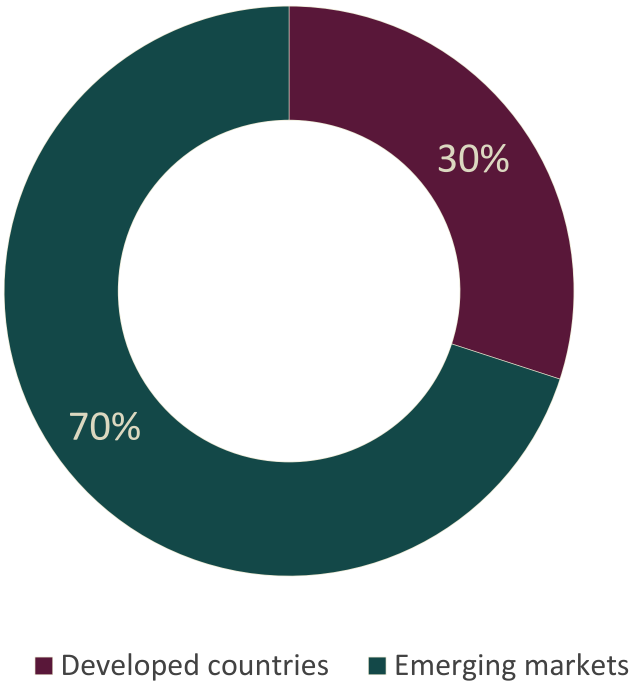
The investment industry has a responsibility to address these needs

- Currently 80% of global financial assets are in developed countries
- But 70% of the SDG and Paris Agreement capital needs to go to developing countries
- 88% of ESG/Sustainable investment funds are global or developed market focussed

Location of global financial assets



Location of sustainable spending needs



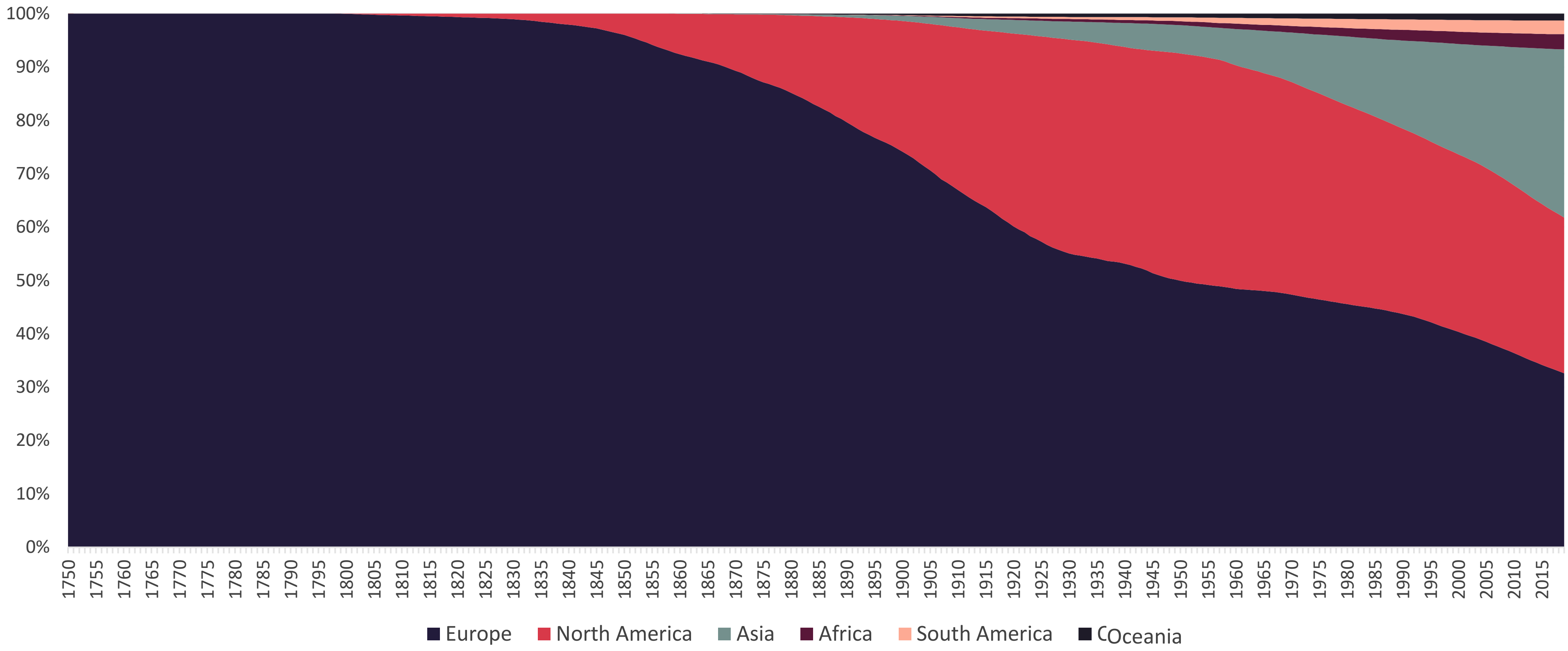
Source: OECD, Morningstar, Credit Suisse Research, February 2021

Historic emissions by region

Heavily skewed to developed market regions

- ❖Developed markets growth created the problem.
- ❖There is an obligation for the developed world to support emerging markets through the transition

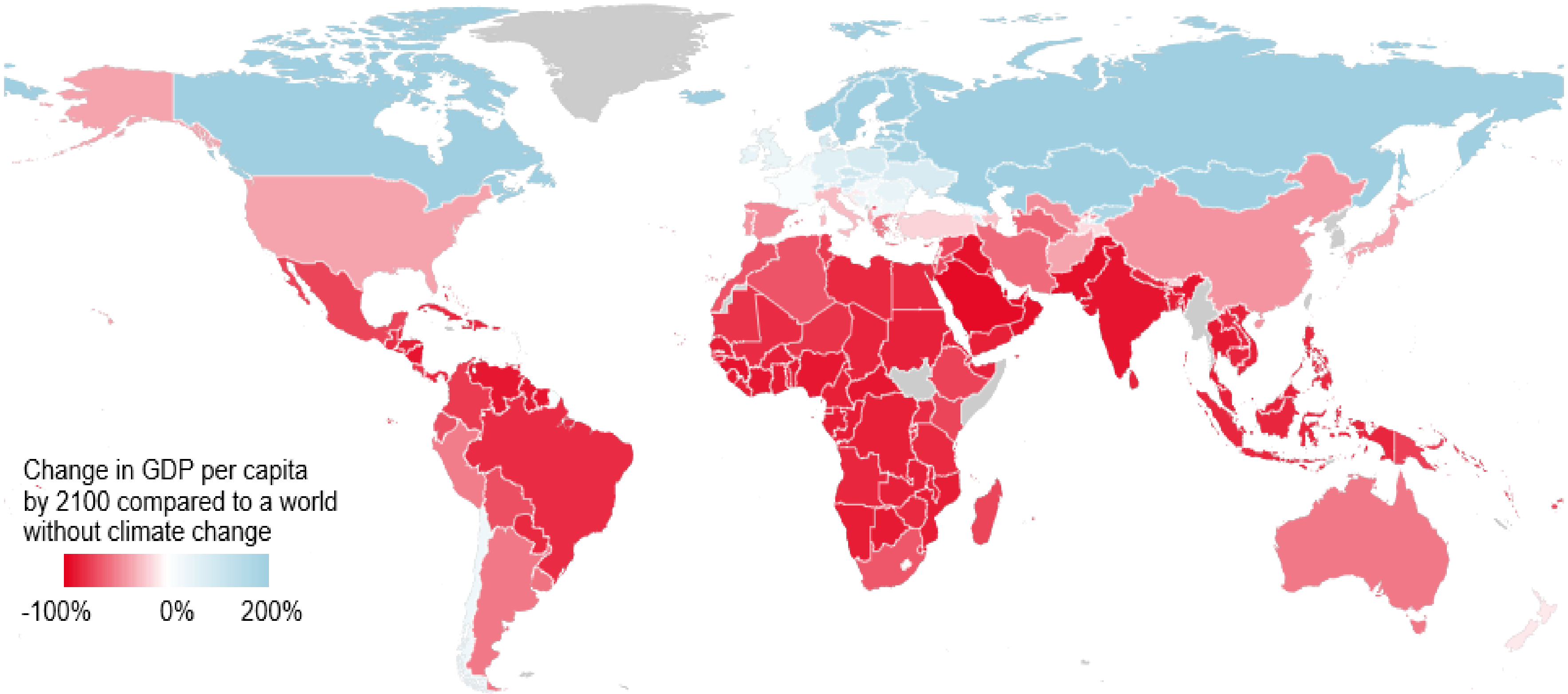
Historical cumulative CO2 emissions by region



Source: Global Carbon Project

Global economic impact of climate change

Heavily skewed to emerging market regions



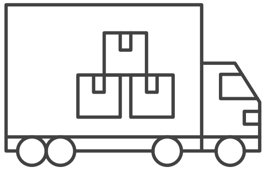
Source: Burke, Hsiang, and Miguel (2015)

Assessing carbon risk

What is a Scope 1 & 2 footprint?

1 **Scope 1**
Direct

Company facilities



Company vehicles

Scope 1 carbon emissions are the direct emissions from owned or controlled sources

- Fuel burned on site
- Owned vehicles

2 **Scope 2**
Indirect

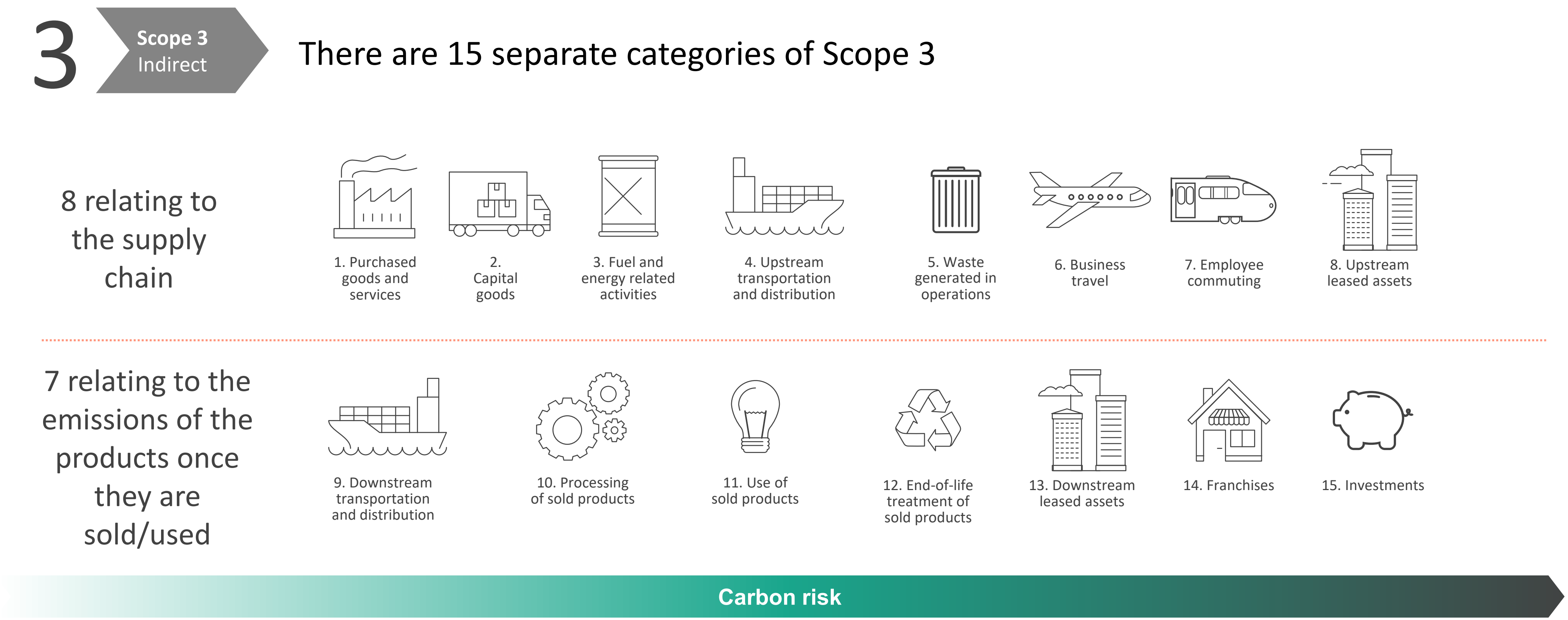
Purchased electricity, steam, heating and cooling for own use

Scope 2 carbon emissions are the indirect emissions from the generation of purchased energy

Source: Ninety One, Urgentem, November 2018

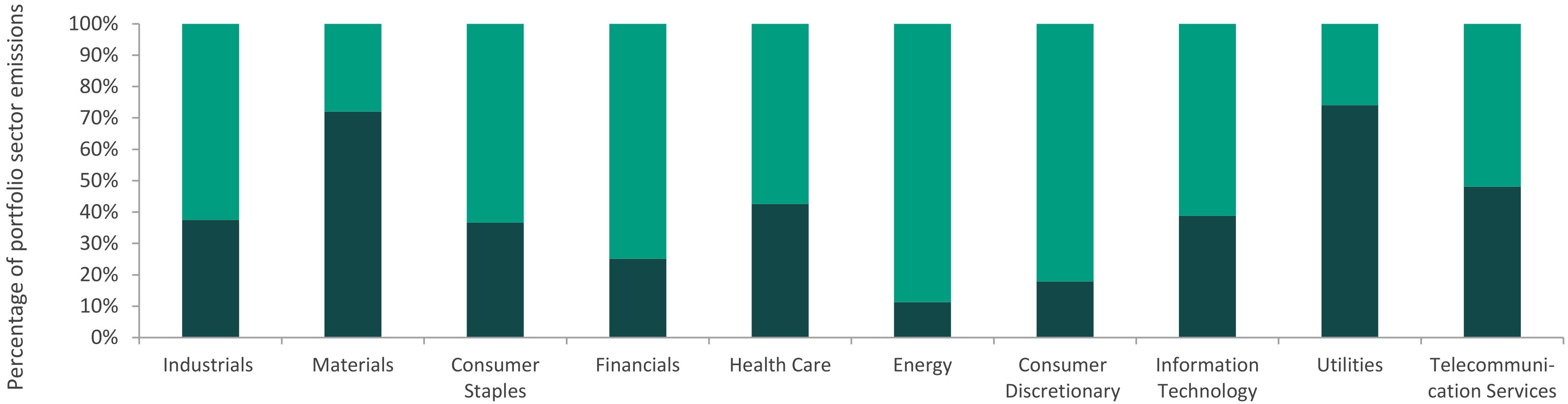
Assessing carbon risk

What is a Scope 3 footprint?



Source: Ninety One, Urgentem, November 2018

Scope 1 and 2 emissions alone can significantly understate total emissions



	Industrials	Materials	Consumer Staples	Financials	Health Care	Energy	Consumer Discretionary	Information Technology	Utilities	Telecommuni-cation Services
Scope 3	4,469	2,444	1,544	636	93	44,280	752	197	4,228	27
Scope 1 & 2	2,680	6,301	893	213	69	5,623	164	125	12,070	25

– ACCA estimate that ignoring a company's indirect emissions (Scope 3) can results in 75% of the carbon emissions being missed by analysis

– Ford has reported Scope 1, 2, and 3 carbon and estimate 90% of emissions are Scope 3

Source: PRI, May 2015. Portfolio is not related to the Global Environment Strategy, but created and measure by South Pole Carbon

Net zero targets should be sector neutral

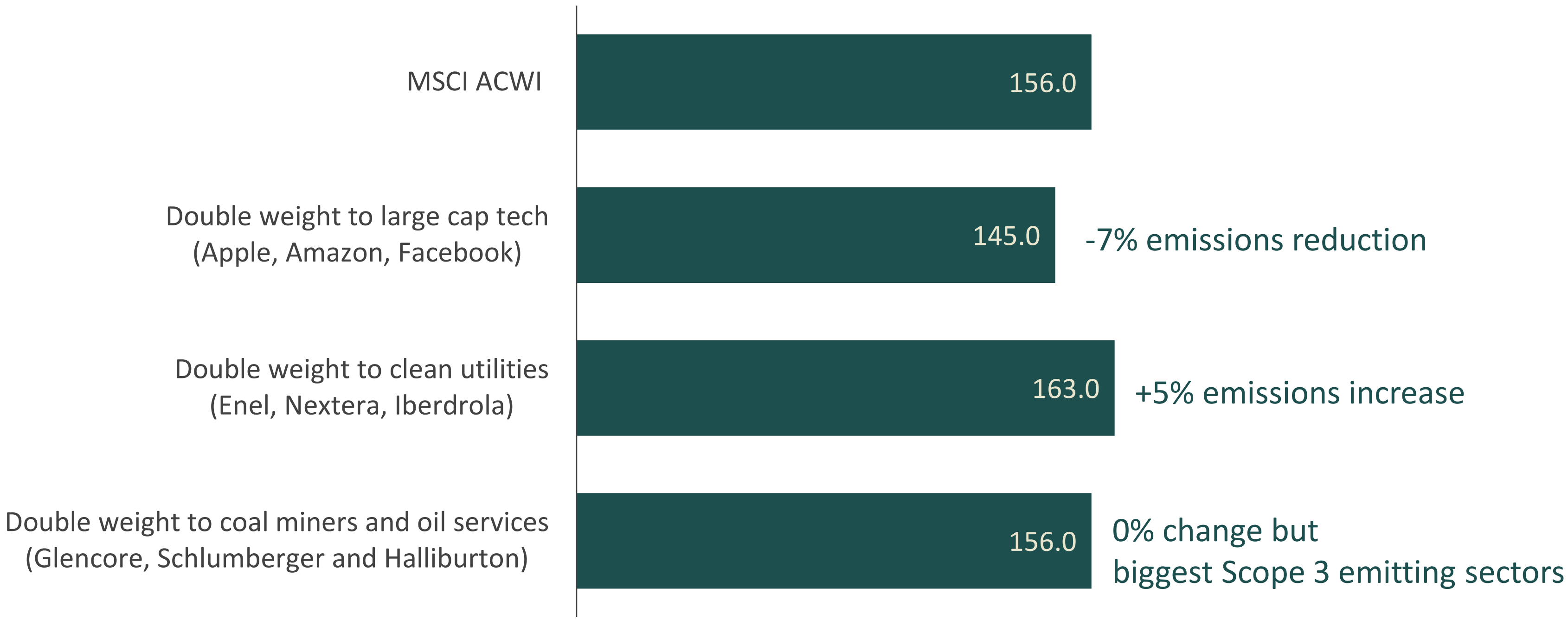
Corporates – using MSCI ACWI as proxy index

❖Allocating to big tech giants reduces portfolio emissions, not real world emissions

❖Allocating to utilities – the world's biggest owners of renewable energy* - actually increases emissions

❖A detailed externalities assessment on downstream carbon from sectors such as coal mining, oil and gas exploration and production is likely to severely limit exposure to these carbon intensive sectors.

Sector stress test - weighted average carbon intensity (Scopes 1 & 2) tCO_2e/$m sales



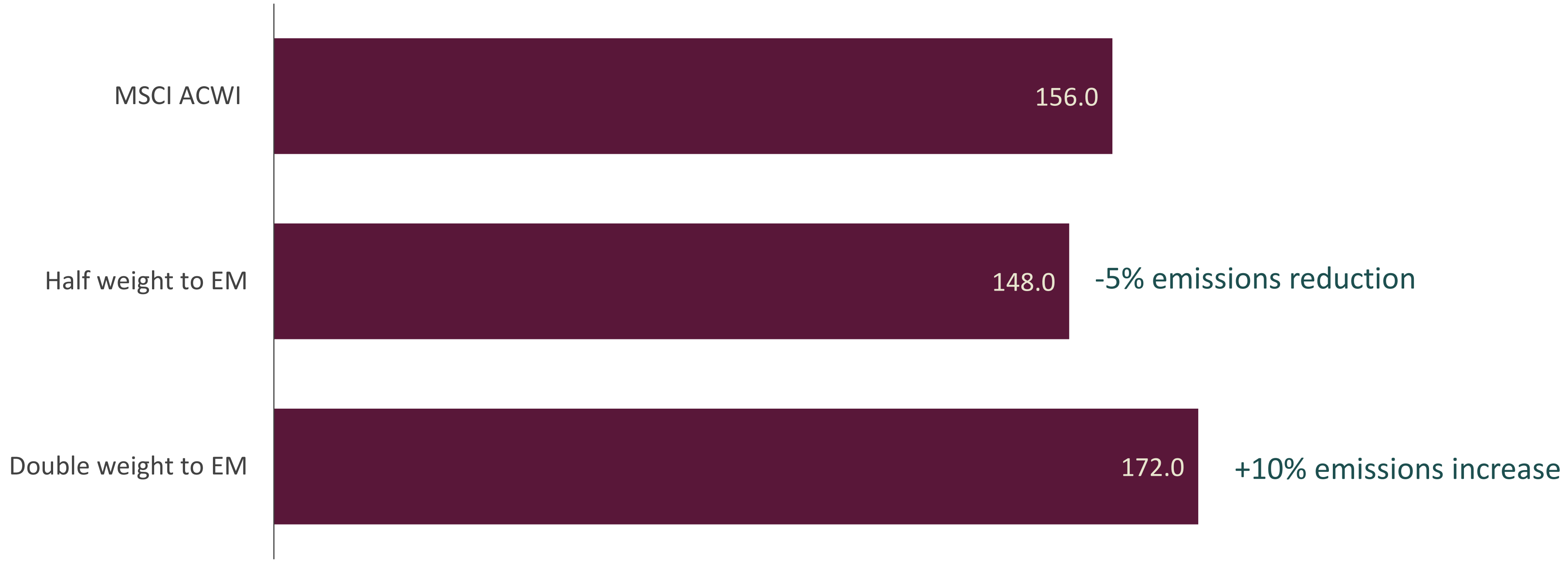
Source: Ninety One, MSCI carbon data as at 11 April 2021. * Excluding China state owned enterprises

Net zero targets should be country neutral

Corporates – using MSCI ACWI as proxy index

- ❖Emerging markets are most in need of SDG and Paris Agreement funding
- ❖Reducing emerging market exposure reduces portfolio emissions, not real world emissions
- ❖90% of future emissions growth is expected to come from emerging markets so it will only get harder to allocate to emerging markets

Regional stress test - weighted average carbon intensity
(Scopes 1 & 2) tCO2e/$m sales

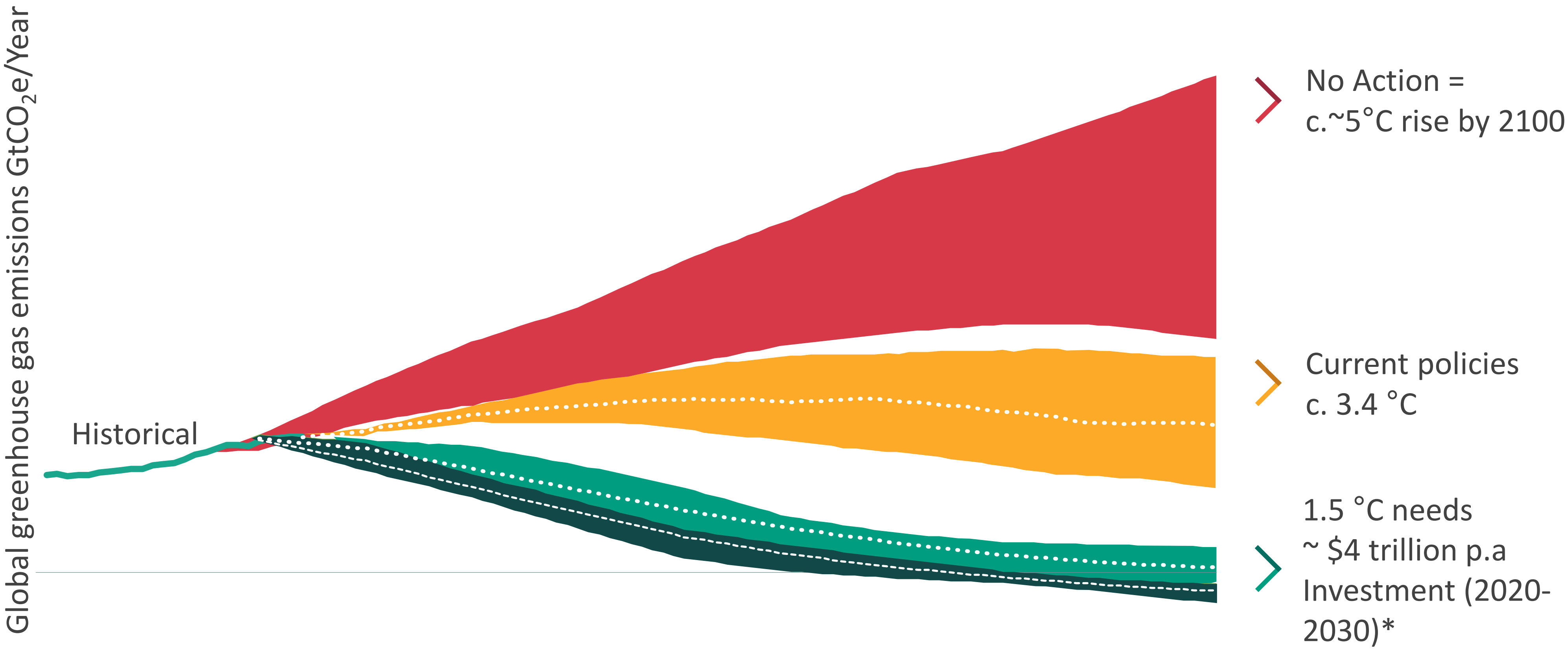


Source: Ninety One, MSCI carbon data as at 11 April 2021.

Solutions

Accelerated investment needed to stay within 2°C

2100 Warming projections



Forecasts are inherently limited and are not a reliable indicator of future results.

Source: Climate Action Tracker Project, 2017, *IEA Report: Net Zero by 2050 - A roadmap for the Global Energy Sector.

IEA's pathways to net zero by 2050

The transition has barely started

2030 vs today (7% less energy demand)

4x increase in wind and solar capacity

60% of global car sales are electric

All new buildings are zero-carbon ready

$4 tn p.a. spending required on the energy system alone

2050 vs today (8% less energy demand)

10-20x increase in wind and solar capacity

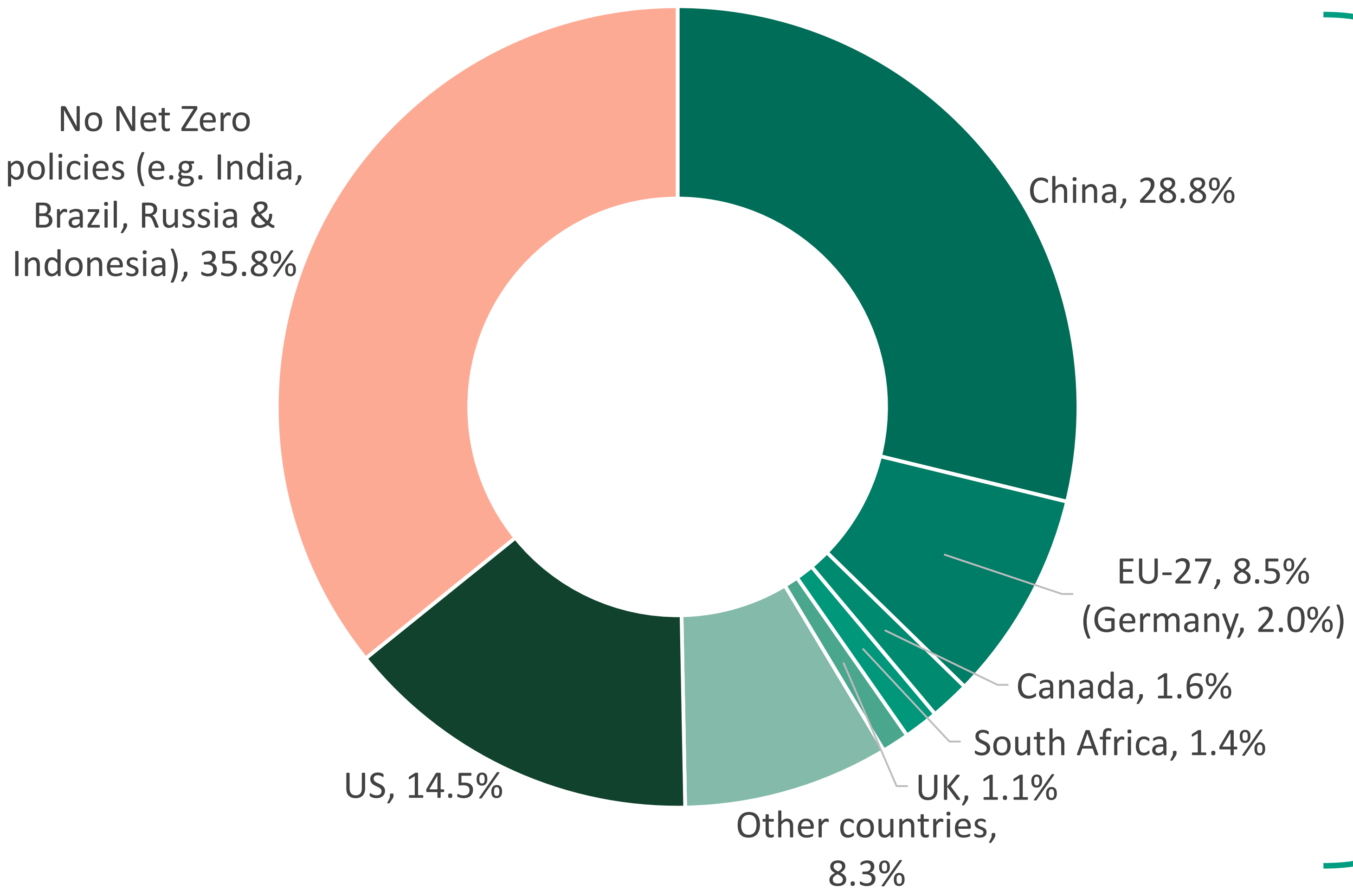
No new ICE car sales

85% buildings zero-carbon ready

Source: IEA Report: Net Zero by 2050 - A roadmap for the Global Energy Sector

Drivers of decarbonisation - regulation

2020 saw new policy announcements across Asia and US, and stronger commitments from Europe



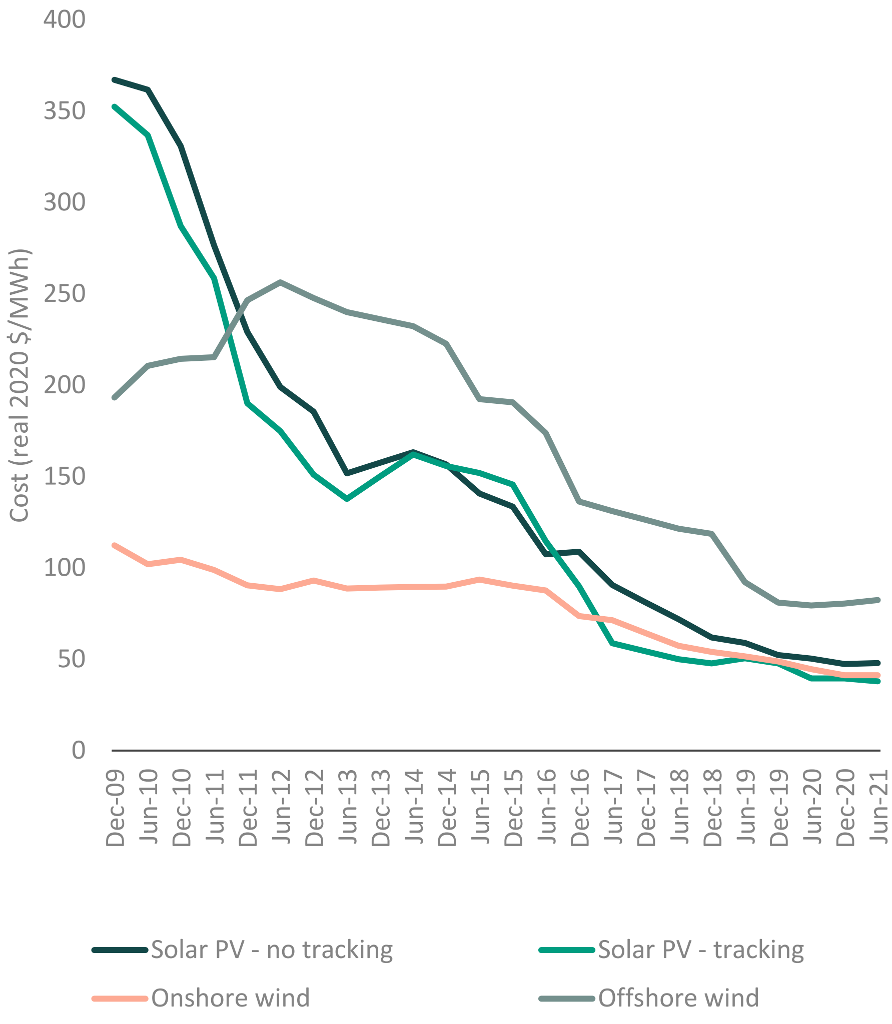
c.64% of global emissions now covered by "net-zero" announcements

Source: As at 31 December 2020. Emissions Data from https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html, Countries determined as "net zero" from https://eciu.net/netzerotracker

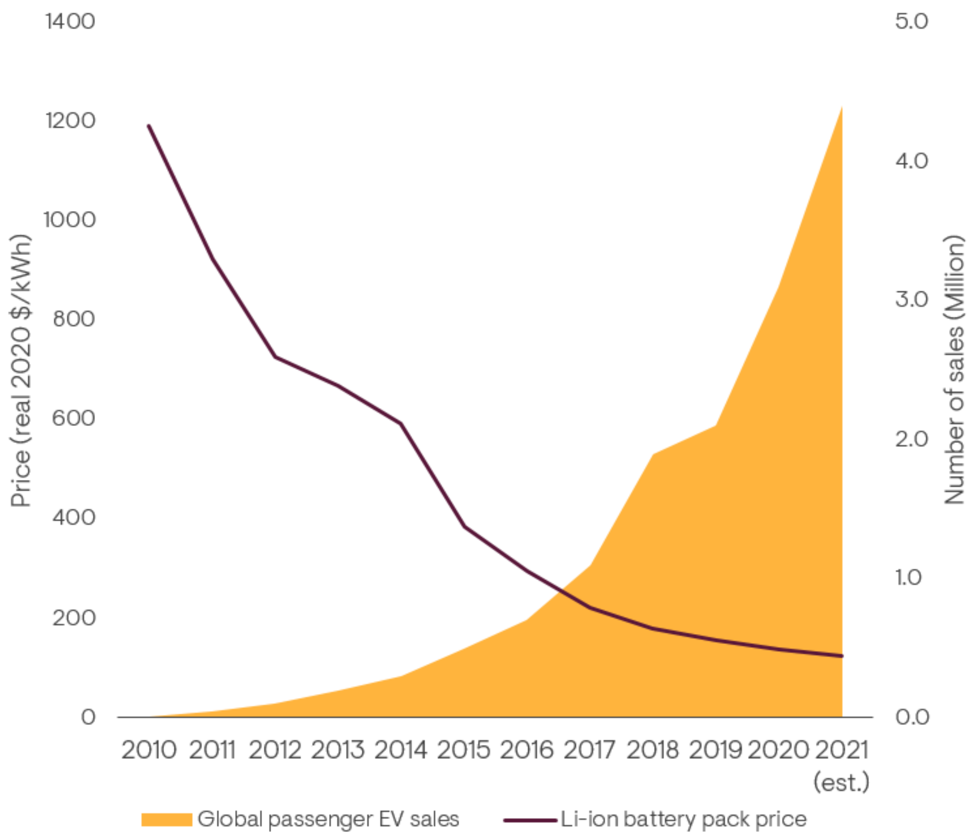
Drivers of decarbonisation – technology

Costs have fallen considerably as technologies have improved

Levelized cost of energy – wind and solar



Li-ion battery pack price and EV sales

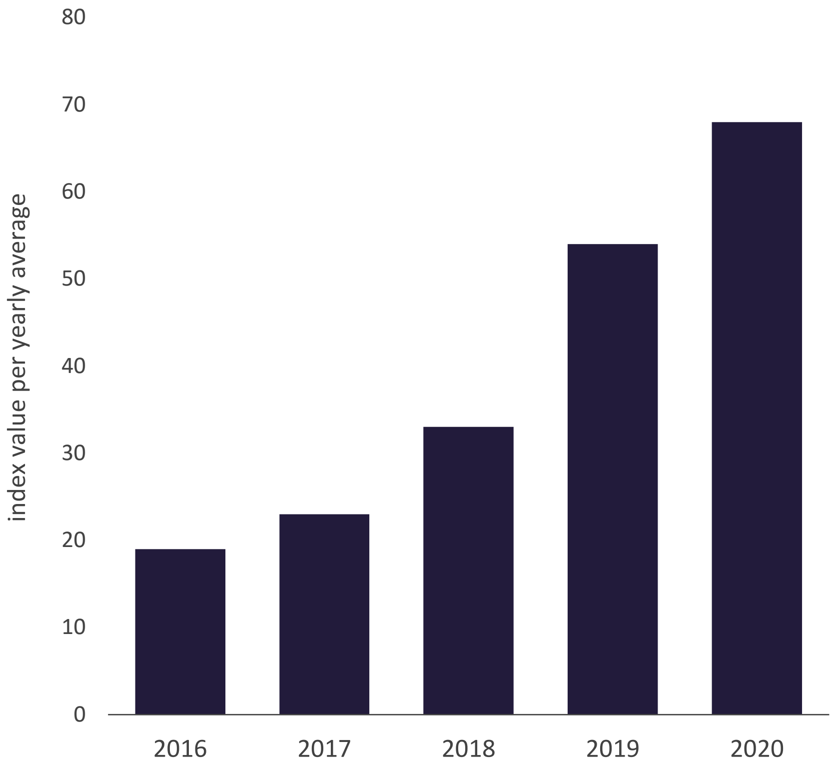


Source: Bloomberg BNEF, IEA, June 2021. EV are electric vehicles and include battery electrics and plug-in hybrids. Prices have been adjusted to be in real 2020 dollars.

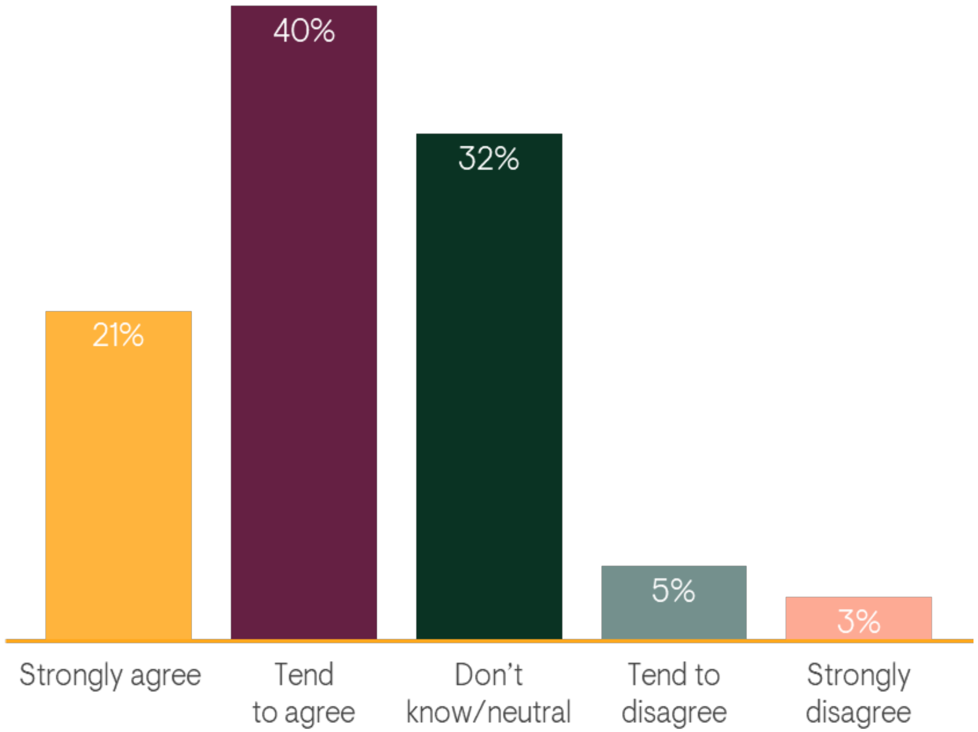
Drivers of decarbonisation – consumer behaviours

Surveys suggest increasing concerns about climate change and changing behaviours

Google searches globally for sustainable products in the 'shopping' category – WWF and EIU



To what extent do you agree: "I would be comfortable for a proportion of my workplace pension to default into environmentally-focused investments"?



Source: WWF and EIU report 2021: "An Eco-wakening": https://explore.panda.org/eco-wakening#full-report . Ninety One Planetary Pulse Survey 2019.

Introducing "carbon avoided" or "Scope 4"

Carbon avoided compares products to the status quo

81g/km

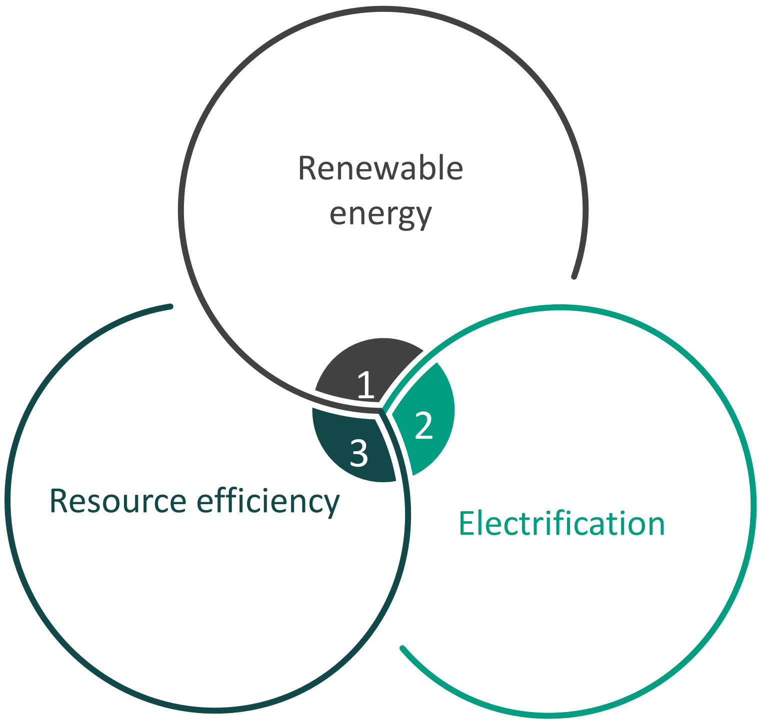
Total **Carbon avoided**

Production	29g/km	57g/km
Use Phase	111g/km	2g/km (100% renewable)
Total	140g/km	59g/km

Carbon avoided is the carbon emissions avoided by using a product that has less carbon emissions than the status quo thereby contributing to decarbonisation

Source: Ninety One, Urgentem, Volkswagen as at April 2019

Investment opportunities throughout the value chain



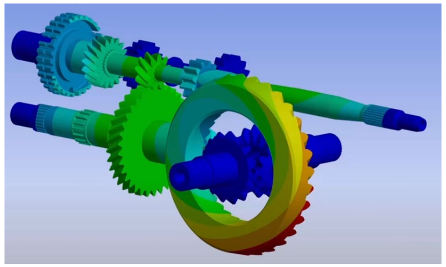
Renewable energy	Electrification	Resource efficiency
Solar	Electric vehicles	Waste management
Wind	Autonomous vehicles	Homes and buildings
Clean Power Utilities	Industrial electrification	Agriculture
Smart grids	Hydrogen economy	Consumer products
Networks	Heating and cooling	Factories

*Specifically, we use the following BICs subsectors for this exclusion: Engines & Parts Manufacturing, Exhausts & Emissions Manufacturing, Oil & Gas, Diesel Locomotives Manufacturing, Oil & Gas Infrastructure Construction, Oilfield Chemicals Manufacturing, Coal Mining. We do not exclude the Utility sector given the significant potential to contribute materially to decarbonisation.

Broad opportunity set

Ansys

Develops software solutions that help to accelerate product time to market, reduce production costs and improve engineering processes



novozymes

Biotech company specialising in enzyme technology to improve energy efficiency in household products, agriculture and food/ beverages

SANHUA

Manufactures heat, ventilation and air conditioning components with a significant market share in EVs heat management

Infineon

Power semi-conductor company providing products for wind turbines, solar inverters and electric vehicles

No representation is being made that any investment will or is likely to achieve profits or losses similar to those achieved in the past, or that significant losses will be avoided.

This is not a recommendation to buy, sell or hold a particular security. For further information on specific portfolio names, please see the Important Information section.

Assess, Monitor and Engage

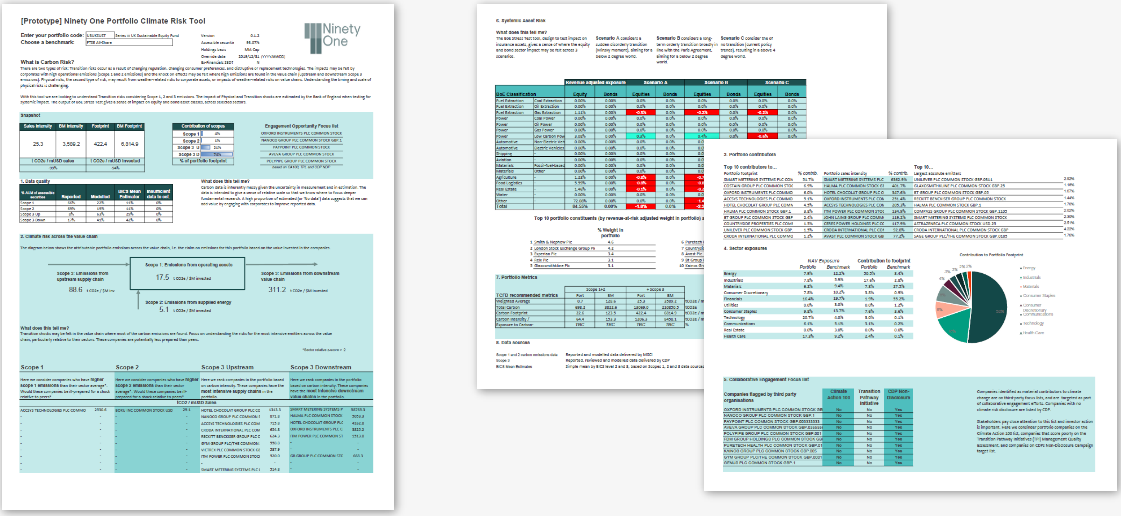
Assessing, monitoring and engaging

Commit to assess both top and bottom decile in terms of emissions reduction

Assess top holdings to understand reasons for emissions reduction

Assess bottom holdings to understand reasons for lack of progress

Dashboard of carbon metrics to support ongoing monitoring



Key Takeaways

Ensure an inclusive transition

Increasing contribution to solutions

Assessing monitoring, and engaging