PRI Principles for Responsible Investment

INEVITABLE POLICY RESPONSE

UNEP FINANCE INITIATIVE | United Nations Global Compact

An investor initiative in partnership with UNEP Finance Initiative and UN Global Compact

The Inevitable Policy Response 2021

Forecasting and Aligning

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Consortium Partners

This report was prepared by Vivid Economics and Energy Transition Advisors, who bear sole responsibility for any views expressed, which do not necessarily reflect those of the sponsors or other consortium members. The authors are solely responsible for any errors.

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Who supports the Inevitable Policy Response ?

Leading financial institutions joined the IPR as Strategic Partners in 2021 to provide more in-depth industry input, and to further strengthen its relevance to the financial industry

BLACKROCK · FitchRatings · nuveen A TIAA Company · ROBECO The Investment Engineers · BNP PARIBAS ASSET MANAGEMENT · Goldman Sachs Asset Management · NewForests

Core philanthropic support since IPR began in 2018. The IPR is funded in part by the Gordon and Betty Moore Foundation through The Finance Hub, which was created to advance sustainable finance and the ClimateWorks Foundation striving to innovate and accelerate climate solutions at scale

GORDON AND BETTY MOORE FOUNDATION · THE FINANCE HUB · climateworks FOUNDATION

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What is IPR?

IPR is a consortium of organizations focused on developing decision-supporting forecasts around the transition to a low-carbon economy. It develops both central forecasts around the transition as well as forecasts around the nature of a potential policy ratchet. Its work is predicated on the idea that the transition is inevitable and that forecasts are a crucial complement to previous approaches to developing climate goal optimizations without a comment on likelihood.

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The structure of the IPR framework

Drivers of policy

- Extreme weather events
- Uninsurable world
- New climate research
- Impacts on security
- Civil society action
- Influence shifting
- Cheaper renewable energy
- Financial regulator warnings on stability
- New geopolitics of energy

IPR Policy Forecast

A **high-conviction policy-based forecast** of forceful policy response to climate change and implications for energy, agriculture and land use

IPR Forecast Policy Scenario (FPS)

A **fully integrated climate scenario** modelling the impact of the forecasted policies on the real economy up to 2050, tracing detailed effects on all emitting sectors

IPR 1.5°C RPS Scenario

A '**1.5°C Required Policy Scenario**'(1.5°C RPS) building on the IEA NZE by deepening analysis on policy, land use, emerging economies, NETs and value drivers. This can be used by those looking to align to 1.5°C

IPR value drivers

A set of publicly available **outputs from the FPS and 1.5°C RPS** that offer significant granularity at the sector and country level allowing investors to assess their own climate risk

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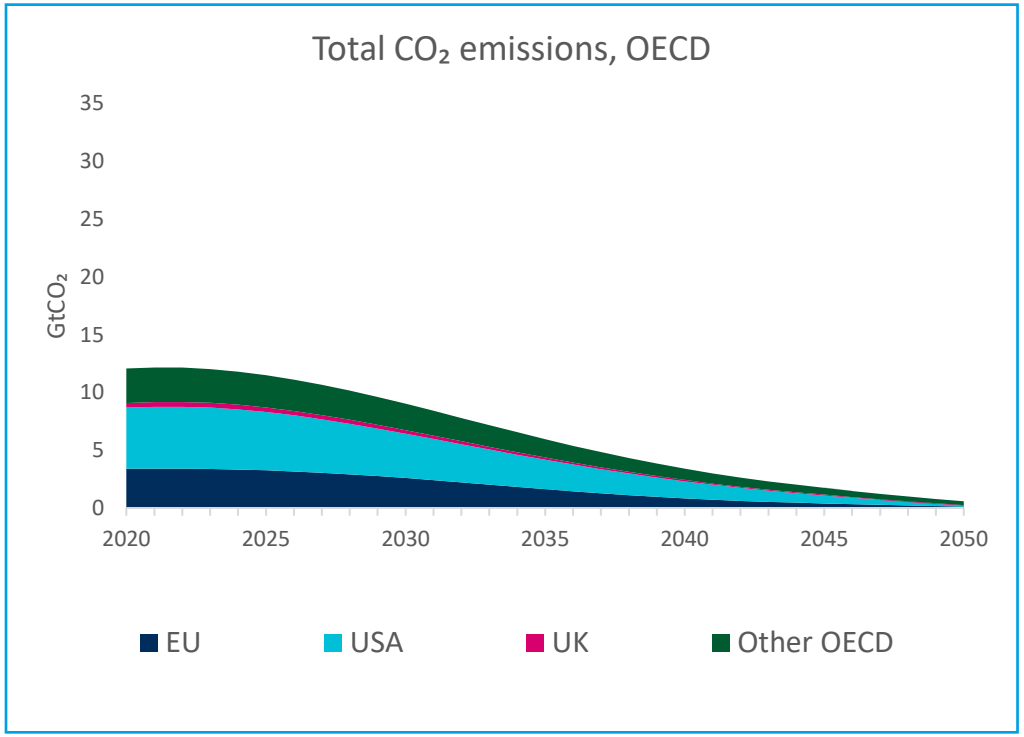
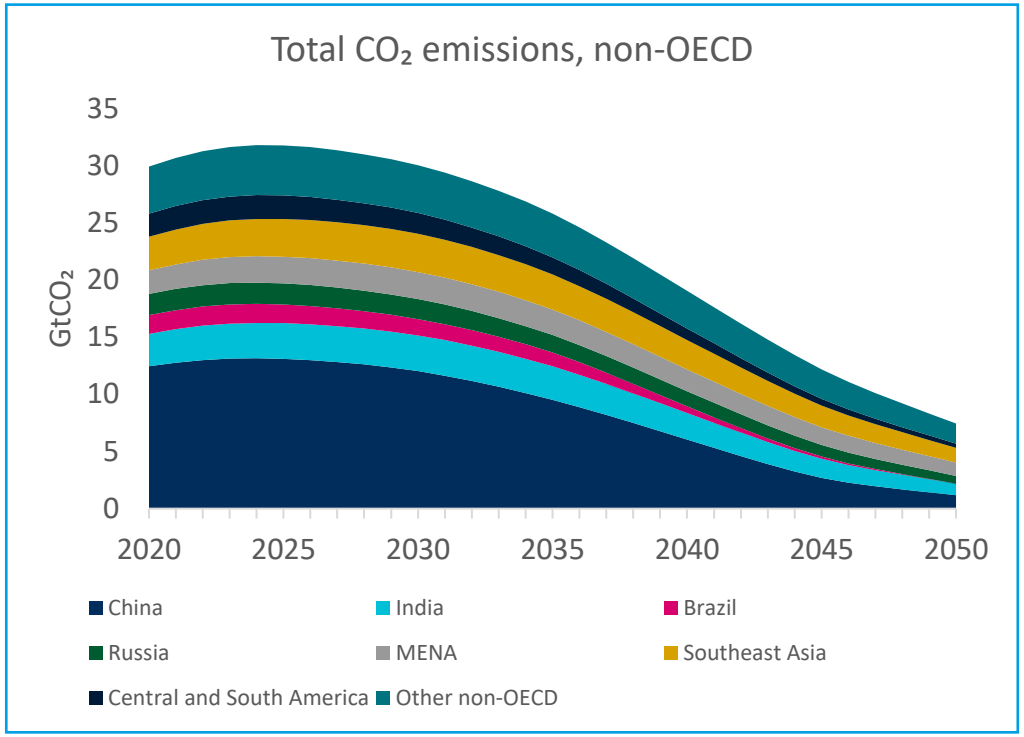
- **What is in IPR FPS and RPS that underpins investor actions?**

IPR FPS 2021: Total CO_2 emissions (on a production basis) reach near zero in OECD countries, though remain substantial in non-OECD countries





- In OECD countries, emissions reductions are rapid due to 2050 net zero targets.
- Total (energy and land) CO_2 emissions countries fall from around 12 Gt in 2020 to 9 in 2030 and near zero in 2050, with virtually no international offsets required

- In non-OECD countries, emissions reductions are slower due to rapid growth in energy demand, later net zero targets in China, India and Brazil, and lack of net zero targets elsewhere
- Total CO_2 emissions rise in the 2020s and fall back to 2020 levels of 30 Gt by 2030, before declining substantially and falling to 8 Gt in 2050

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Example key sector analysis - Global coal phase out

Phase out of existing unabated coal

	Timeline								annual reduction*	
	2020	2025	2030	2035	2040	2045	2050	2055	2060	RPS	FPS
AU			RPS		FPS					10%	5%
BRA				RPS		FPS				7%	4%
CAN		RPS	FPS							20%	10%
CHI				RPS		FPS				7%	4%
CSA				RPS		FPS				7%	4%
EEU			RPS		FPS					10%	5%
EURA						RPS			FPS	4%	3%
GCC						RPS			FPS	4%	3%
IND						RPS			FPS	4%	3%
INDO						RPS			FPS	4%	3%
JAP				RPS		FPS				7%	4%
MENA						RPS			FPS	4%	3%
RU						RPS			FPS	4%	3%
SA						RPS			FPS	4%	3%
SAF				RPS	FPS					7%	5%
SEAO						RPS			FPS	4%	3%
SK				RPS		FPS				7%	4%
SSA						RPS			FPS	4%	3%
UK		Both								20%	20%
USA			RPS	FPS						10%	7%
WEU			RPS		FPS					10%	5%

** reduction in coal generation as a share of 2020 levels*

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Ending deforestation by 2025 in 1.5°C RPS will require immediate policy action

Deforestation of natural forest halted through strong and effective command and control policy

Countries/region like CAN, GCC, JAP, SA, SK, UK have virtually zero net deforestation

Carbon pricing and NDC commitments combine to stop net deforestation by 2030

	End of deforestation			Change in forest cover 2020-2050 (m ha)	
	2020	2025	2030	IPR FPS 2021	IPR 1.5C RPS
AU		FPSRPS		3	3
BRA		RPS	FPS	12	16
CAN	FPSRPS			1	1
CHI		RPS	FPS	92	92
CSA		RPS	FPS	10	14
EEU		FPSRPS		4	4
EURA		RPS	FPS	1	2
GCC	FPSRPS			0	0
IND		RPS	FPS	13	13
INDO		RPS	FPS	2	6
JAP	FPSRPS			0	0
MENA		RPS	FPS	-1	1
RU		RPS	FPS	1	2
SA	FPSRPS			0	0
SAF		RPS	FPS	0	1
SEAO		RPS	FPS	3	11
SK	FPSRPS			0	0
SSA		RPS	FPS	0	15
UK	FPSRPS			1	1
USA		FPSRPS		17	17
WEU		RPS	FPS	11	12

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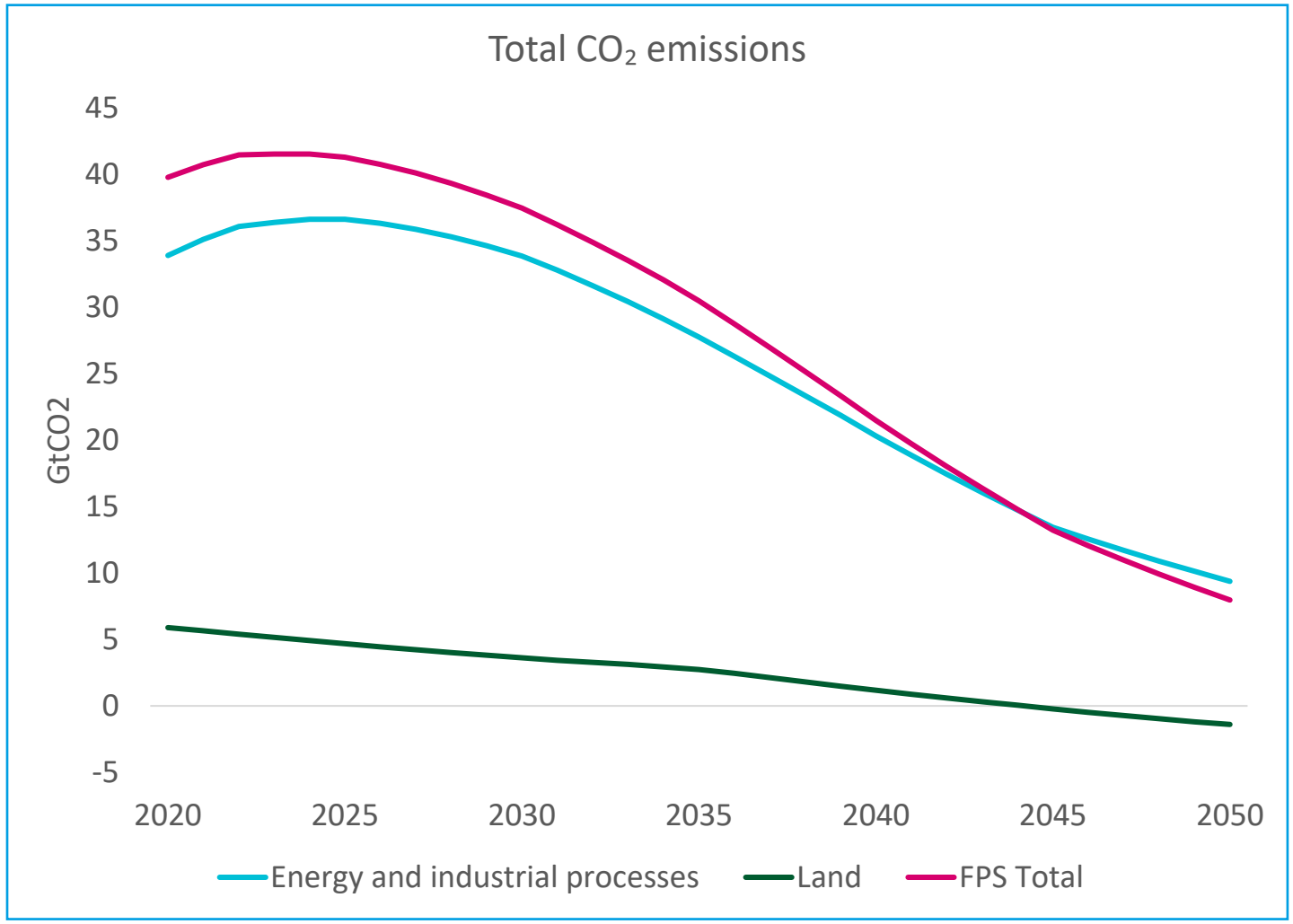
IPR FPS and 1.5°C RPS Emissions pathways

IPR FPS 2021 total (energy and land) CO_2 emissions fall from around 40 Gt in 2020 to 8 Gt in 2050, with the land sector becoming a net carbon sink before 2050



- Total CO_2 emissions fall from around 40 Gt in 2020 to 8 Gt in 2100
- This fall is driven by reduction in emissions across both energy and land
- Energy sector emissions fall from around 34 $GtCO_2$ in 2020 to 9 $GtCO_2$ in 2100
- Land sector emissions fall from around 6 $GtCO_2$ in 2020 to zero in 2045
- Beyond 2045 the land sector becomes a net carbon sink and removes around 1 $GtCO_2$ per year by 2050

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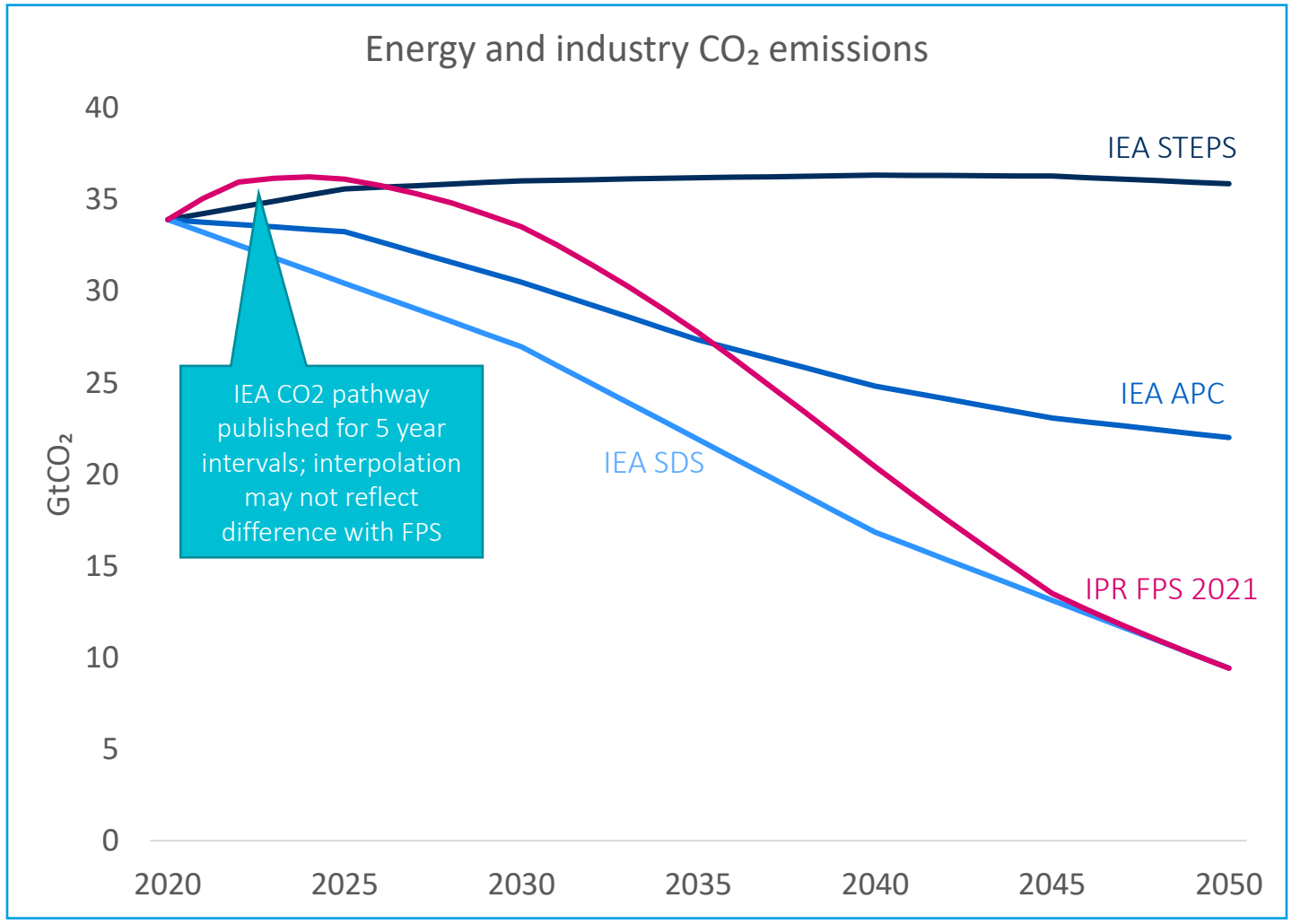
IPR FPS 2021 energy related CO_2 emissions vs IEA APC and IEA SDS



- Between 2020 and 2030, energy-related CO_2 emissions fall only slightly, as new policies begin to take effect
- By 2035 emissions are comparable to the IEA Announced Pledges Case (APC)
- Over this period emissions are well above those in IEA Sustainable Development Scenario (SDS), which represents immediate climate action
- From around 2035, emissions fall well below APC levels as more ambitious IPR 2021 forecast policies take effect
- By around 2045, emissions are line with those in IEA SDS

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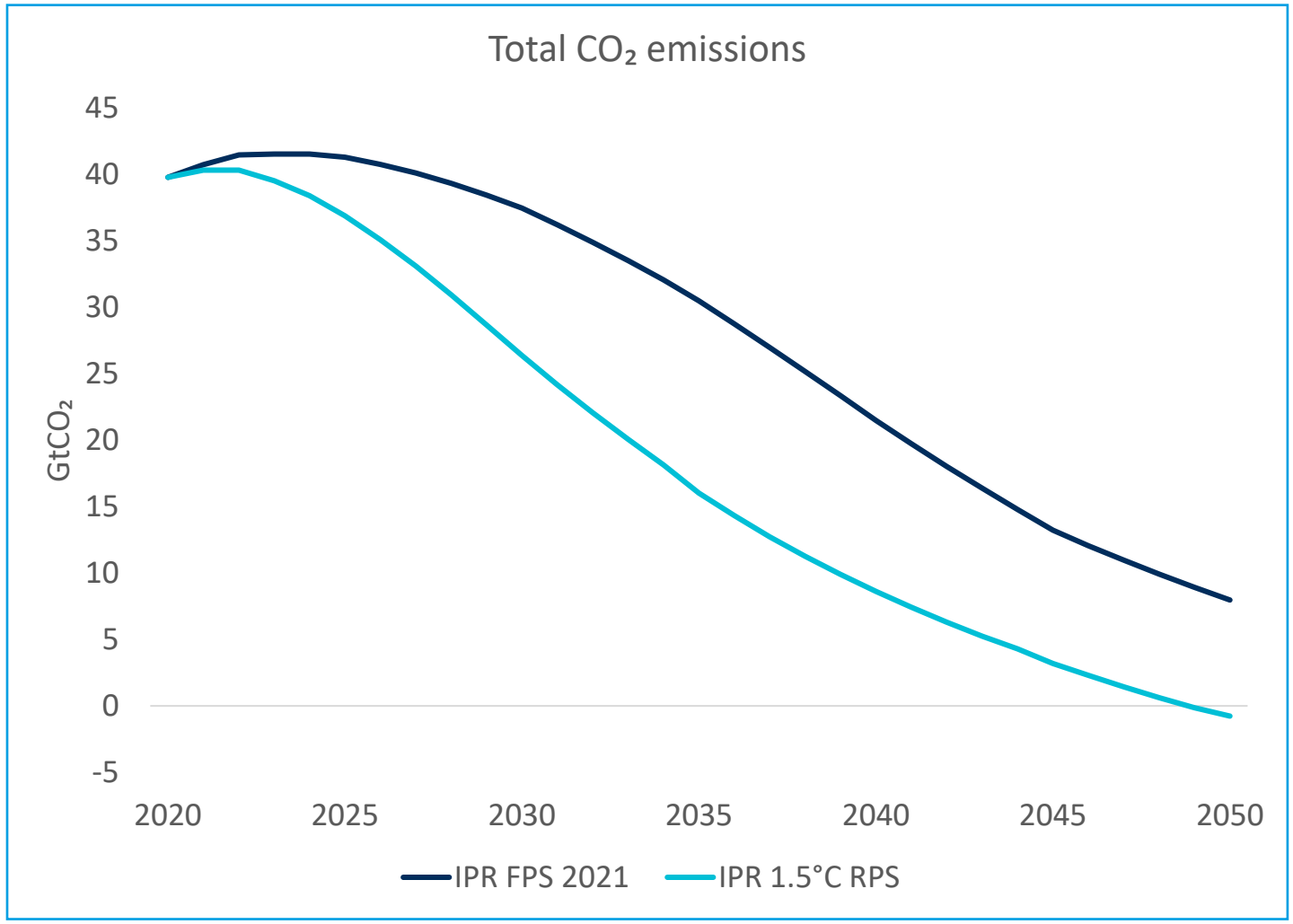
* Data on IEA CO2 pathways are published in 5-year intervals ** IPR FPS 2019 was modelled in 5-year increments
Note: IEA scenario data based on May 2021 Net Zero Emissions report; in WEO2021, IEA APC is renamed Announced Pledges Scenario (APS), with a slightly modified emissions pathway

Relative to the IPR FPS 2021, total CO_2 emissions (land and energy) in the IPR 1.5°C RPS decline rapidly, and are below zero by 2050



- IPR 1.5°C RPS cumulative CO_2 emissions are around 30% below IPR FPS 2021 levels between 2020 and 50
- IPR 1.5°C RPS emissions fall around 35% between 2020 and 2030, compared to 13% under the IPR FPS 2021
- By 2030 IPR 1.5°C RPS emissions are 8 $GtCO_2$ lower than IPR FPS 2021, and are below zero by 2050

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IPR 1.5°C RPS Emissions Reduction Table

- Many investors are looking to decarbonise their portfolios based on emissions reductions.
- For 1.5°C aligning investors, the table shows how in the Required Policy Scenario (RPS)much emissions fall in the energy and combined energy and land use sectors from the 2020 base year every 5years
- Note that 1.5°C RPS includes a bounce back from 2020 depressed Covid19 levels
- We suggest that 2030 is considered target to achieve as soon as possible for 1.5°C alignment.

Year	Change since 2020	
	Energy	Energy and land
2020	Base Year	Base Year
2025	-1%	-7%
2030	-27%	-33%
2035	-53%	-57%
2040	-73%	-76%
2045	-88%	-91%
2050	-96%	-102%

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Policy methodology for the IPR 1.5°C RPS

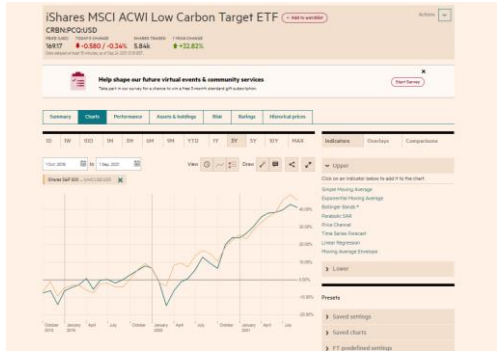
Our analysis allows us to pinpoint the actions needed in key sectors to achieve an outcome consistent with 1.5°C

- We assume carbon prices to be similar to IPR FPS 2021 levels, as the extremely rapid transition required to achieve IPR 1.5°C RPS will be challenging to achieve through carbon pricing mechanisms beyond what is already expected in the IPR FPS 2021
- Instead, what drives the additional impact of the IPR 1.5°C RPS is performance standards (bans) or more direct subsidies driven by policymakers
- These further policies would need to be announced as quickly as possible, certainly by the 2023 Paris stocktake
- Implementation is required immediately upon announcement

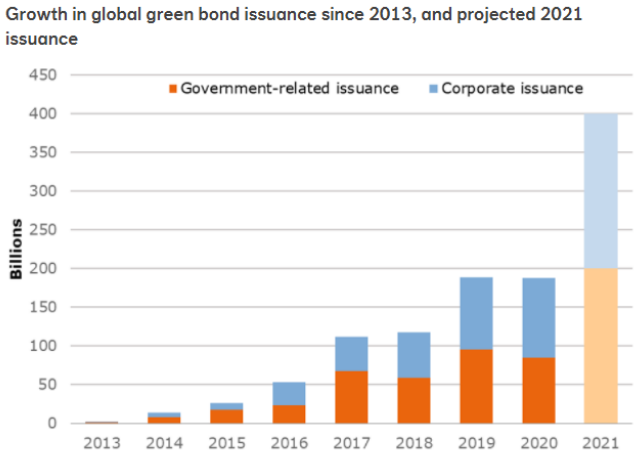
Investor Landscape

The transition is well underway! Investment Performance since IPR launched at PRI In Person in 2018

Equities

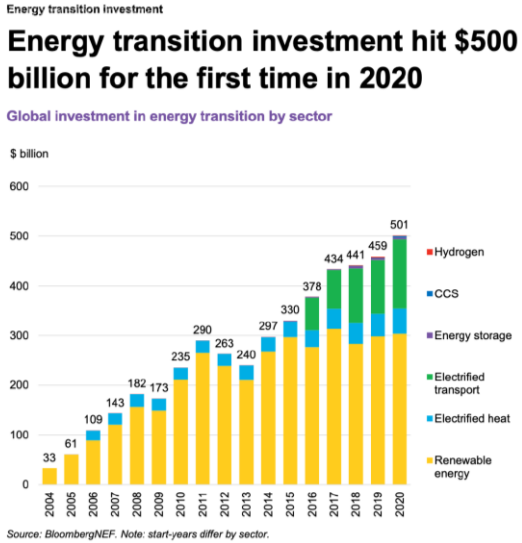


Debt



Source: NN Investment Partners

Infrastructure



Source: BloombergNEF. Note: start-years differ by sector.

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Type of investment approach in relation to climate change

From a portfolio perspective, we can categorise approaches into four groups:

1. **The price takers** – happy to roll the dice in the market and ***hope for the best. Broad passive benchmarks unlikely to optimise risks and opportunities.***

2. **The stress-testers (eg NGFS, RPS, NZE)** – prepared to look at the risks of temperature-constrained scenarios but mostly seeing low probability for anything that might impact their portfolio short to medium term. Sometimes driven by regulatory compliance. ***Evidence suggests often little action as a result so far.***

3. **The aligners (eg NZAoA)** – committed to long-term targets such as the Paris Agreement and Net Zero by 2050. There are a small numbers of these "leaders" ***but as yet few have fully aligned.*** *Some funds approaching this initially via fossil fuel* ***divestment****.*

4. **The forecasters** – active investors looking for risks and opportunities who are open to a higher probability scenario like IPR's Forecast Policy Scenario, and mitigating at an early stage. These are what might be termed the main stream investors who need an economic/regulatory reason to act, but if they do so, ***could shift large amounts of capital***

In practice, many investors are employing some or all of these together!

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How IPR fits each investment approach

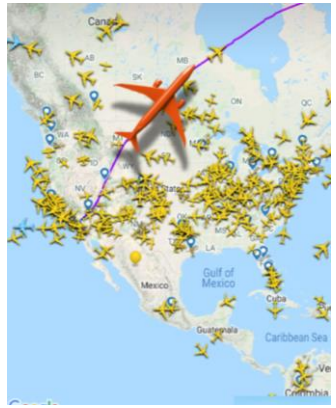
	IPR FPS	1.5°C RPS
Passive Equity Investment for broad benchmark	• Engagement only strategy • Difficulty in finding upside opportunities is leading investors to other asset classes • Changing to FPS – like benchmark	• Engagement only strategy • Could find upside opportunities in other asset classes • Change to an RPS benchmark
Stress Testers	• Still a significant departure from BAU	• Severe outcomes. Allocated low probability for many investors. Significant portfolio shifts rare
Net Zero Alignment	• Can use FPS as a realistic step towards the ambition. • Mitigation against IPR will lower portfolio emissions • Maintains risk-return focus	• Interim 2025 and 2030 targets rely on policy settings for return • Risks of underperformance if policy doesn't materialise • Relies heavily on company engagement if there are regulatory or internal barriers to active management • Major loss of diversification and associated increase in concentration risk • Criteria for divestment may not capture transitioning companies
IPR Forecasting	• Looking to maximise risk-return and opportunities • Doing portfolio construction • Not limited by tracking error / broad benchmarks	n/a

The IPR value Drivers

The Value Drivers Database Explained

The IPR Value Drivers database is the largest and most comprehensive in the world enabling direct input into investor valuation models

- Data summary:
  - All major jurisdictions covered
  - Annualised data
  - Emissions by GHG type
  - Investment by technology type by jurisdiction by sector
  - Power Demand by fuel type by jurisdiction
  - All major sectors covered
  - Huge Land Use component
  - Price data derived
  - Macro-economic assumptions
- Unique data
- Designed in collaboration with IPR Strategic Partners and research partners
- Will facilitate opportunity to build new wave of product
- Hundreds of thousands of data points



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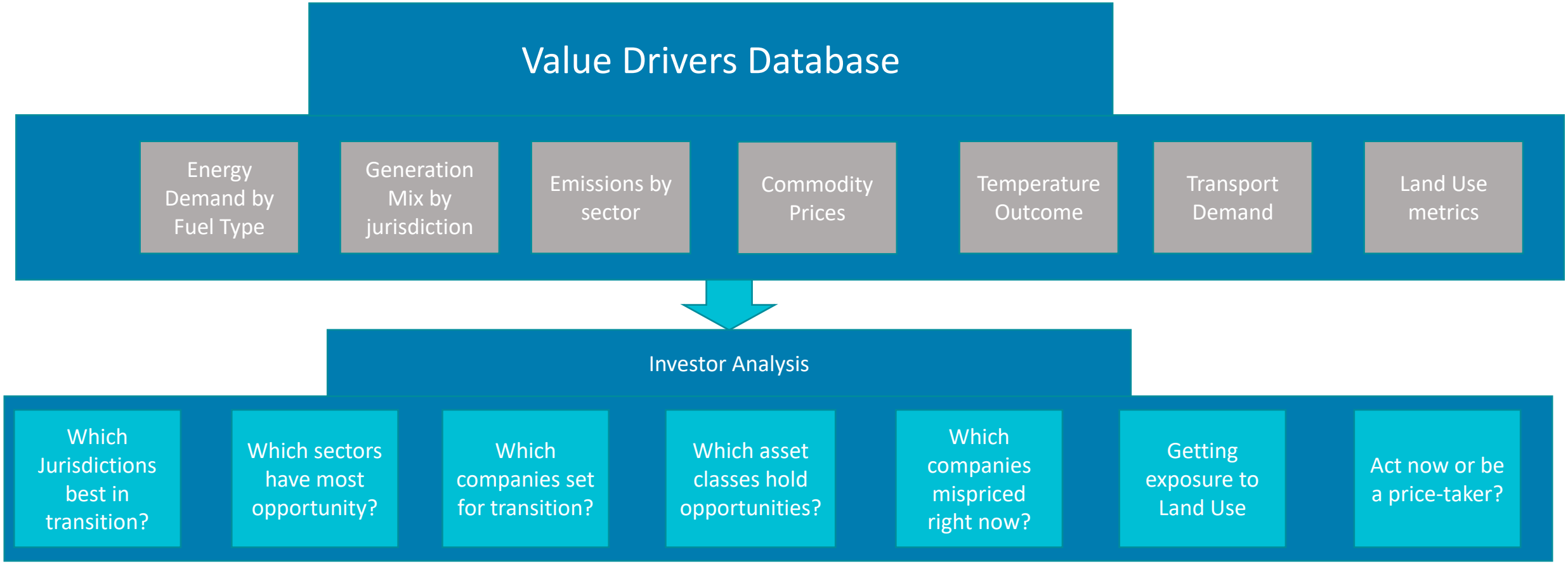
Integration of IPR FPS Value Drivers



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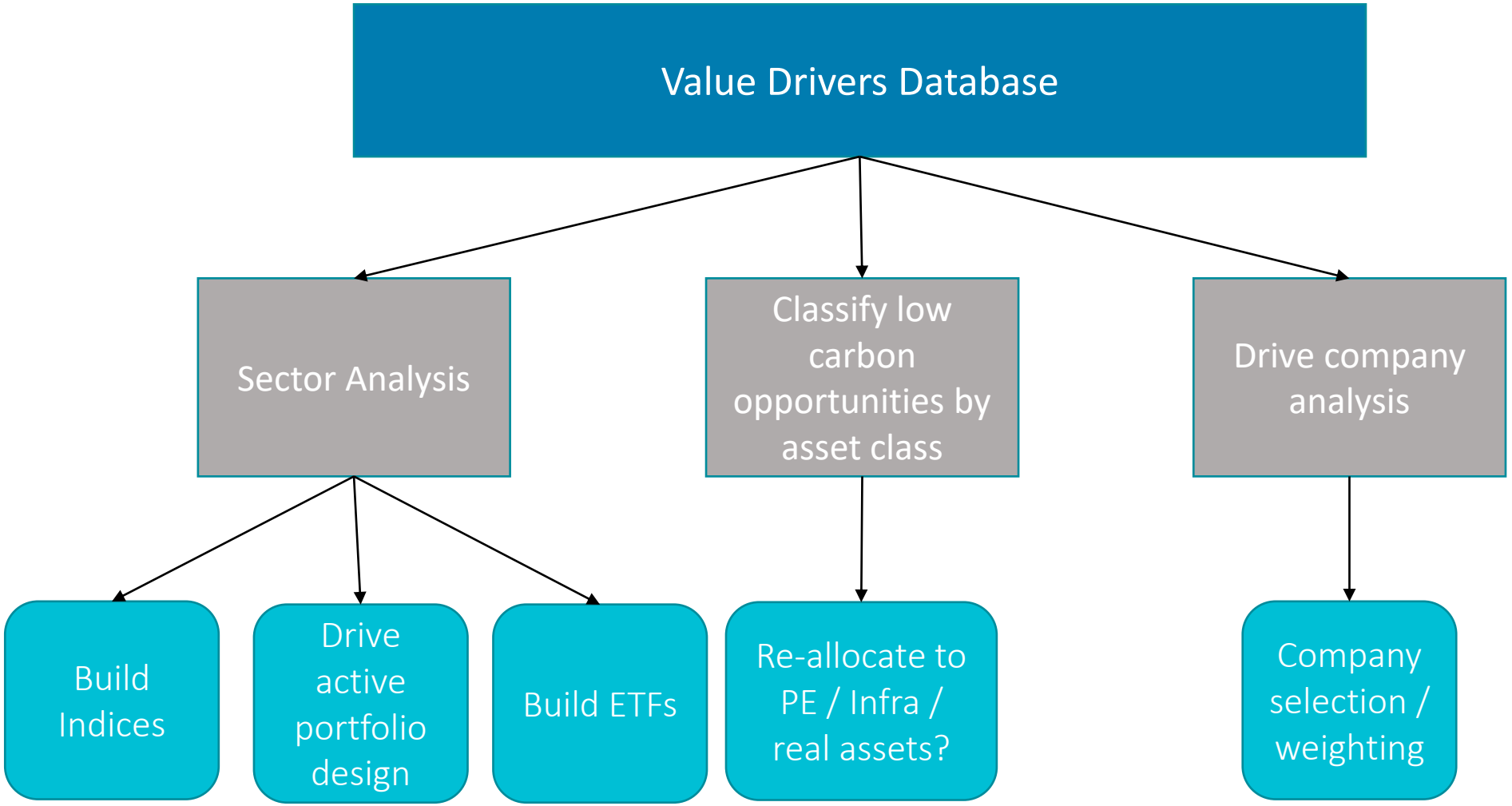
Example Use of Value Drivers



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IPR and Sector Analysis – Example process from IPR 2019

Company outputs from the Forecast Policy Scenario modelling

Outcomes for companies are driven by the IPR Forecast Policy levers*, particularly the coal and ICE phase-out, carbon pricing and zero-carbon power

Company (anonymised)	Description	Coal phase-out	ICE sales bans	Carbon pricing	CCS and industry decarbonisation	Zero-carbon power	Energy efficiency	Land use-based greenhouse gas removal	Agriculture
A	Utility (primarily renewable generation)	✓	(✓)	✓	✗	✓	(✓)	✗	✗
B	Utility (primarily coal generation)	✓	(✓)	✓	✗	✓	(✓)	✗	✗
C	Integrated Oil & Gas	(✓)	✓	✓	✓	(✓)	(✓)	✗	✗

Indirect effect through demand for electricity

Indirect effect through demand for power

Indirect effect through demand for gas power

Indirect effect through demand

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Note: Further information on the IPR Forecast Policy Levers can be found on the PRI website.
Source: Vivid Economics analysis

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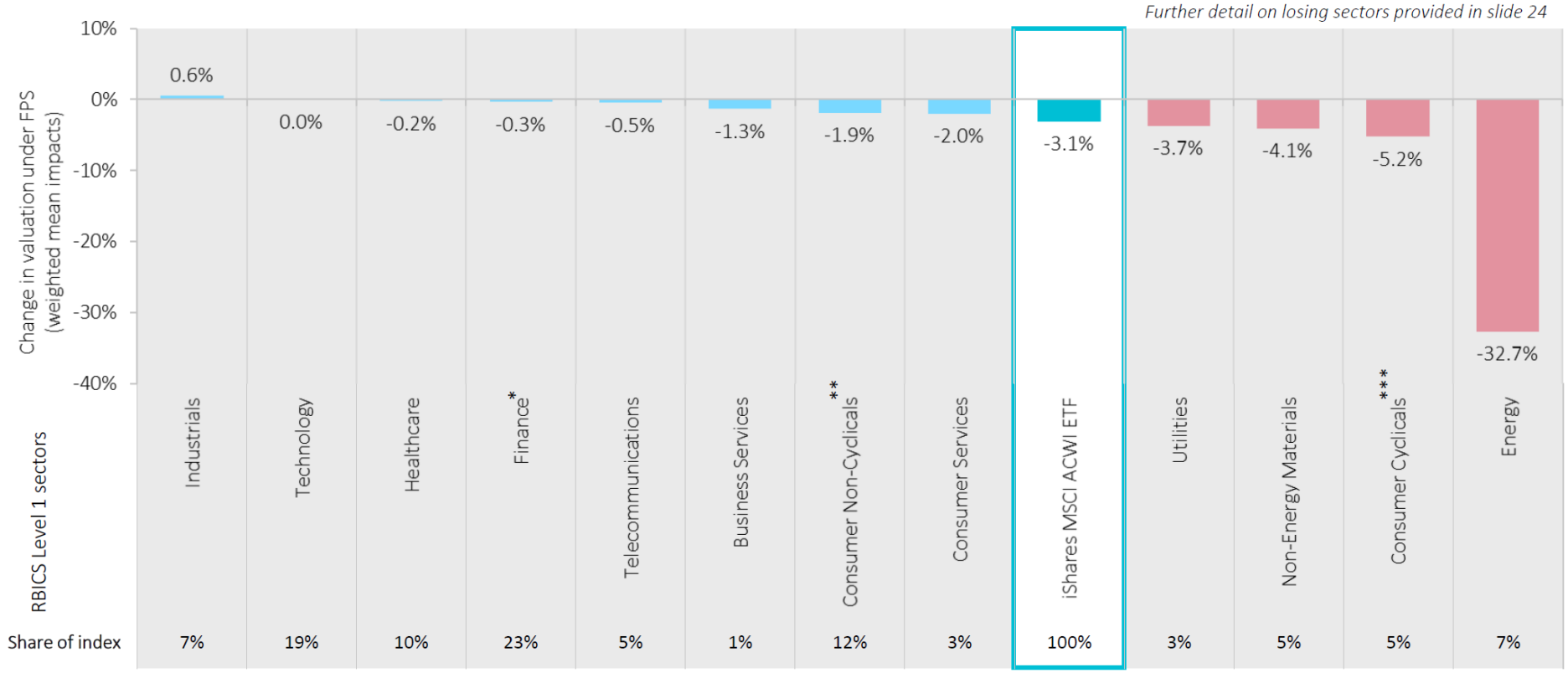
IPR and Sector Analysis – Example use of value drivers from IPR 2019

Equity impacts of the Inevitable Policy Response

Sectoral: Overall index-level impacts are small in percentage terms since the majority of companies in the index are in sectors with low exposure to climate policy

Further detail on losing sectors provided in slide 24



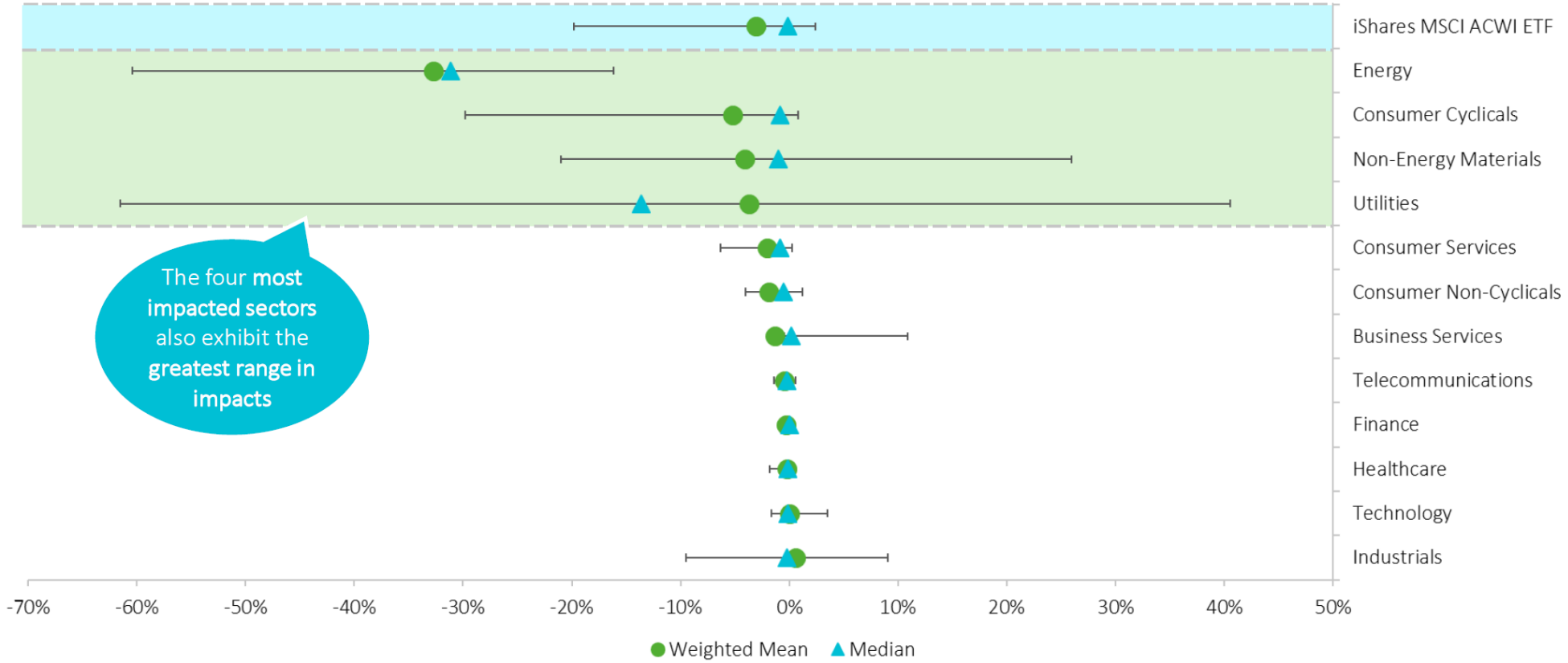
* Finance sector impacts do not include impacts on financial holdings. ** Consumer Non-Cyclicals include Agriculture. This sector is explored further in the sector insights section. *** Consumer Cyclicals include Automobiles (see sector results for further detail).

Source: Vivid Economics Net Zero Toolkit

IPR and Sector Analysis – Example use of value drivers from IPR 2019

Equity impacts of the Inevitable Policy Response

Sectoral: Within-sector variation can be significant, particularly for the four most impacted sectors in the index: Energy, Consumer Cyclicals, Non-Energy Materials and Utilities



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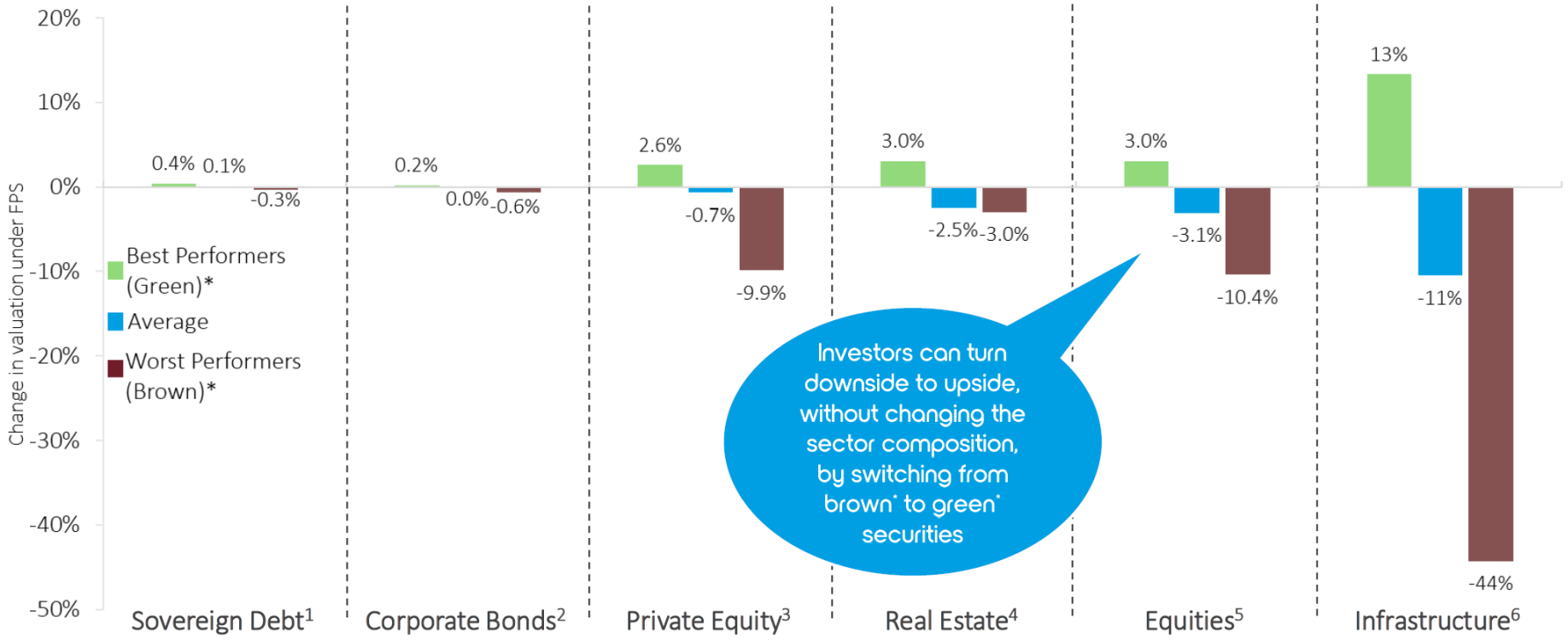
Notes: Error bars indicate the 10th and 90th percentiles of impact within each sector. Sectors: RBICS level 1.
Source: Vivid Economics Net Zero Toolkit

Example use of value drivers into asset class analysis

Strategic Asset Allocation: However, the big opportunities are by tilting portfolios towards greener options within asset classes – especially in green infrastructure



Green* and Brown* indices for Corporate Bonds, Private equity, Read Estate, Equities, and Infrastructure are constructed by applying sector weights to the 90th and 10th percentile of companies (in terms of valuation change in FPS). Sovereign debt Green / Brown impacts are from 10Y debt from Canada and the Netherlands. Real Estate Green assumes carbon neutral building with no carbon costs, whereas brown is average buildings with no abatement.

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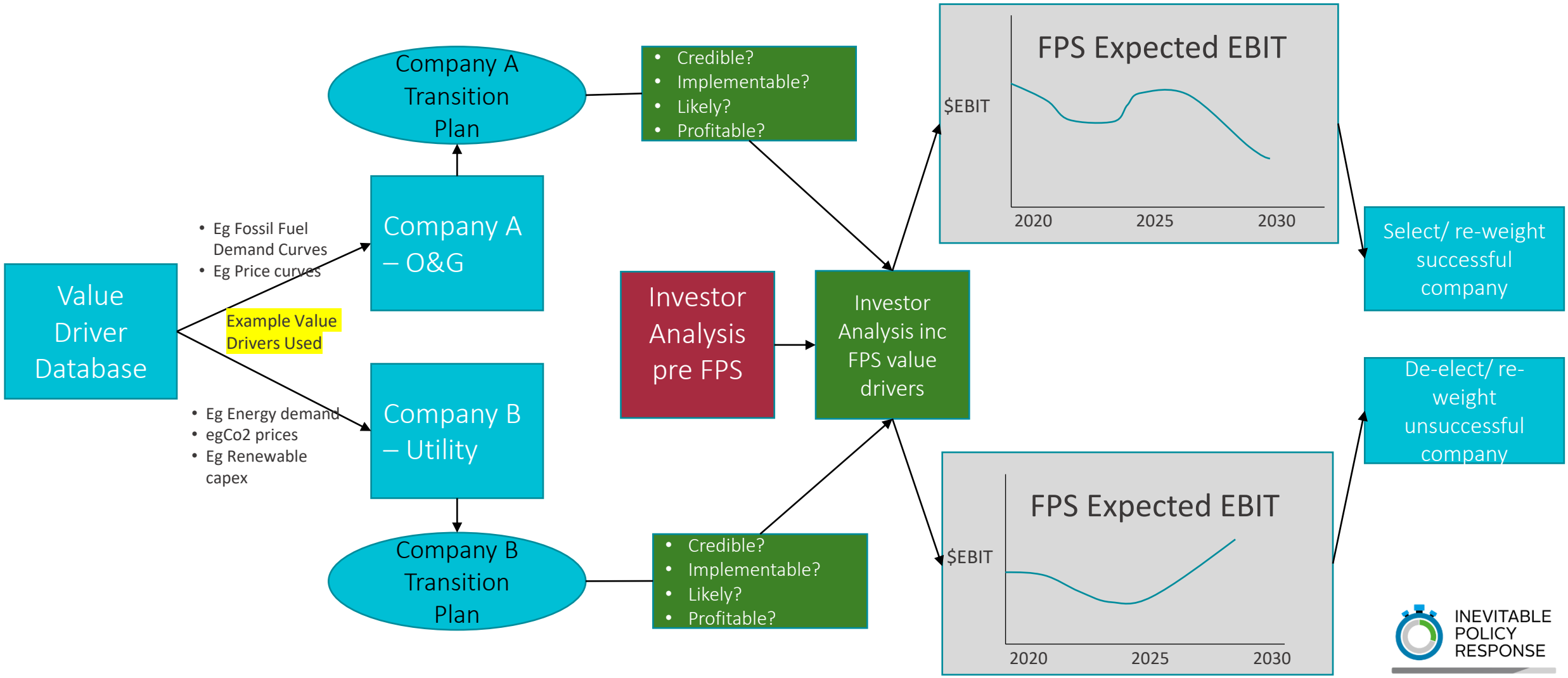
Value Driver Lifecycle – Company Level Example



PACTA and the new Transition Disruption Metric

TDM based in the FPS (Forecast Policy Scenario) scenario developed by IPR

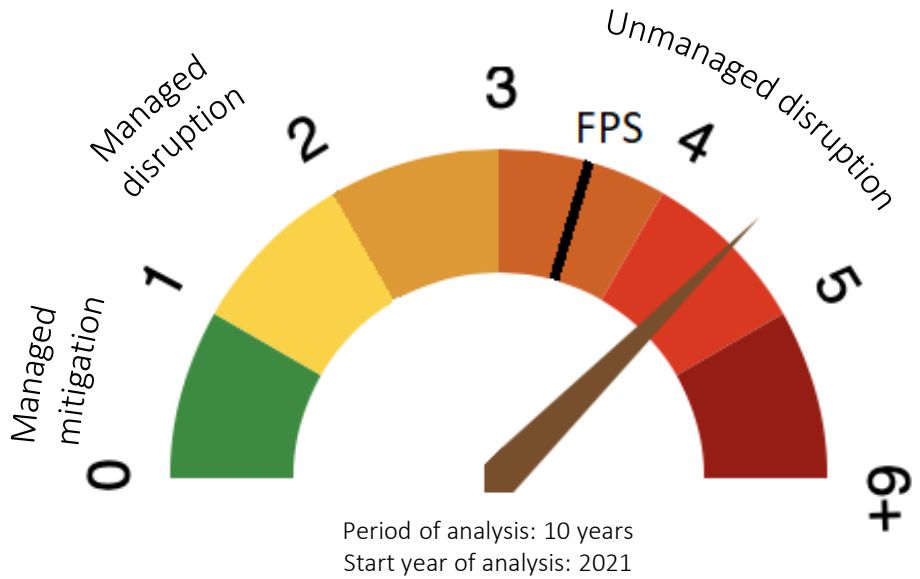
PACTA
Paris Agreement Capital Transition Assessment

PACTA Transition Disruption Metric (TDM)

- The TDM metric is complementary to the PACTA alignment model. If an investor wants to mitigate the policy risk would need to move ahead of the FPS-IPR scenario.
- The metric measures the adjustments needed in the portfolio from year 6 to 10 (2026 - 2030) relative to portfolio's pace in the first 5 years (2021-2025), in order to be in line with the FPS scenario by the end of 2030.
- The higher the number, the higher the likely portfolio disruption in the medium-term.
- If investors want a smooth transition to the scenario, they should start adjusting or engaging with companies at a faster or slower pace according to their results.
- The metric creates a quantitative measurement of potential disruption based on how far the portfolio lags / leads the FPS scenario in the first 5 years. The indicator will be available at technology, and portfolio level, subject to scenario and data availability.

Transition Disruption Metric

Visual representation of the TDM*



Period of analysis: 10 years
Start year of analysis: 2021

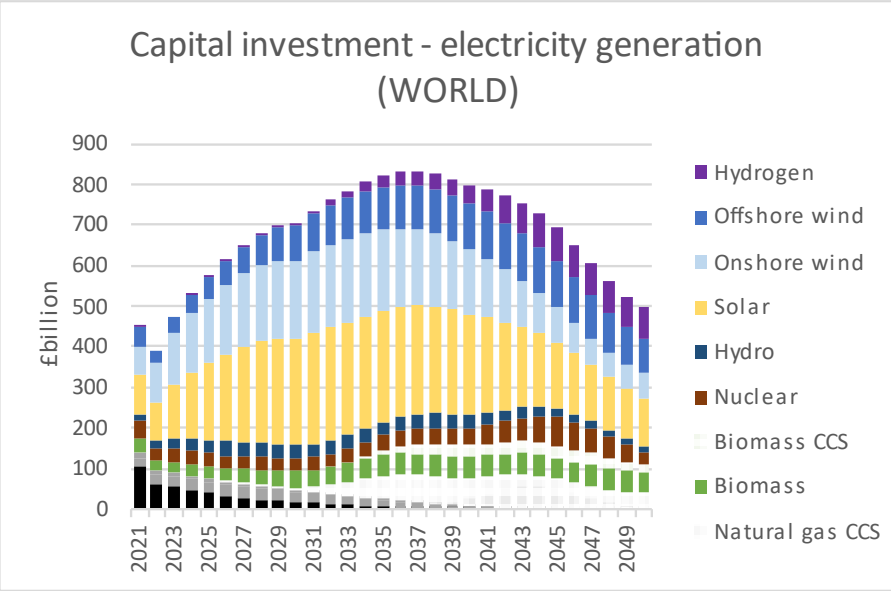
- **Full mitigation (0):** The portfolio is ahead of the FPS scenario pathway.
- **Managed mitigation (from 0 to 1):** Residual disruption consistent with the effort in years 1 to 5. Over 1, suggests that the portfolio needs to accelerate the transition relative to its current capital stock evolution projections, but this acceleration is in line with historical growth rates of the sector.
- **Managed disruption (1 to 2):** is in line with the FPS acceleration which involves some disruption that is still manageable.
- **Unmanaged or high disruption (over 2):** An unmanaged or high disruption suggests the portfolio is already lagging the FPS scenario benchmark and will involve significant unmanaged disruption over the next decade if / when the FPS scenario materializes.

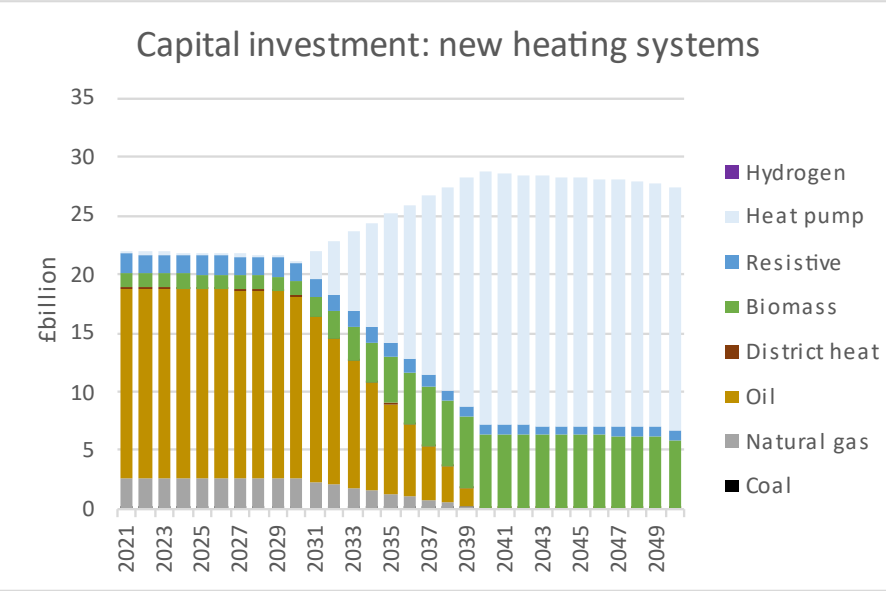
See: https://2degrees-investing.org/resource/pacta/

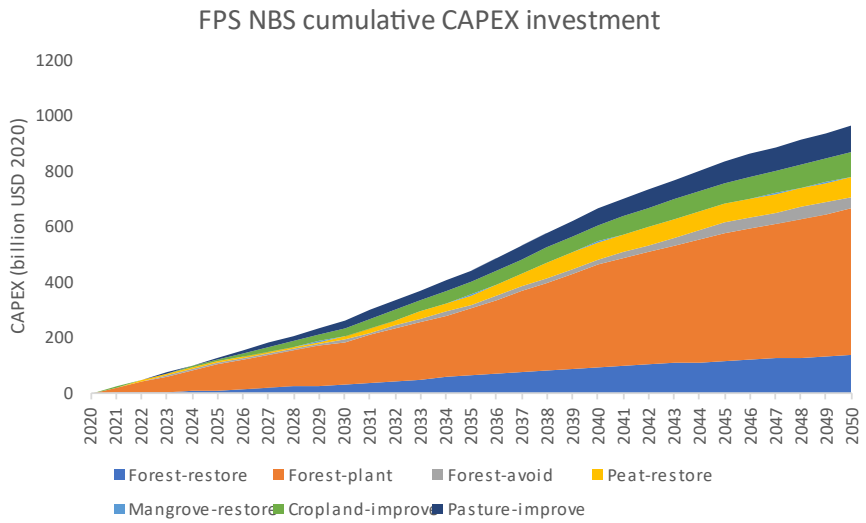
* This visual representation should be considered as an example given that the metric is under construction and may have slight variations.

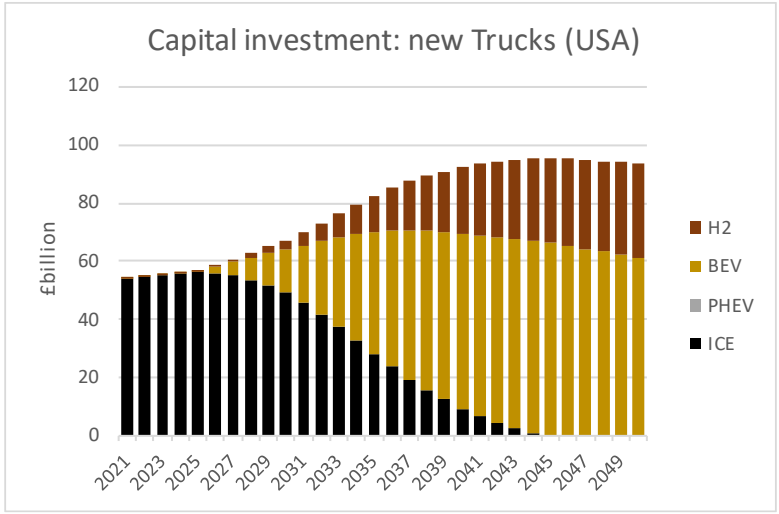
Using IPR Value Drivers to assess opportunities

IPR FPS 2021 - Example Capital Shift Opportunities









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Opportunities Matrix – For active investors

Sectors/ Technologies	Equities	FI	PE	Infra	NBS
CCS	Through Oil and Gas, Industrials	Huge unlisted FF inc. coal, sovereign debt, municipal debt	Commercialising technologies	Retrofit for unlisted coal	As part of BECCS development
EV	Leading auto transitioners	Leading auto transitioners	Batteries, smart car, smart charging	Charging infra, smart grid	N/A
Renewables	For listed Utilities	For unlisted utilities	New technologies, smart grid, balancing	New builds	N/A
Hydrogen	Listed utilities/ industrials 2030s	Early, late stage debt and transition debt	Development stage PE through to commercialising	N/A	N/A
Clean industrials	Leading low carbon industrials	Leading low carbon industrials	New technology	N/A	N/A

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Getting Exposure to the Land Use Elephant

	Forest Conservation and Reforestation	Improved Land Management	Food Production Innovation & Technology
Equities	• Deforestation-free commodities and supply chains • Deforestation-free agribusiness	• Improved performance in Timberland REITS • Improved performance in agribusiness companies	• As retail adoption emerges
Debt	• Deforestation-free commodities and supply chains • Deforestation-free agribusiness • Reforestation / afforestation	• Financing for improved performance in Timberland REITS • Financing for improved performance in agribusiness companies	• Commercialisation
Infrastructure & Energy	• Integrate forest conservation and reforestation into infra and energy projects	n/a	n/a
Real Assets	• Reallocate to forestry asset class with high sustainability performance • Opportunities to invest in carbon markets integrated with forestry investment	• Reallocate to forestry asset class with high sustainability performance • Reallocate to agriculture with high sustainability performance • Opportunities to invest in forest and soil carbon markets integrated with forestry and agricultural investment	• Reallocate unused pasture and grazing land toward climate-positive forestry and climate-positive agriculture
PE	• Investment in technology supporting scaling of conservation and reforestation	• Investment in technology supporting scaling of improved land management and soil carbon management • Investment in circular bioeconomy technologies (e.g. mass timber) replacing cement, steel, and plastics	• Significant opportunities across the value chain

INEVITABLE POLICY RESPONSE

Highlighting FPS opportunities to 2030 – The Core Investor Timeframe

- Developed country deepest decarbonisation to 2030 represents biggest opportunities
- Early positioning by investors from 2025 in developing and emerging economies to take advantage of opportunities
- Stronger forecasts in industrials implying leadership opportunities in steel and cement
- Investor Gas transition story opportunity not born out by FPS post 2025
- Investors should beware unlisted coal debt with possible sovereign / local debt implications
- Continued strong opportunities in solar and wind (particularly US and China) – within Infra / PE or will utility balance sheets be the opportunity.

Very significant opportunities in Land Use – especially forestry

INEVITABLE POLICY RESPONSE

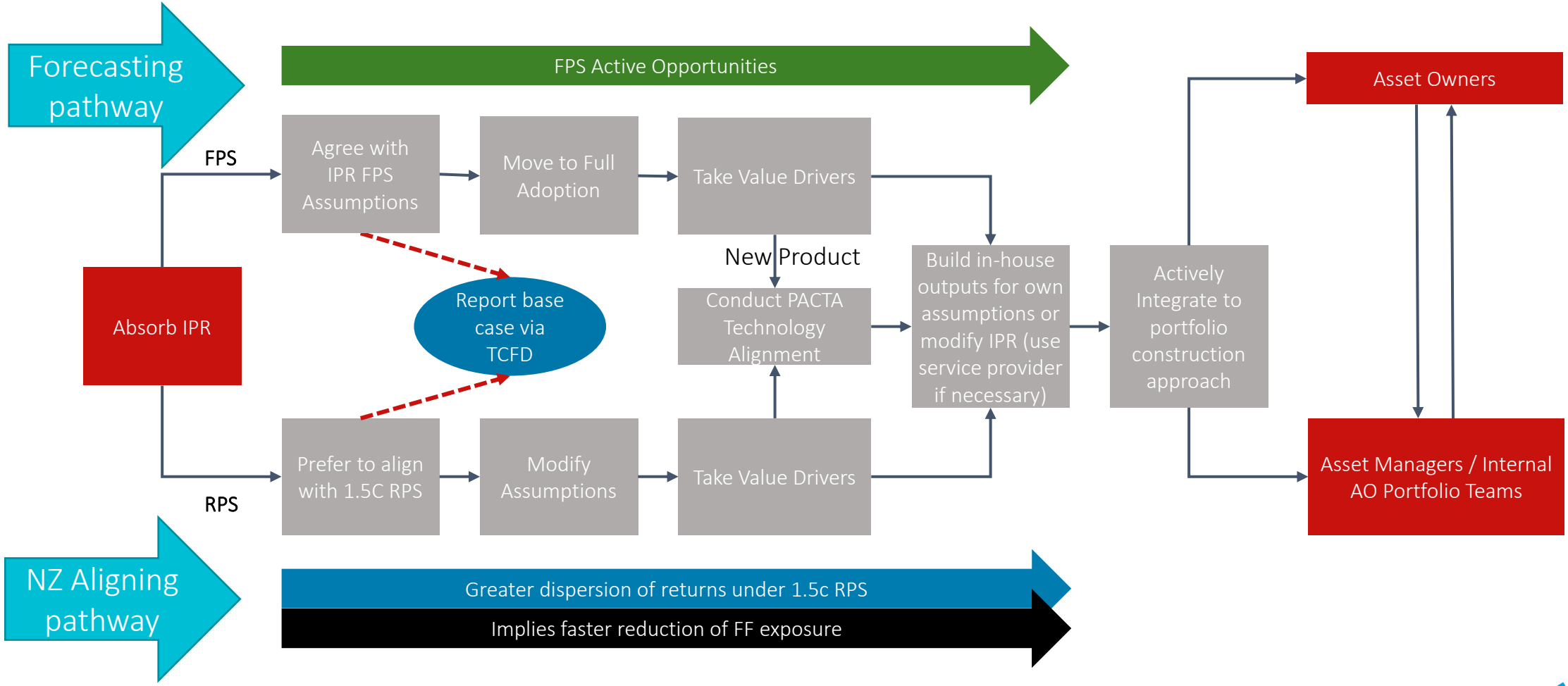
IPR Across the Investment Chain

Interaction between Net Zero targets and a realistic forecast

- IPR FPS can become the 2020-2030 stepping stone for AOA investors.
- As acknowledged by AoA, targets can be challenging for portfolio teams to implement. Aligners canvass carbon foot printing and emission targets which have in themselves been challenged
- Some fiduciary investors struggle with implications of large scale divestment, which may be too blunt an instrument for some investors and ignores company transition planning.
- Building a portfolio around IPR FPS mitigation will reduce emissions suiting climate aware investors not fully convinced by RPS at this stage.
- Switching listed equity to real assets is the most impactful real world effect and is accomplished in IPR FPS through thematic capital recycling across asset classes.
- There is the associated issue that portfolio action eg divestment may not translate through to real world actions to reduce emissions hence the importance of exploring linkages between Net Zero and IPR-FPS

INEVITABLE POLICY RESPONSE

IPR Investor Integration



Dynamics of the investment chain

Asset Owners

- Board approval for thematic strategy
- Asset Re-allocation
- Manager selection criteria
- Forward looking mandate structures
- Passive/ active split
- Service provider alignment-consultants
- Recycle capital
- Engagement base case

New Product

Demand for product

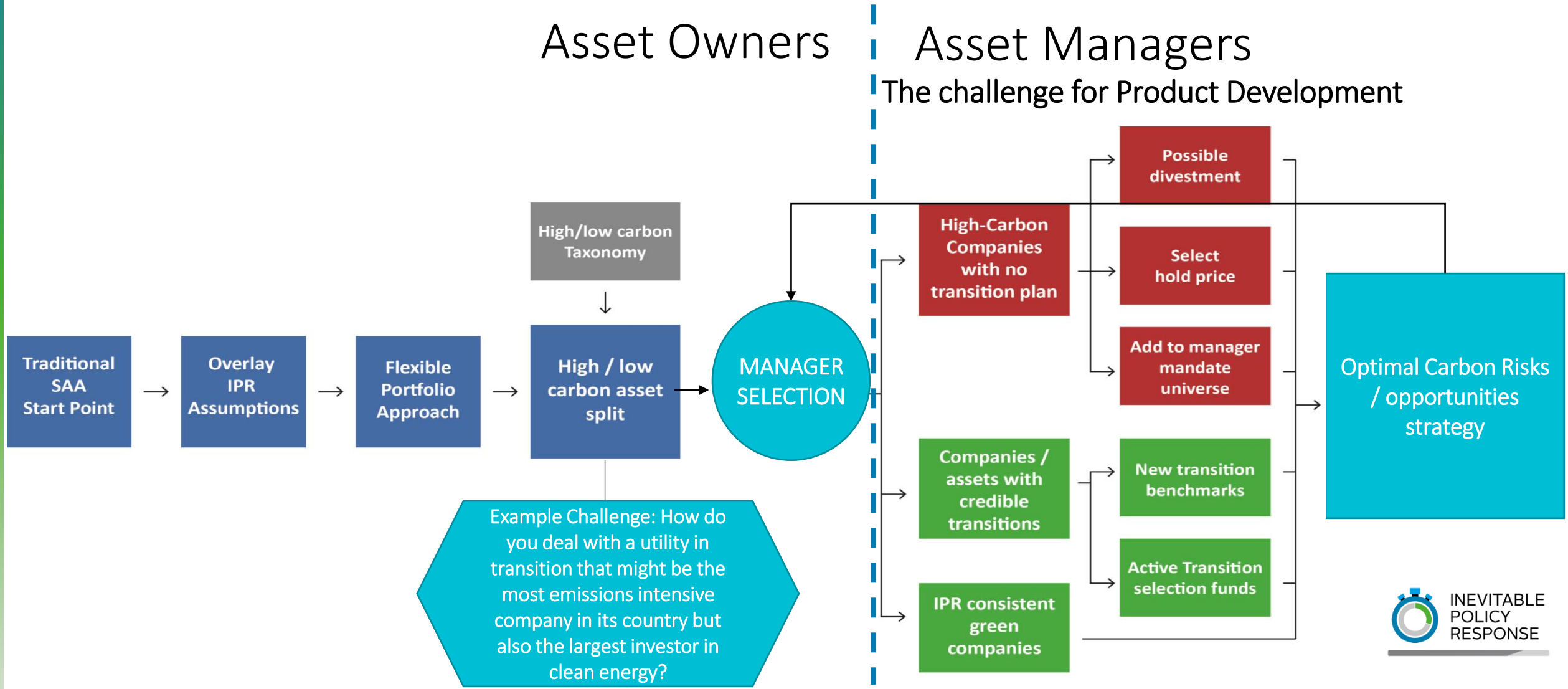
Incentives to price reality

Asset Managers / Internal AO Portfolio Teams

- Build Indices / ETFs
- Engage with companies
- Engage with policymakers
- Underweight high carbon exposures
- Reward Strong transitioning companies
- Seek low carbon pure-plays eg infra / PE/ small caps
- Service provider alignment

INEVITABLE POLICY RESPONSE

From Asset Allocation to Company Analysis



Companies in Transition - The Challenge for Product Development

- As companies go into transition it is a challenge to then decide if they are in effect going to be low carbon and so should be considered as eligible for low carbon investment. Possible approaches include:
  - Credible Net Zero targets e.g. via SBTi
  - Bottom up company analysis which is extremely complex
- Capacity and knowledge takes time to build and is scarce in the market
- Asset Owners sometimes slow to recognise need for new product
- Track record unavailable for new product
- Tracking error barriers exist in some asset owners
- Index providers will take time to create new benchmarks

INEVITABLE POLICY RESPONSE

Macro-economic Capital Market Assumptions issues for investors

- GDP, Inflation and interest rates are important for both asset owners and asset managers
- IPR FPS does not forecast significant GDP reductions. Indeed FPS cannot be realistic with large GDP losses as we do not believe governments will create recessionary policies to solve climate change
- We believe that central banks and governments will stimulate to counter any depressionary policy outcomes
- The tension that central banks face in setting interest rates will be between fighting the inflationary and recessionary pressures of the transition, especially in the next decade
- Our macroeconomic analysis indicates that the relatively modest magnitude of inflationary/ recessionary pressures means central banks can manage successfully and generally keep interest rates a bit lower in the near term (to fight recessionary pressure) while pushing interest rates back up to then fight inflationary pressure

INEVITABLE POLICY RESPONSE

FPS results 2030: Climate change transition would produce mild negative impacts in most economies over the next decade

Impacts by 2030:

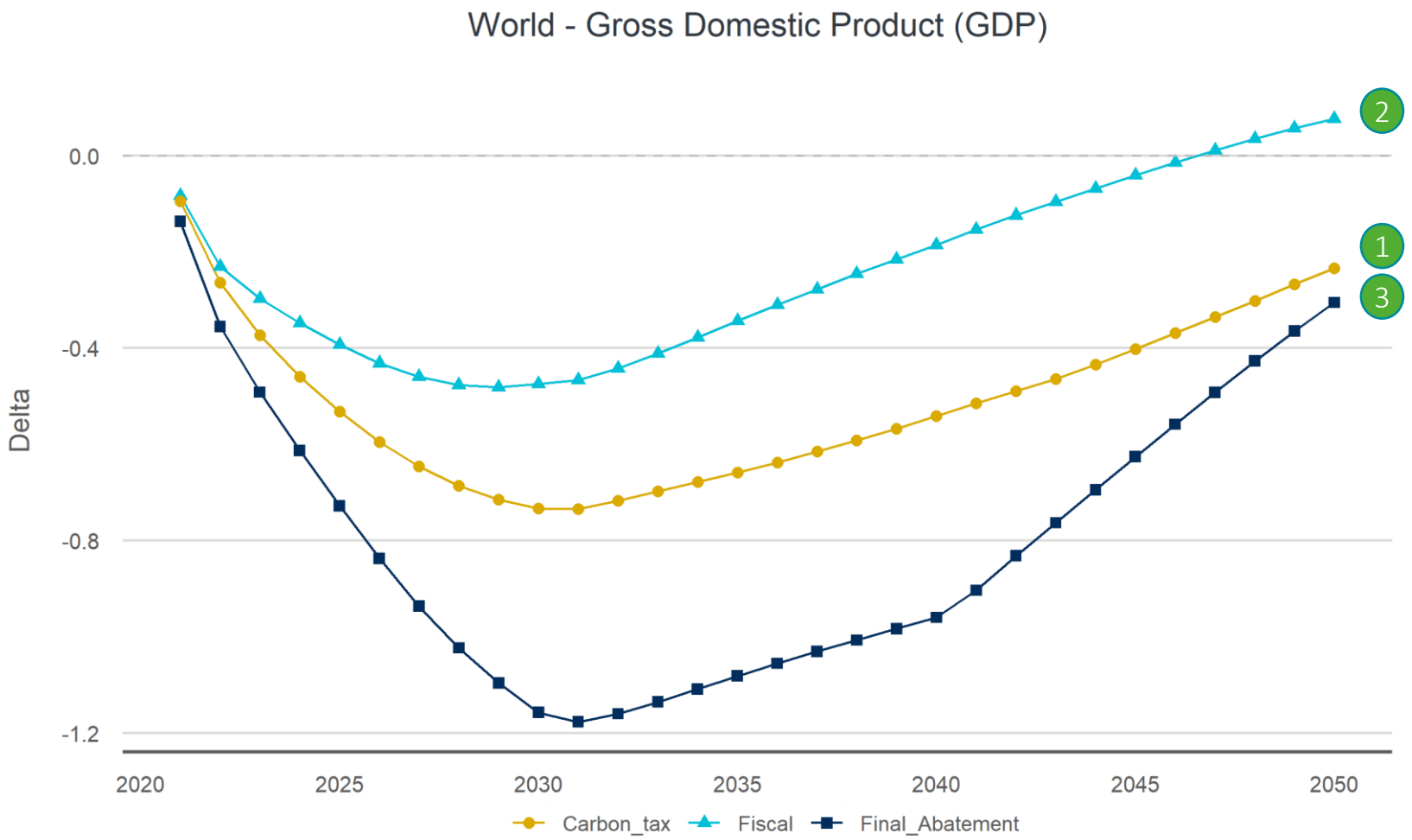
- 20 out of 21 countries/regions experience lower GDP in FPS compared to the baseline.
- For the majority of economies by 2030 the carbon tax and the abatement shocks have a negative impact on the economy compared to the baseline whilst the fiscal shock has an offsetting impact.
- Inflation is slightly higher in the FPS compared to the baseline for 2/3 of the economies
- All countries would see higher nominal long term interest rates in FPS compared to baseline. This is the result of inflationary pressures and increments in real interest rates in FPS compared to baseline.
- Most developing countries/regions see further depreciation (compared to baseline) in their exchange rates under FPS with limited impact through exports and GDP.
- Most economies would see minimal unemployment rate differences between FPS and baseline.

INEVITABLE POLICY RESPONSE

IPR – macroeconomic impact value drivers:

- **GDP**
- **Inflation rate**
- **Fossil Fuel Prices**
- **Long term interest rate**
- **Policy Interest Rate**
- **Unemployment rate**
- **Real personal disposable income**
- **Private sector investment**
- **Government investment**
- **Government debt**
- **House prices**
- **Effective exchange rate**

GDP impacts: Global

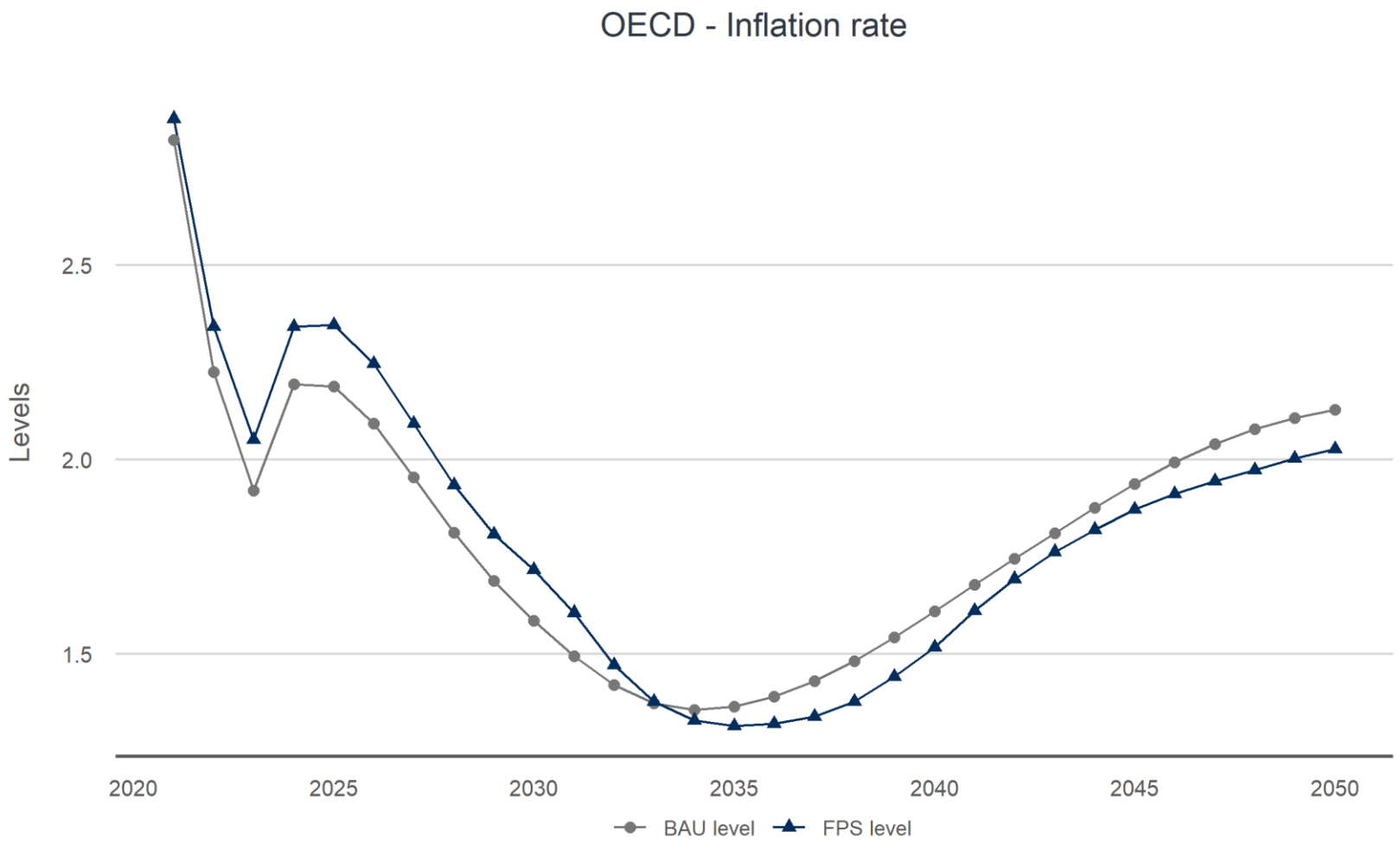


- Most negative impacts are significantly mitigated by 2050 (see dark blue line for the cumulative FPS impact)
- FPS's carbon tax shocks and abatement shocks will have mild impact in the global economy by 2030
- This is offset by the fiscal shock were governments can recycle carbon revenues back into the economy

- The IPR 2021 Global final impact is less severe when compared to the IPR 2019 impact, which reached -1.8% of GDP by 2050
- IPR impact in 2019 was a gradual decline of GDP with a trough by 2050, unlike in IPR 2021 where GDP troughs around 2030

Source: NIGEM based on Vivid Economics inputs

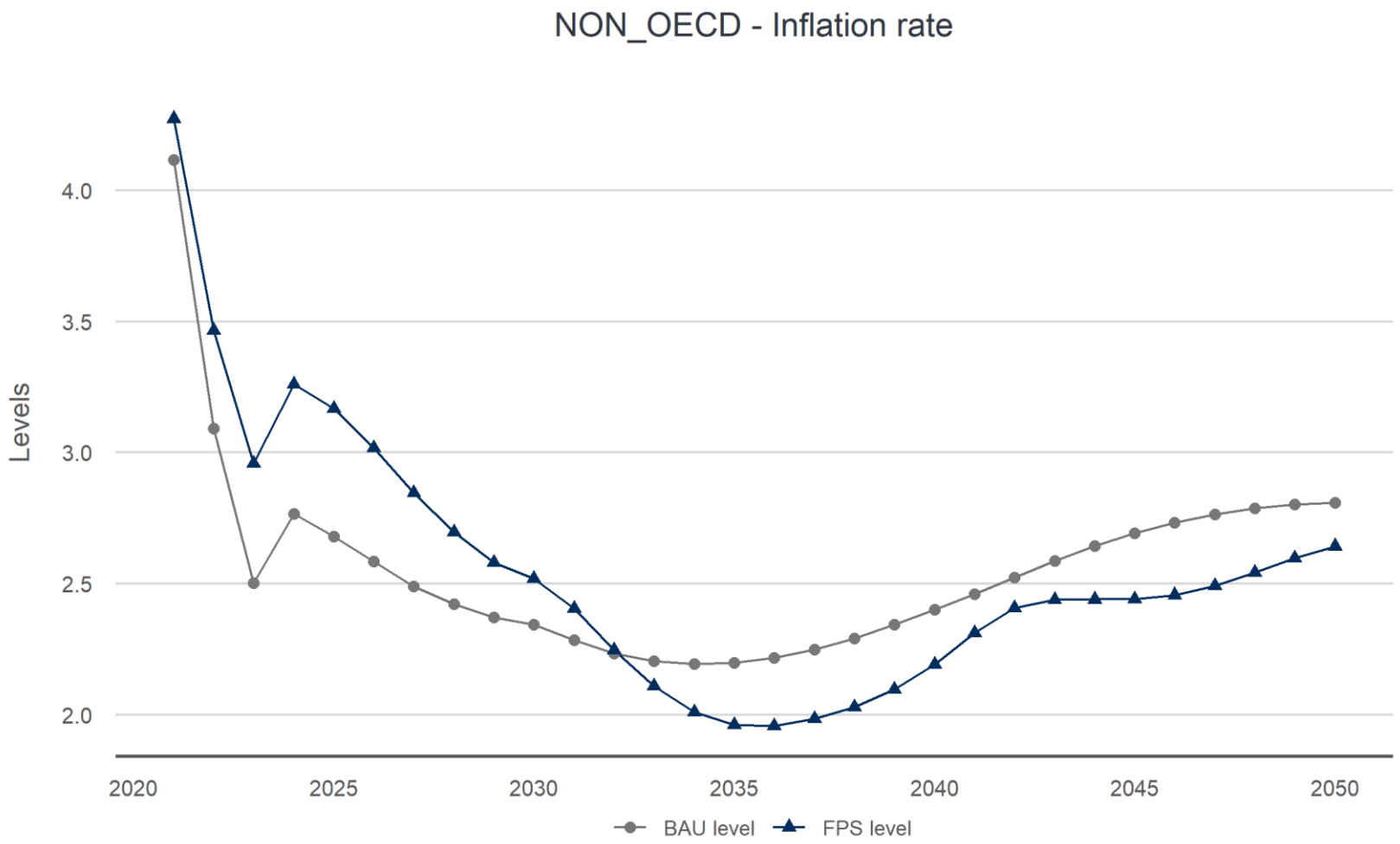
Inflation rate impacts: OECD



- Inflation rate in OECD countries is expected to be higher in FPS compared to the baseline until 2033, year after which inflation rate in FPS is lower than in BAU

Source: NIGEM based on Vivid Economics inputs

Inflation rate impacts: Non-OECD



- Inflation rate in Non-OECD countries is expected to be higher in FPS compared to the baseline until 2032, year after which inflation rate in FPS is lower than in BAU

Source: NIGEM based on Vivid Economics inputs

Asset Owners

How does IPR help the governance of asset owners to drive capital shift?

- IPR creates a framework for response to the risks and opportunities
- With so many variables and uncertainties in the energy transition, clarity via a more likely scenario is key
- Significant risk-return advantages for successful navigation by active investors
- IPR FPS 2021 creates a material risk-based approach based on “reality” rather than climate targets
- Credible, long term framework, liked by regulators and peer investors for its realism
- Flows into portfolio construction and manager selection

INEVITABLE POLICY RESPONSE

Asset allocators serious about climate must take a thematic approach

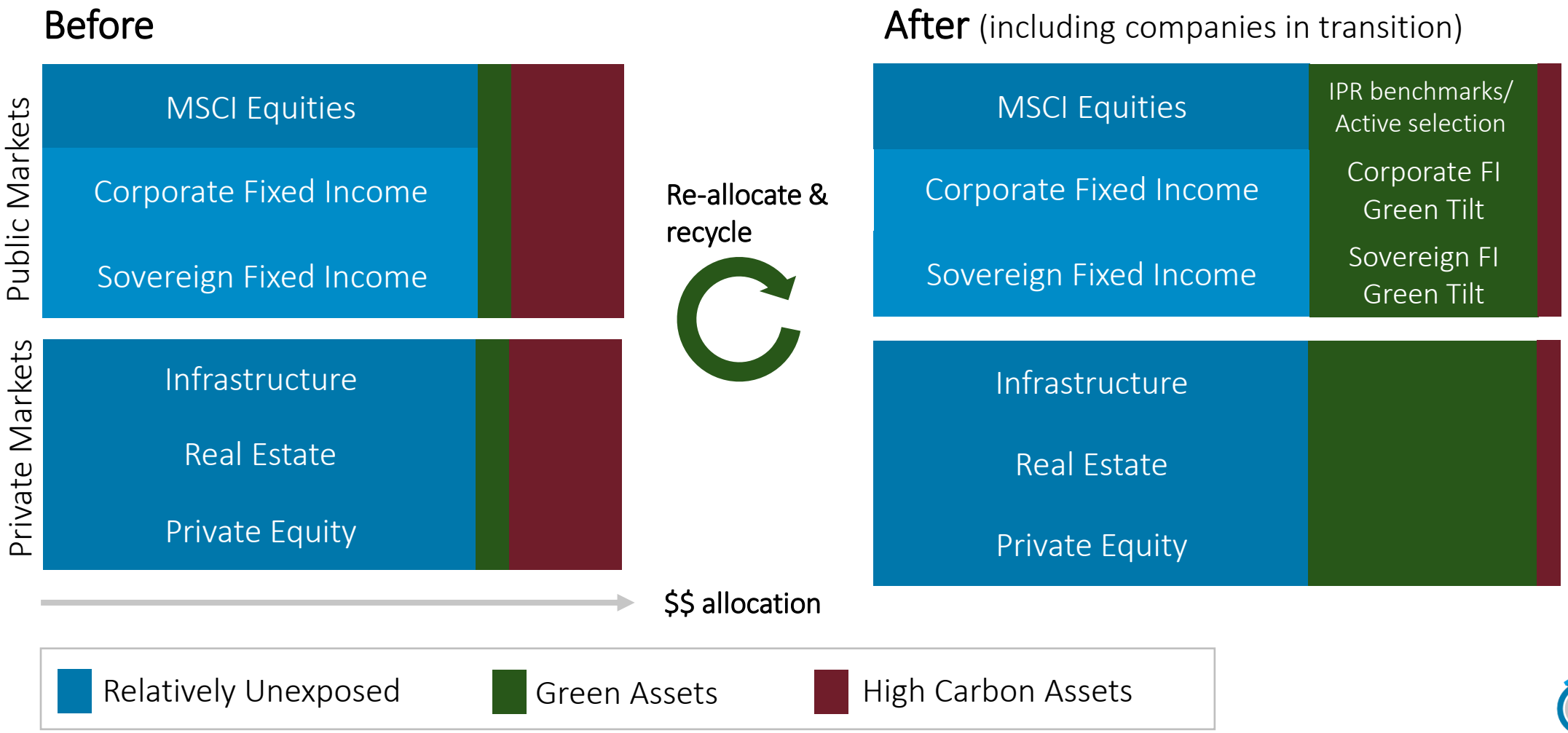
- Climate transition risks and opportunities need to be understood across traditional asset classes
- Huge difference in expected return between sector winners and losers
- Flexible portfolio construction approaches required - Many opportunities emerging in PE, Infra and real asset classes.
- Asset Owners should question traditional Strategic Asset Allocation process, often advised by Consultants.
- Asset Manager selection key
- Asset Owners must incentivize and reward Asset Managers constructing new products to meet these demands.
- Optimisers based on Modern Portfolio Theory are frequently used. The problem is that they tend to take historic returns and historic risk (measured by Standard Deviation of returns) which does not suit a forward-looking structural change like IPR. Risk is not just volatility.

INEVITABLE POLICY RESPONSE

Link between engagement and a Portfolio construction emphasis

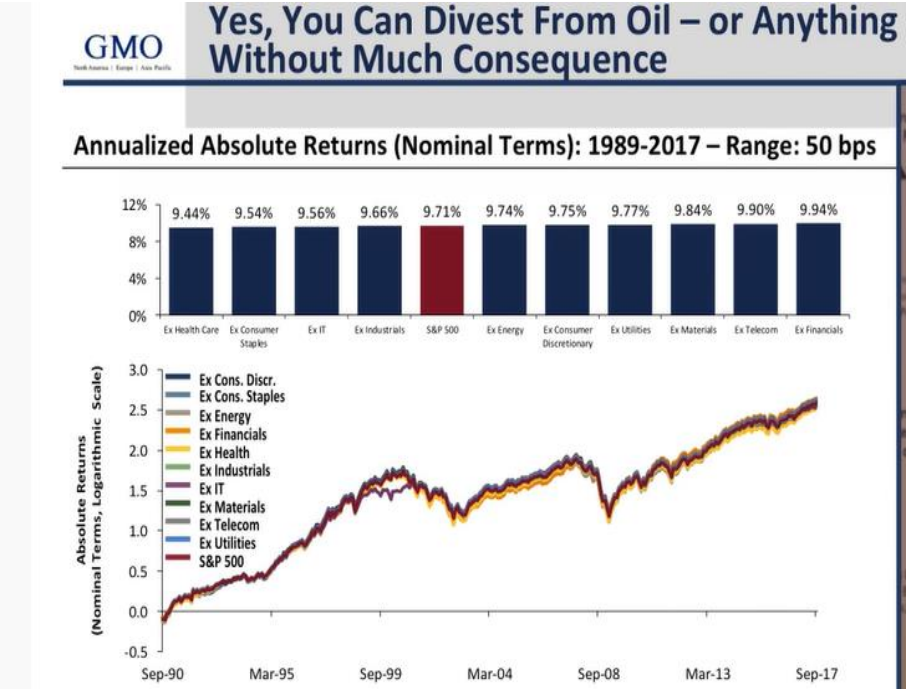
- Passive investors on broad benchmarks can engage companies using IPR FPS 2021 to make their strategies reflect the energy transition. Resulting company transition plans can be assessed through an IPR lens.
- Rewarding and incentivizing companies with credible transition strategies. Using forward looking company plans to assess valuation will become key.
- If an investor doesn't see the necessary transition in companies by the forecast acceleration, then taking portfolio action makes sense for risk reasons.
- For some asset owners, capital recycling into low carbon assets across asset classes themselves might seem more attractive than betting on high carbon companies acting fast enough, particularly with only a short time to a major acceleration

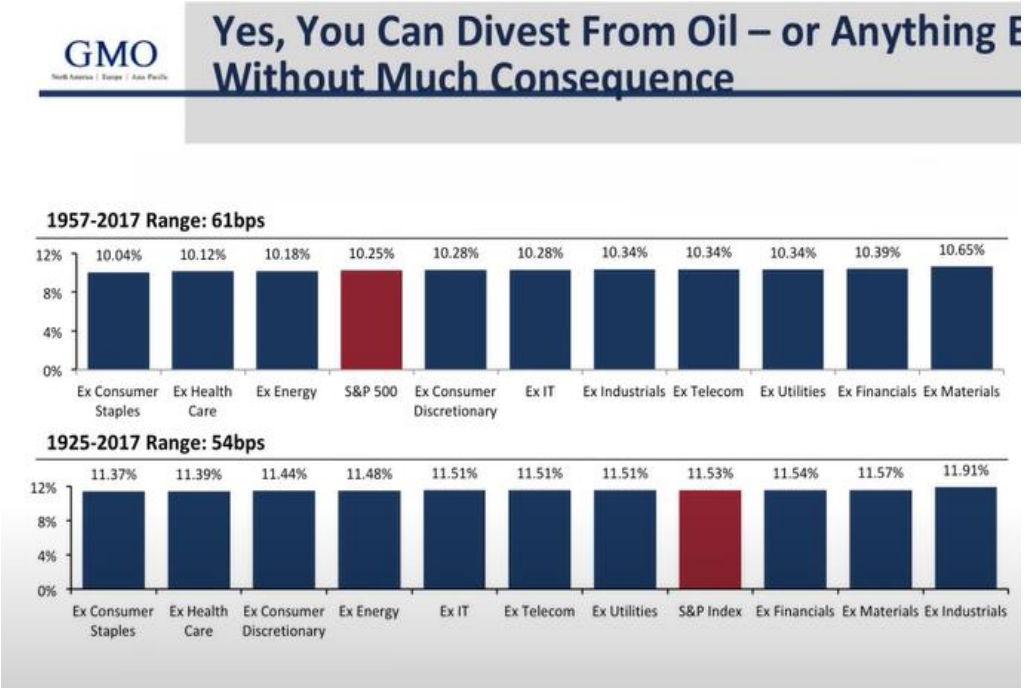
The portfolio carbon switch by asset class



The big decision for asset owners – divestment?

- Divestment only looks at risks, not opportunities
- Where to recycle this capital to from divested sectors?
- Company transitions makes this more complex





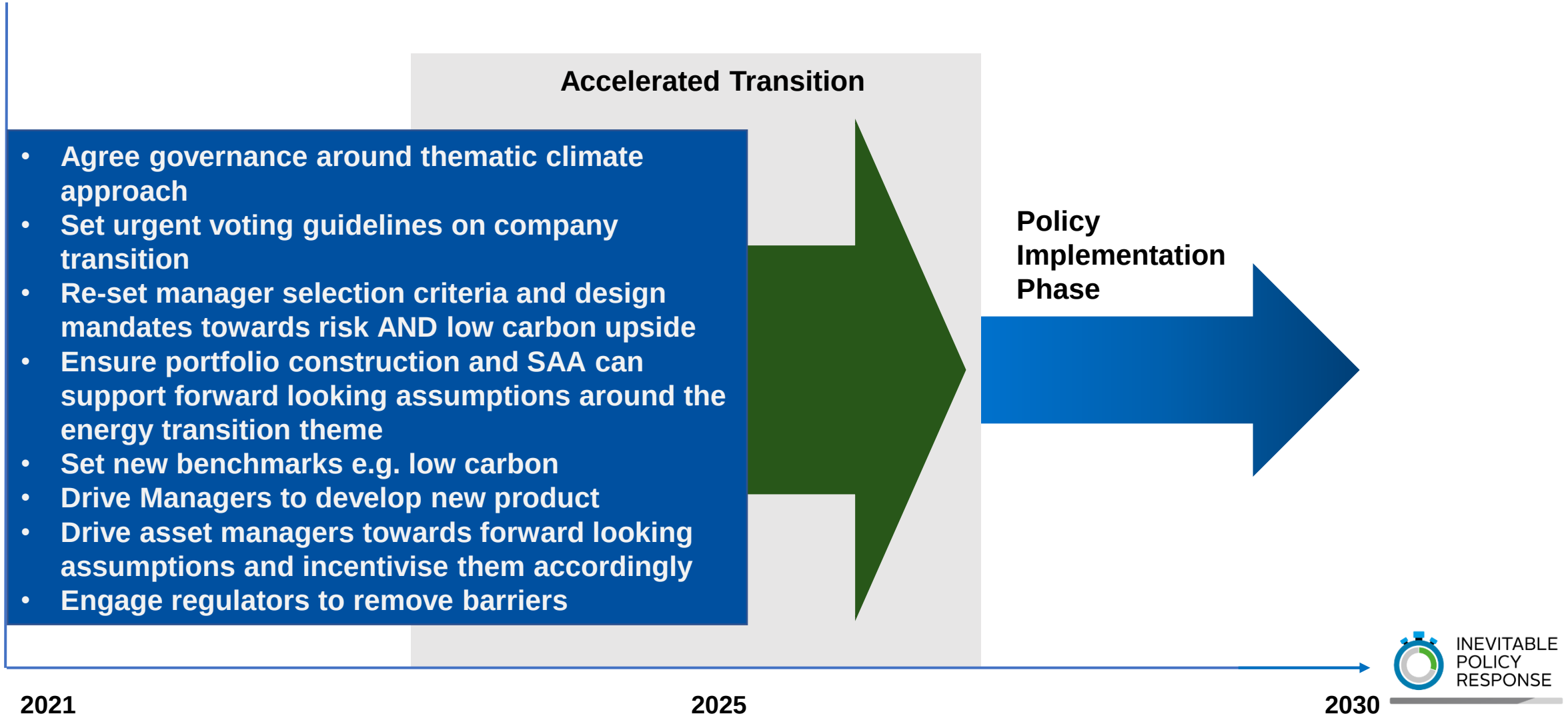
INEVITABLE POLICY RESPONSE

Maximising thematic climate risk approaches across asset classes

Asset Class	Consideration
Equities	• New benchmarks around IPR. New ETFs incorporating IPR. Consider increase in active allocation. Engage with asset managers and companies. Ignore tracking error • Reduce equity allocation in favour of other asset classes • When to screen out energy stocks entirely • Reallocate significant passive equities to new benchmarks or active mandates with a transition theme. • Lower targets for sector and regional diversity – address barriers to emerging markets
Fixed Income	Active position on corporate debt, New green bond indices. Transition bonds. Identify worst sovereign risks. Engage heavily with ratings agencies.
Infrastructure	Allocate to value add buckets. Lower infrastructure index exposure. Engage with asset managers on clean indices
Private Equity	See large and creative deals around MBO/LBO for transitioning companies. Delist companies for transition? Bring new companies to market early. Structure PE mandates around IPR. Increase PE cleantech allocation e.g. energy, peak meat etc
Real Estate	Driver clean REITs, tilt unlisted towards green.
Real Assets	Forestry, nature based assets a huge opportunity.

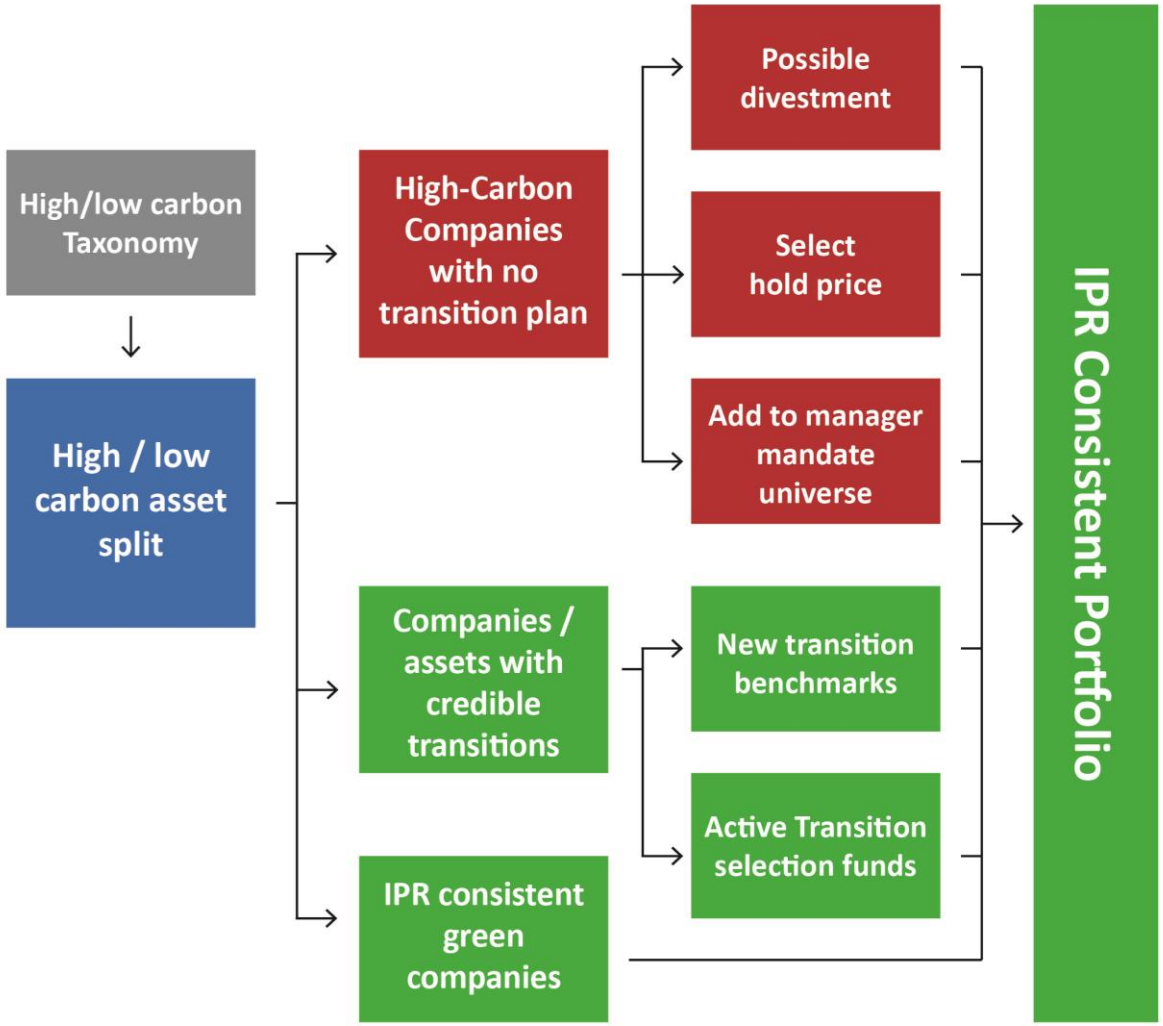
INEVITABLE POLICY RESPONSE

Asset Owner IPR Transition Tasks – Almost every core process impacted



Asset Managers

Asset Managers build analysis from the bottom up



- As discussed previously, identifying companies in credible transition is critical

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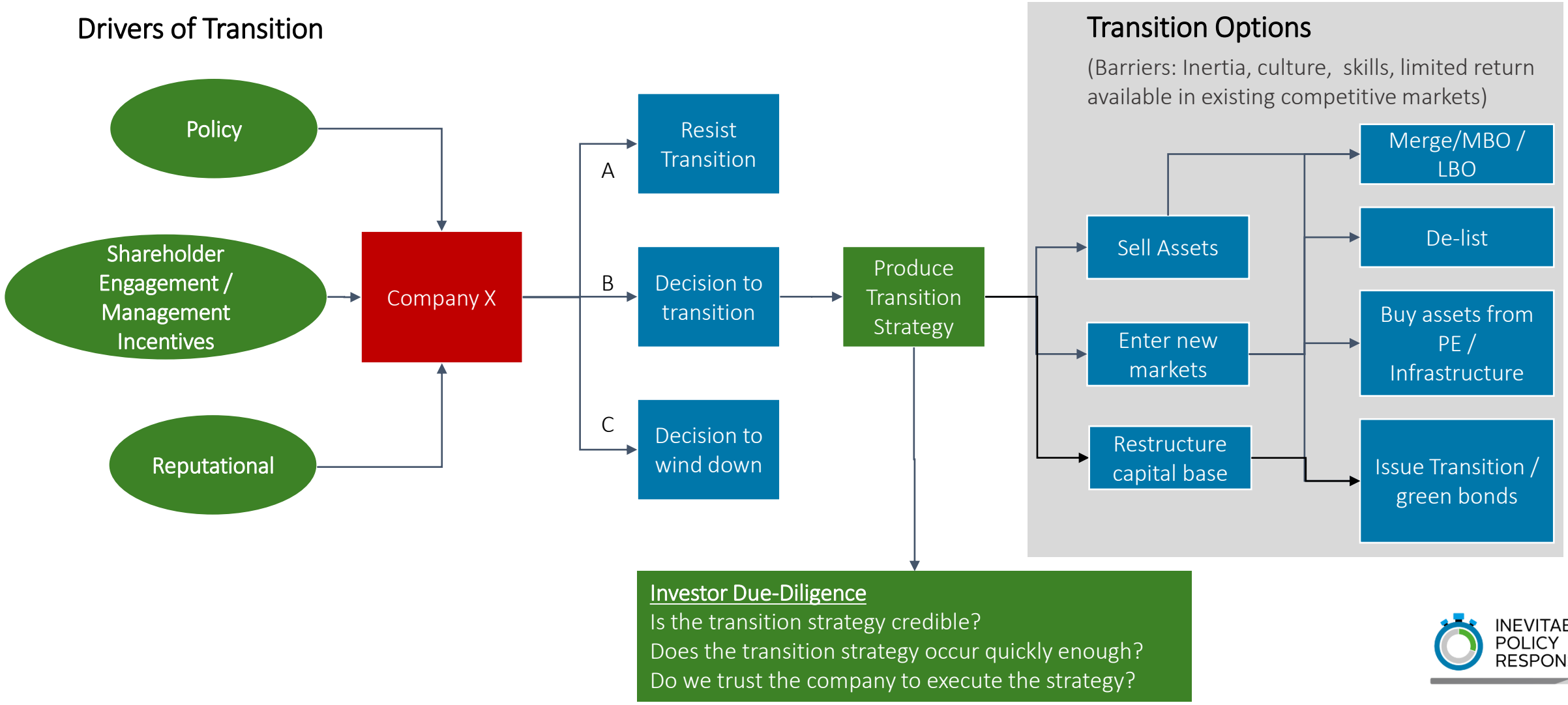
The implications of company transition challenge



Asset Manager Actions

- Asset managers can greatly increase capacity to design build product
- Asset Managers can design product to help Asset owners implement green and climate aware investment strategies – this moves forward the current asset class definitions and historic way of approaching SAA
- Asset Manager company engagement can drive the market faster, perhaps in partnership with their Asset Owner clients.
- Asset manager creativity and competition required to maximise the opportunities, arbitrage, first to market, etc.

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Service Providers

What should Service Providers do?

- **Investment Consultants** – critical to showing asset owners how to create strategy for the transition. Barriers in consulting against perception of "risky advice"
- **Ratings Agencies** – Can integrate IPR into ratings analysis (Fitch already doing so)
- **Data providers** – Can build new offerings integrating IPR public data
- **Index Providers** – can create new benchmarks and semi-passive product
- **Proxy advisers** – Can make voting recommendation based on IPR realism
- **Corporate consultants** – Can use IPR as the basis for company transition strategies

INEVITABLE POLICY RESPONSE

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