Acing the TCFD

Scenario Analysis & Climate Disclosures

Wednesday, December 9, 2020 - 3 pm EST

Today's speakers

Moderator:

Joy Williams
Senior Advisor
Mantle314
joy.williams@mantle314.com

Lisa Eichler
Co-head, Climate & ESG Solutions
Ortec Finance
lisa.eichler@ortec-finance.com

Jeff Horlor
Advisor
Mantle314
jeff.horlor@mantle314.com

Agenda

1. Introduction

2. Overview of scenario analysis: Joy Williams

3. Example of scenario analysis in practice: Lisa Eichler

4. Discussion and audience questions

How we approach scenario analysis

- What outputs do you need that will be useful?

- Is your team ready to provide the data you need?

- How will you use the outputs going forward?

Investor groups calling for scenario analysis

Regulators are increasing their focus on scenario analysis

Introducing Ortec Finance's Climate Scenario Tool:

Ortec Finance is a leading provider of technology & solutions for risk and return management.

Our **Climate & ESG Solutions Compass** helps clients **navigate a Changing Climate**


State-of-the-art customizable solutions for climate resilient investment decision-making.

- We engage in ***thought leadership*** activities together with CIA, IFOA, NGFS, UN PRI, UNEP-FI, IIGCC, NzAoA, SBTi-Finance, etc.

- ***Our growing global client base*** includes pension funds, insurance companies, asset managers, central banks, and sovereign wealth funds in Australia, Canada, Finland, France, Hungary, Singapore, Sweden, Switzerland, the Netherlands, the UK, and USA

- **We leverage strong partnership with Cambridge Econometrics & academia:** Product development and innovation always in close collaboration with clients and scientific community

- Our climate scenarios are in line with TCFD guidance, NGFS scenarios, Bank of England scenarios, etc.
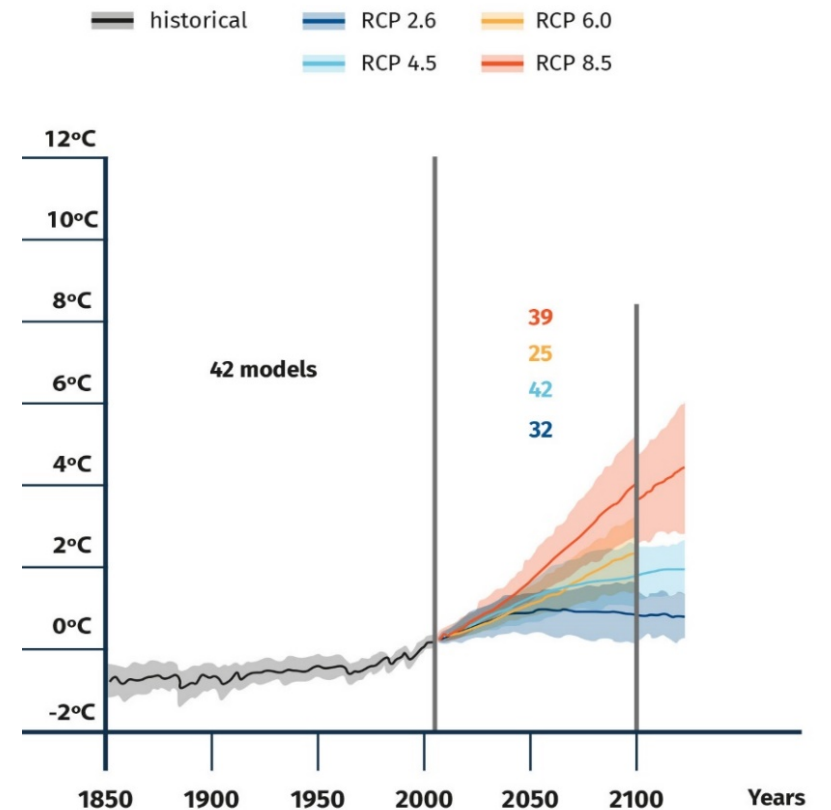
Combining financial and climate scenario analysis ...

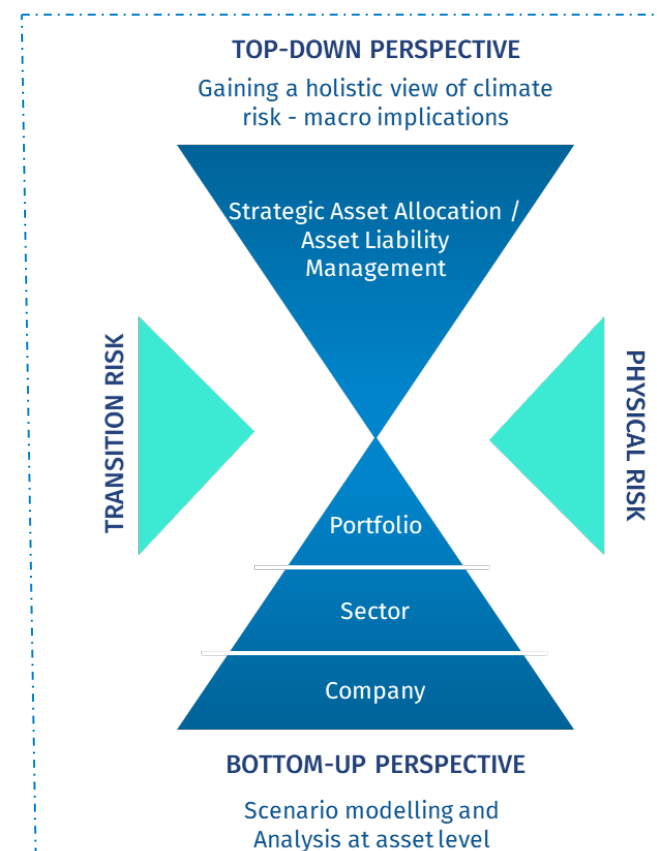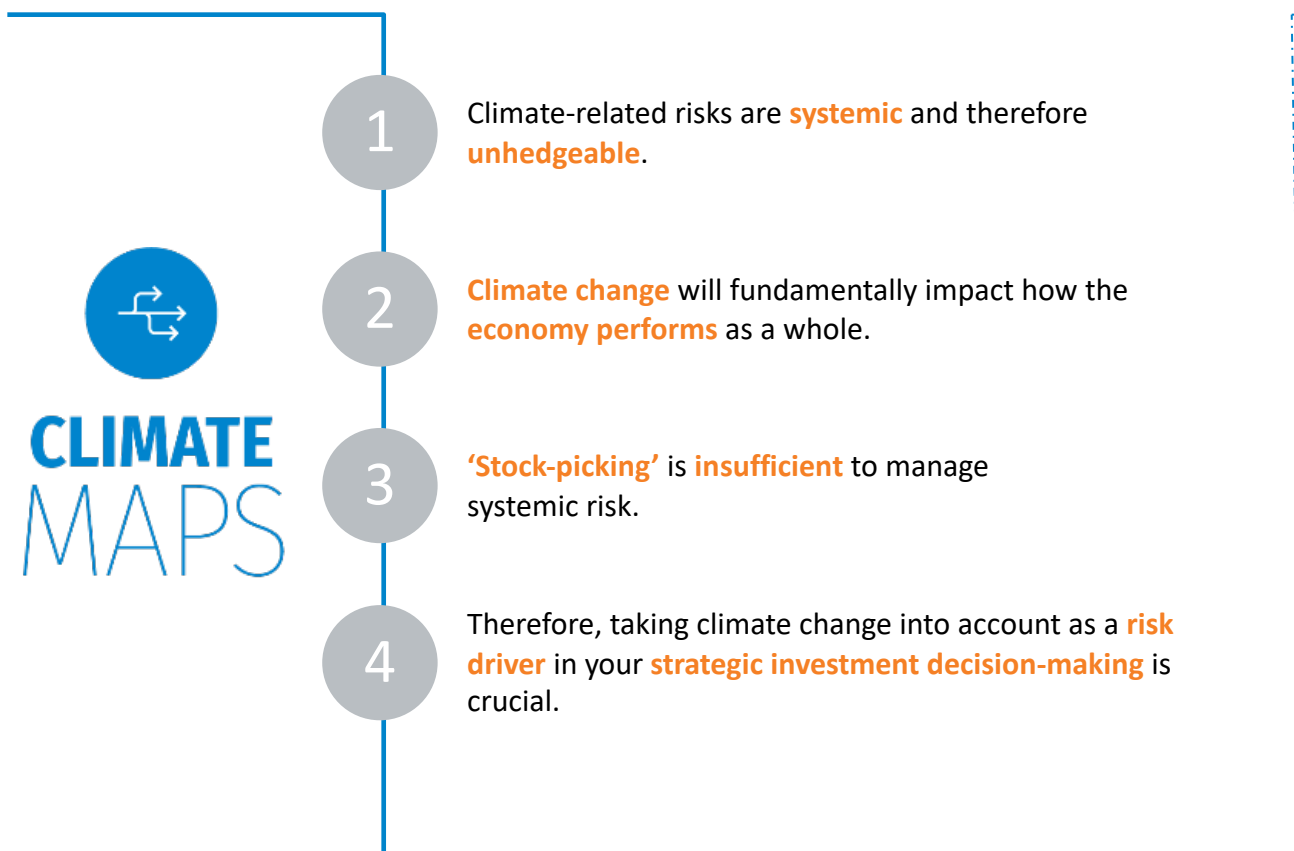Traditional Real World Economic and Financial Scenarios
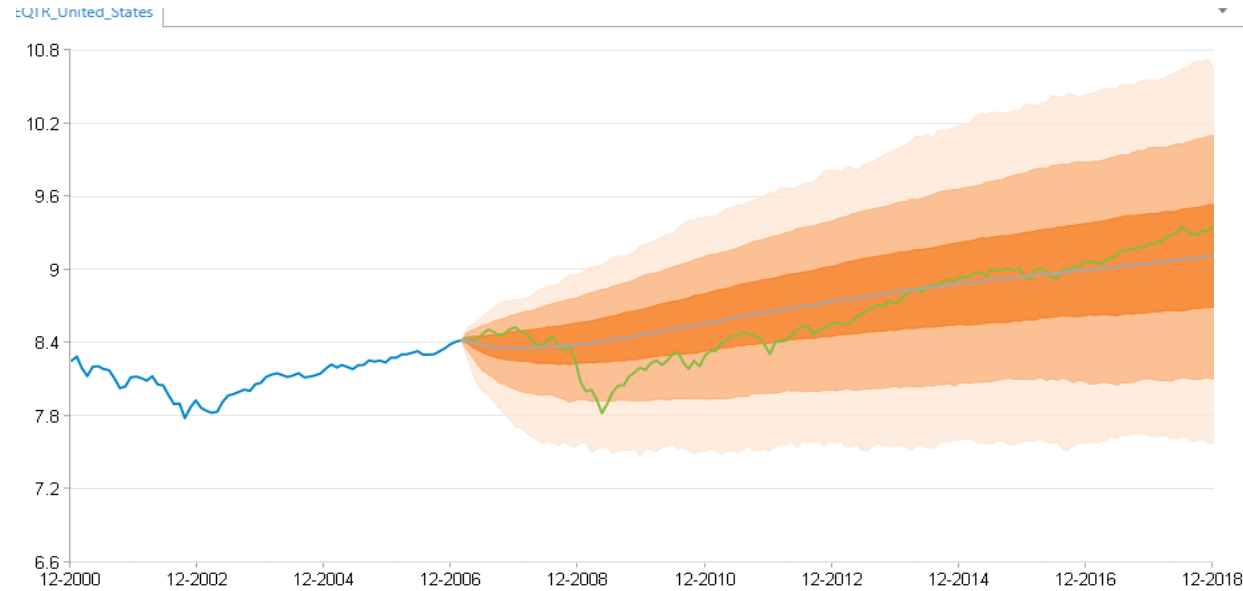
Scientific climate scenarios

Focus on systemic risk & top-down approach

*The approach focuses on capturing **systemic climate risk** and relies on a **top-down approach**, rather than holding-specific climate risk.*

1 Climate-related risks are **systemic** and therefore **unhedgeable**.

2 **Climate change** will fundamentally impact how the **economy performs** as a whole.

3 **'Stock-picking'** is **insufficient** to manage systemic risk.

4 Therefore, taking climate change into account as a **risk driver** in your **strategic investment decision-making** is crucial.

CLIMATE MAPS

TOP-DOWN PERSPECTIVE
Gaining a holistic view of climate risk - macro implications

Strategic Asset Allocation / Asset Liability Management

TRANSITION RISK

PHYSICAL RISK

Portfolio

Sector

Company

BOTTOM-UP PERSPECTIVE
Scenario modelling and Analysis at asset level

cambridge econometrics camecon.com

ORTEC FINANCE

The ClimateMAPS approach in a nutshell

Combining well-established climate science with respected econometric and financial modelling

Climate-informed INPUT Data & Assumptions

Transition risk factors:

Policy drivers / Technology drivers

Physical risk factors:

Gradual physical risks / Extreme weather risks

MACRO-Econometric Model

cambridge econometrics
clarity from complexity

Maps input data to macro-economic interactions worldwide to generate climate pathway specific shocks (compared to climate-uninformed baseline outlook).
~ Per country/sector, per year, which informs…

STOCHASTIC Financial Model

ORTEC FINANCE

Translates climate-GDP/inflation/GVA shocks over time
to 600+ financial and economic variables.
~ Per country/sector, per year, which informs…

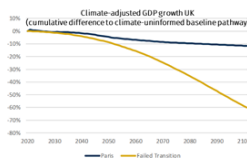## Systemic Climate Risk – Aware Scenarios Sets

Model OUTPUT = climate-adjusted growth expectations & pricing-in dynamics up to 2060 (annual timesteps) for …
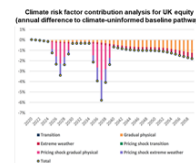
1. Economic variables
- ✓ GDP
- ✓ Inflation
- ✓ Interest Rates

2. Asset Classes
- ✓ Fixed Income
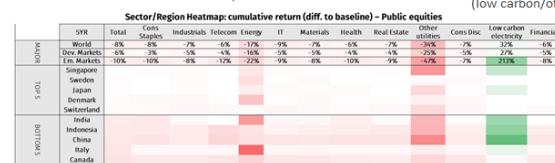- ✓ Corporate Credit
- ✓ Equities
- ✓ Real Assets
- ✓ Alternatives
- ✓ Commodities
- ✓ Currencies

3. Sectors
- ✓ Energy
- ✓ Consumer Discretionary
- ✓ Consumer Staples
- ✓ Financials
- ✓ Health
- ✓ Industrials
- ✓ IT
- ✓ Materials
- ✓ Real Estate
- ✓ Telecom
- ✓ Utilities (low carbon/other)

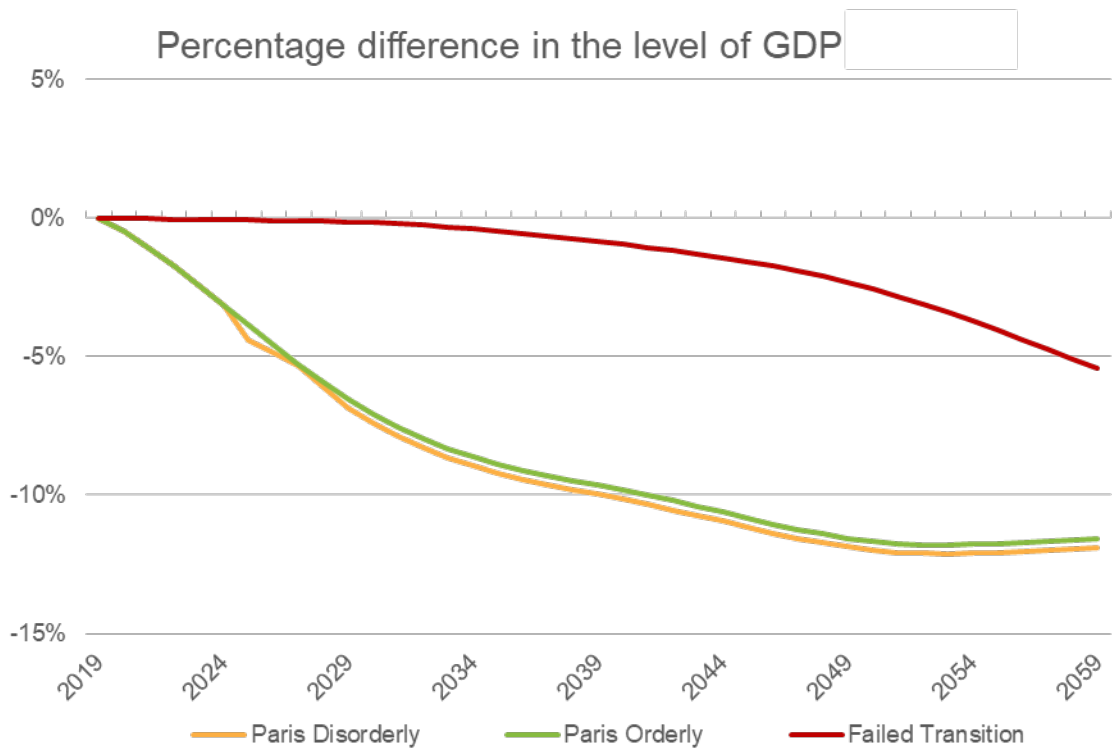ORTEC FINANCE

Three climate scenarios included in standard offering

Flexibility to create your own climate scenarios

Scenarios:	Failed Transition	Paris Orderly Transition	Paris Disorderly Transition
Paris Agr. outcome	▪ Paris Agreement goals not met	▪ Paris Agreement goals met	▪ Paris Agreement goals met
Global warming	▪ Avg. global warming reaches about 4°C by 2100 ▪ Emissions ~ IPCC RCP 6.0	▪ Average global warming stabilises at 1.5°C ▪ Emissions ~ IPCC RCP 2.6	▪ Average global warming stabilises at 1.5°C ▪ Emissions ~ IPCC RCP 2.6
Transition risks	**Limited transition impact** because ▪ Economies follow BAU track ▪ NO additional new policy measures	**Large transition impact** due to ▪ Ambitious low carbon policies ▪ High investment in low-carbon tech	**Large transition impact** due to ▪ Ambitious low carbon policies ▪ High investment in low-carbon tech
Physical risks	▪ **Severe physical impacts** – both gradual physical changes & more frequent and severe extreme weather events.	▪ **Moderate physical impacts** occur up to 1.5/2°C	▪ **Moderate physical impacts** occur up to 1.5/2°C
Impact on GDP	▪ US GDP, for example, is expected to be **60% lower** than the climate-uninformed scenario by 2100.	▪ Canadian GDP is expected to be about **10% lower** than the climate-uninformed scenario in 2040.	▪ In the long term, Global GDP is slightly worse than in the Paris Orderly scenario.
Financial market impacts	▪ **Pricing-in dynamics of markets** taking into account expected physical risks in the future are modelled explicitly.	▪ Transition is assumed to occur as smoothly as possible (**pricing-in is smoothed out** over a period of several years).	▪ Transition has disruptive effects on financial markets with **rapid repricing** of assets followed by a **sudden sentiment shock** to the financial system in 2024 / 2025.

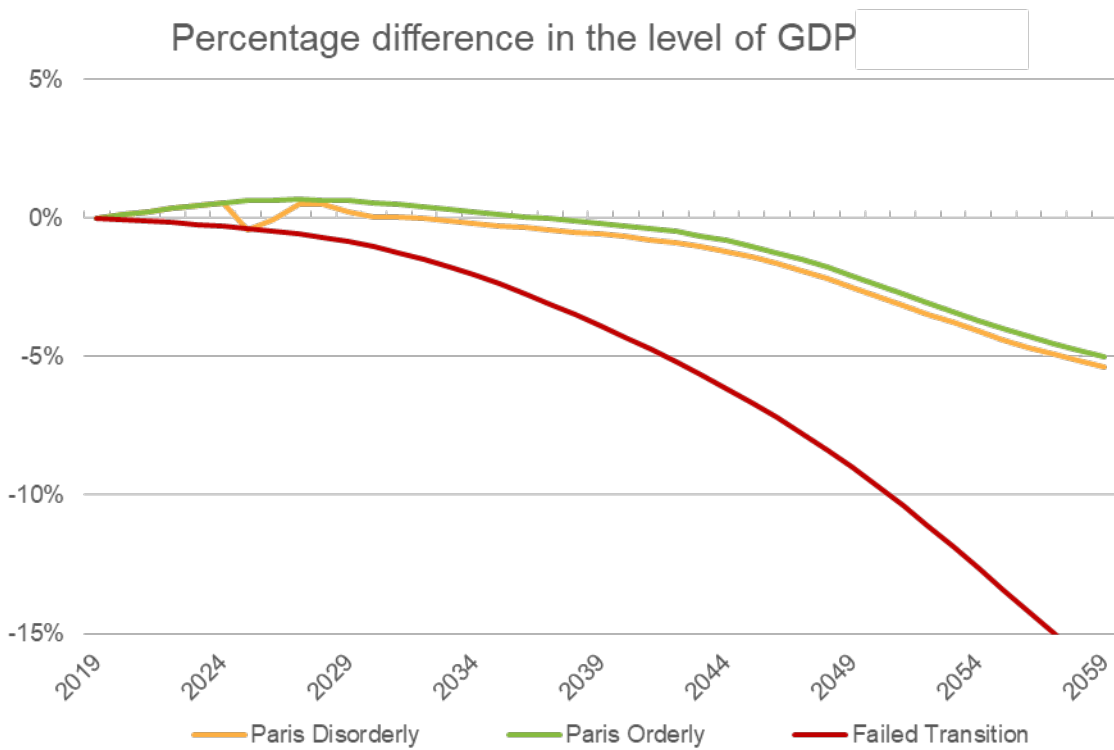# Output example: Macro-economic risk drivers

Climate-adjusted GDP growth

(<u>cumulative</u> difference to climate-uninformed baseline)

Note: these are results based on a fictive demo set-up, results will vary for each specific investor.

Output example: Total investment portfolio performance

Change in portfolio value
2020-2060
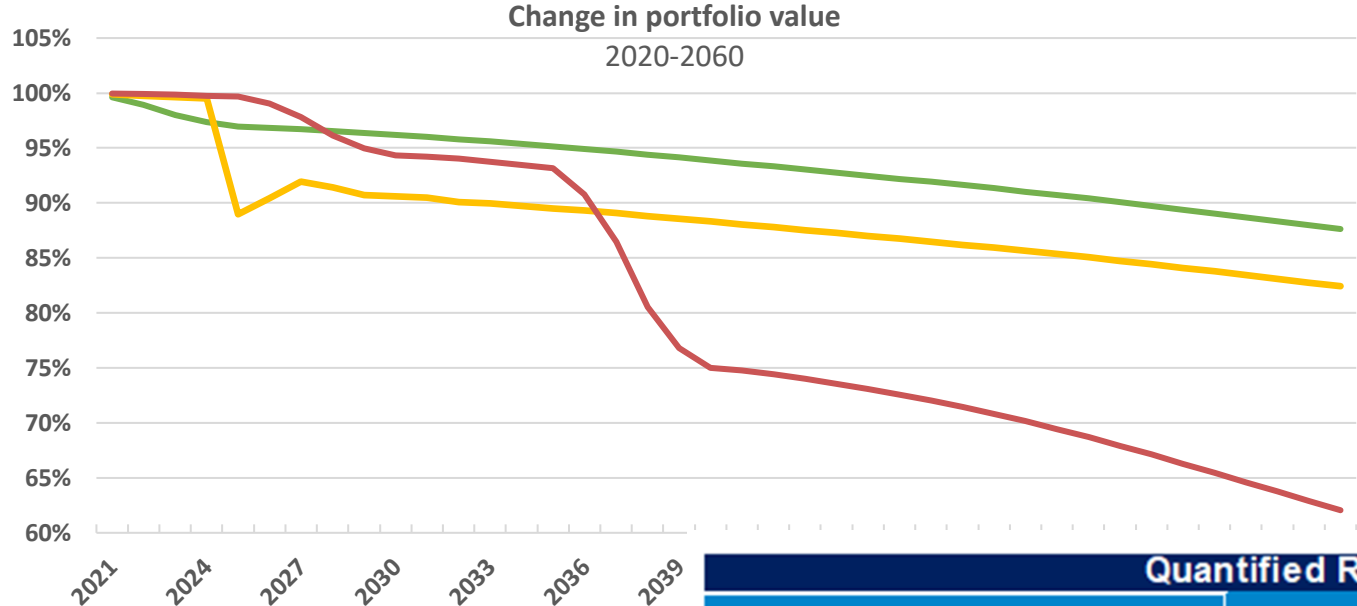
Quantified climate-related risk/return impacts for total fund value

CLIMATE
MAPS

Quantified Return Impact for Total Fund Value						
Investment portfolio	Cumulative return relative to climate-uninformed baseline					
	2020-2024	2025-2029	2030-2039	2040-2049	2050-2059	2020-2059
	Median	Median	Median	Median	Median	Median
Paris orderly transition pathway	-3%	0%	-1%	-2%	-3%	-8%
Paris disorderly transition pathway	-4%	-4%	-1%	-2%	-3%	-12%
Failed transition pathway	0%	-5%	-13%	-3%	-7%	-25%

Note: these are results based on a fictive demo set-up, results will vary for each specific investor.
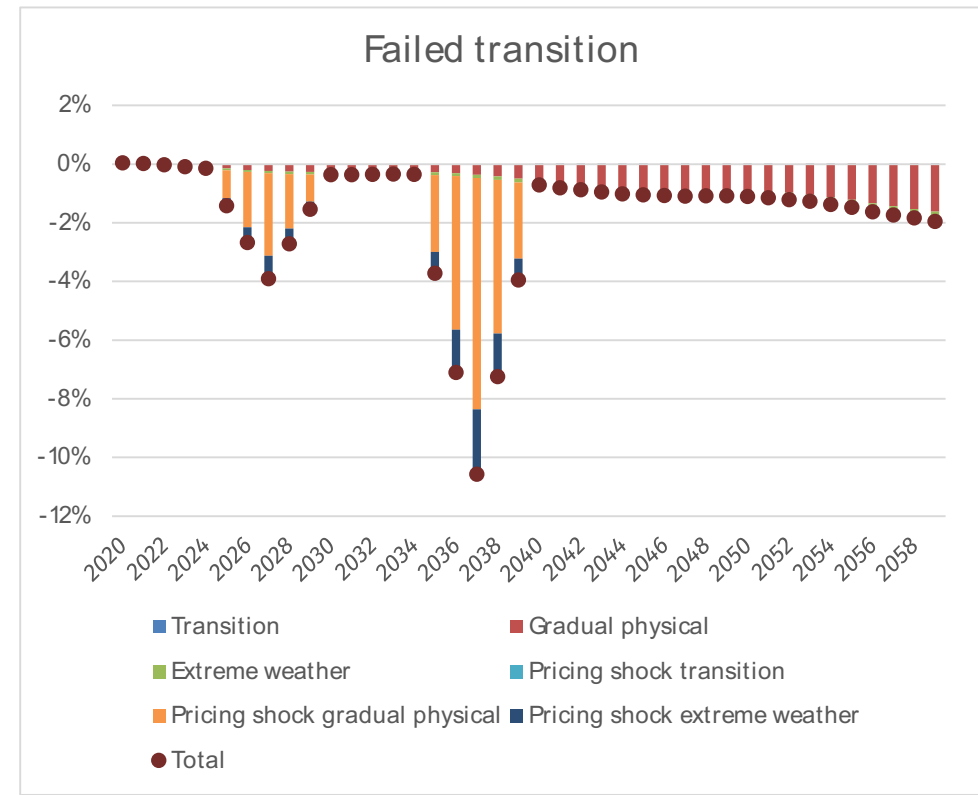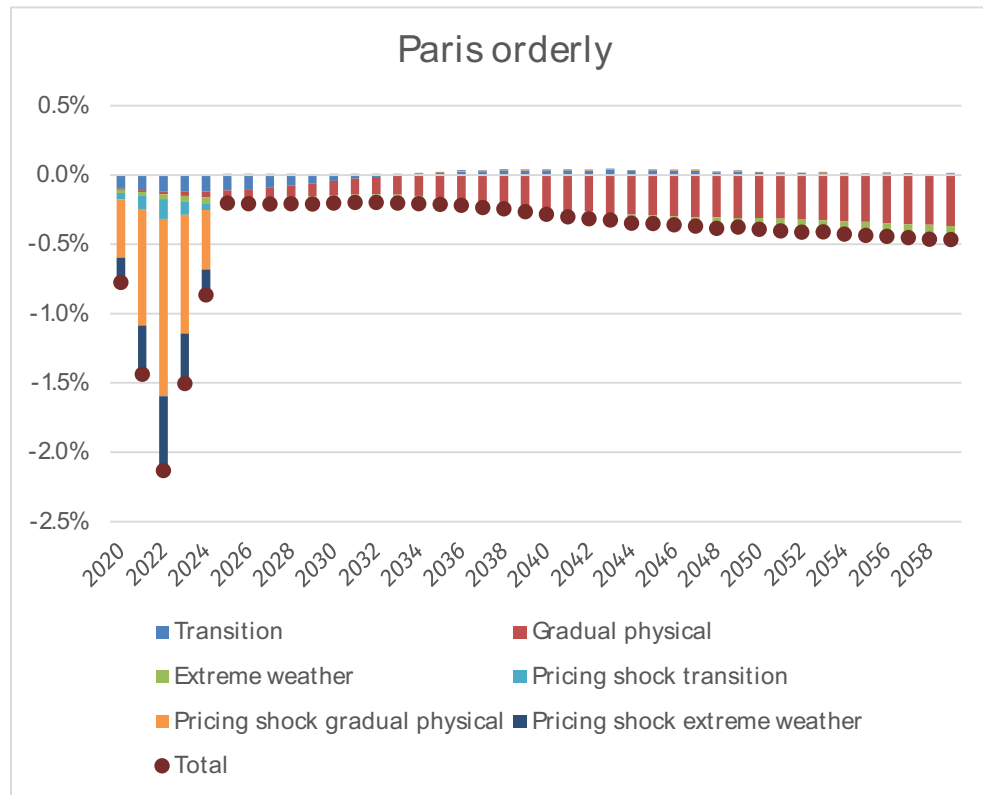
Example for World Equity Benchmark

Output Example: Sector/Region Heat Map

Cumulative return (diff. to baseline) heat map – Public equities – 5 and 10 years

	5YR	Total	Cons Staples	Industrials	Telecom	Energy	IT	Materials	Health	Real Estate	Other utilities	Cons Disc	Low carbon electricity	Financials
MAJOR	World	-8%	-8%	-7%	-6%	-17%	-9%	-7%	-6%	-7%	-34%	-7%	32%	-6%
	Dev. Markets	-6%	-3%	-5%	-4%	-16%	-5%	-5%	-4%	-4%	-25%	-5%	27%	-5%
	Em. Markets	-10%	-10%	-8%	-12%	-22%	-9%	-8%	-10%	-9%	-47%	-7%	213%	-8%
TOP 5	Singapore													
	Sweden													
	Japan													
	Denmark													
	Switzerland													
BOTTOM 5	India													
	Indonesia													
	China													
	Italy													
	Canada													

	10YR	Total	Cons Staples	Industrials	Telecom	Energy	IT	Materials	Health	Real Estate	Other utilities	Cons Disc	Low carbon electricity	Financials
MAJOR	World	-8%	-7%	-7%	-6%	-25%	-8%	-7%	-6%	-7%	-45%	-7%	67%	-6%
	Dev. Markets	-6%	-3%	-5%	-4%	-23%	-5%	-5%	-4%	-5%	-34%	-5%	66%	-5%
	Em. Markets	-10%	-10%	-7%	-12%	-28%	-9%	-8%	-10%	-9%	-54%	-7%	400%	-7%
TOP 5	Singapore													
	Japan													
	Sweden													
	Denmark													
	Malaysia													
BOTTOM 5	Indonesia													
	China													
	Russia													
	Italy													
	Canada													

Illustrative Example: Paris Orderly Pathway

Note: these are results based on a fictive demo set-up, results will vary for each specific investor.

Client deliverables
Our comprehensive modular offering

Access to the Climate Scenario Narratives Dashboard

www.climatemaps.app

Portfolio-Specific Climate Risk Report

Climate-Informed Economic & Financial Scenario Dataset License

In-depth Climate Risk Methodology & Insights Workshop

Optional Module: Climate SIGNS

Access to Climate SIGNS dashboard

Optional Module: Climate PREDICT

Access to Climate PREDICT dashboard

ORTEC FINANCE