

Ortec concludes that harm to OPERF's entire portfolio will be significant if there is a failed energy transition.

Divest Oregon says a fiduciary must invest to avoid, not encourage, long term damage to OPERF.

Ortec finds a billion-dollar benefit to OPERF's public-equity portfolio from divesting fossil fuels in a time of clean-energy transition. Only if a clean-energy transition fails does Ortec predict a modest gain for keeping fossil fuels.¹

But if energy transition fails, Ortec also finds that modest gain will be overwhelmed by losses to the entire OPERF portfolio. That will come from increasing costs of climate-caused physical damage. Ortec concluded:

Worst outcomes come in a failed transition due to physical risks

Globally, the physical risks experienced when transition to a greener economy fails, have the most significant impacts (63% lower US GDP by 2100). Notably, by 2037 OPERF's portfolio value in the Failed Transition scenario is significantly down compared to an orderly low carbon transition. *In a Failed Transition, by 2060 your asset portfolio value is expected to c.20% lower than baseline* (emphasis added).²

Treasury has a fiduciary obligation to protect OPERF's investment portfolio from known likely harm. That means investing to avoid, not encourage, a failed energy transition.

Fossil fuel divestment does that while making money for OPERF. Treasury refuses to act while utterly failing to address its own expert report. The circumstances are ripe for legislative intervention.

Written testimony of Rick Pope 2/27/23
Attachments listed on next page.

¹ Committee record, 2/23/2023 Map/Graphic 5347

² Committee record, 2/16/23 Report 50736 Exhibit 6 p. 3, attached.

Attachments:

- Ortec's key findings about climate risk to OPERF's entire portfolio³
- OPERF investment portfolio performance chart⁴
- Ortec's climate scenarios at a glance⁵

³ Committee record, 2/16/23 Report 50736 Exhibit 6 pp. 3-4, attached.

⁴ Committee record, 2/16/23 Report 50736 Exhibit 6 p. 8, attached.

⁵ Committee record, 2/16/23 Report 50736 Exhibit 6 p. 6, attached.

Climate risk exposure | OPERF investment portfolio

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The view from 10,000 feet

1. Lower return expectations across all assets due to negative climate impact over time.

Over the next 20 years, all three climate scenarios see lower growth expectations compared to a baseline. This poses a material risk to both scheme balance sheets and future contribution/funding needs.

2. Worst outcomes come in a Failed Transition due to physical risks.

Globally, the physical risks experienced when transition to a greener economy fails, have the most significant impacts (63% lower US GDP by 2100). Notably, by 2037 OPERF's portfolio value in the Failed Transition scenario is significantly down compared to an orderly low-carbon transition. In a Failed Transition, by 2060 your asset portfolio value is expected to c.20% lower than baseline.

3. Transition risk impacts may occur sooner than most expect.

On the other hand, a transition scenario – even a disorderly one – enables global economies to stabilize once the transition has been completed. There is hope, and this demonstrates the need for investors to engage with companies and sovereigns on the transition whilst also positioning their portfolios well in the interim.

In the near future, transition impacts are generally positive in Europe. In contrast, the US is more negatively impacted than many other countries due to fossil fuels exports and other high-emitting activity currently being a significant contributor to GDP. Relative to the baseline, in a disorderly transition scenario, high exposure to the US economy contributes to OPERF's portfolio reducing in value by roughly 8% over the next 5 years.

4. Climate risk changes the Strategic Asset Allocation (SAA) landscape as climate impacts affect long-term expectations.

Risk-adjusted returns vary across assets, pathways and time horizons. In general, cash & corporate bonds are more resilient whereas the least resilient asset classes are listed/private equities and properties due to their sensitivity to pricing-in shocks and market over-reaction.

Compared to a typical globally-exposed pension scheme, your portfolio's current climate risk exposure is relatively more vulnerable due to a exposure to sensitive regions, sectors, and asset classes.

Climate change is likely to see strongly differentiated risk/return at a sector level. As such, future SAA/ALM decisions may benefit from sector-level differences being captured in the analysis.

Key Takeaways | Both short-term and long-term risk is material

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Outlook

In the near future, the portfolio could suffer in particular from losses if a disorderly climate transition transpires.

The longer it takes for coordinated policy action on climate, the more radical and disruptive it is likely to be for markets.

The pricing-in of physical risk is likely to come many years or decades ahead of direct impacts. The Failed Transition scenario shows **your current portfolio experiences significant impacts from a failed transition by the middle of the 2030's** as inevitable future physical damage is priced-in.

US

The US represents c.70% of OPERF's allocation exposure (using data received and proxies agreed with you and noting that allocation exposure is not the same as economic exposure). **The US economy is negatively exposed to both physical and transition-related climate risks under all pathways.** The country's position as a net fossil fuel exporter, with low energy efficiency, low carbon pricing and high sensitivity to market sentiment shocks make it highly exposed to transition risks. At the same time it is already experiencing severe extreme weather challenges (both "wet" and "dry") which will only worsen with increasing temperatures, even under the transition scenarios.

So what?

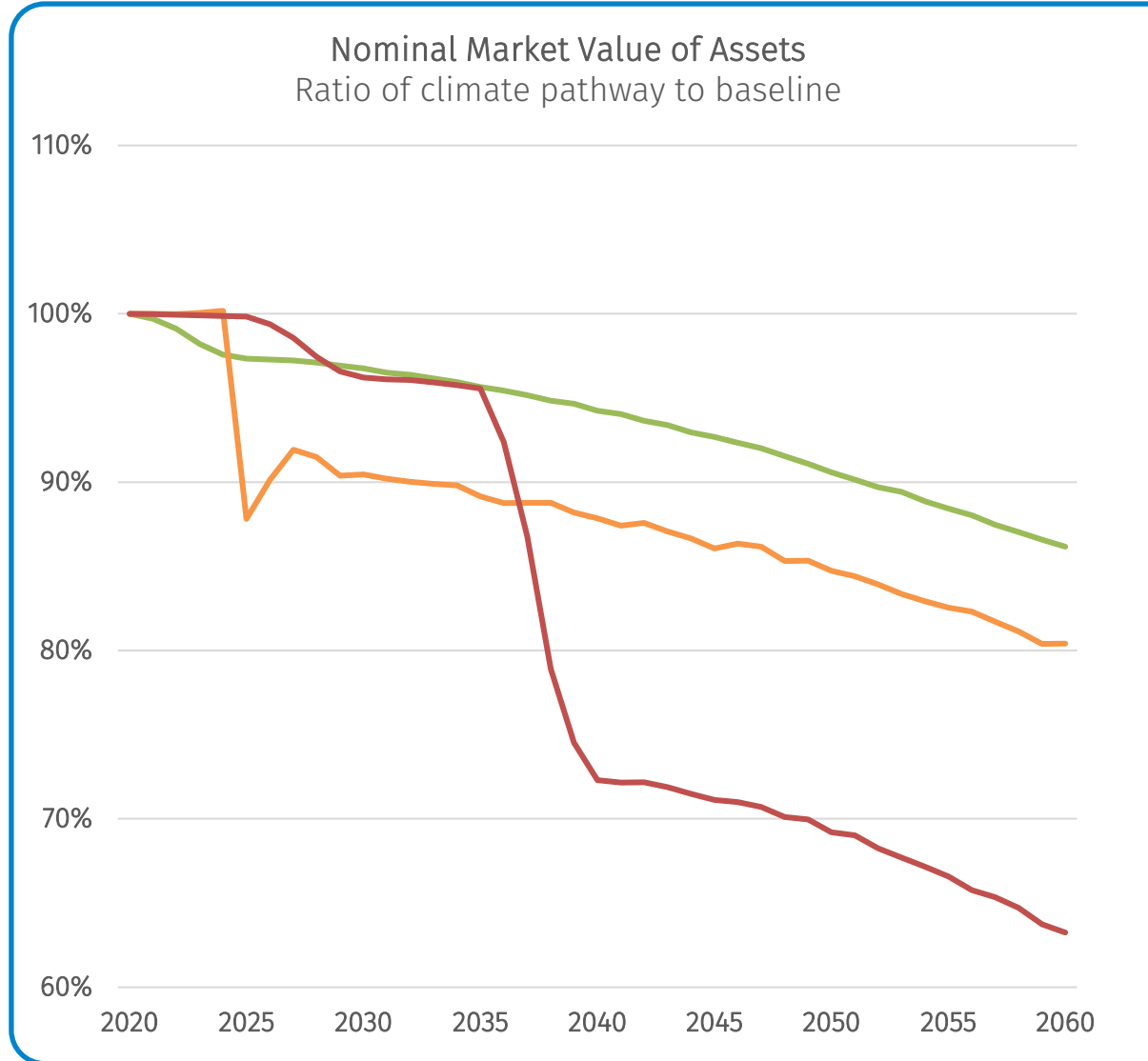
Across all pathways, there is significant differentiation between the likely experiences of different countries, sectors and asset classes. We recommend that using this analysis, you could work with your fund managers and advisors further integrating climate into your investment process. For example:

- Identify the "hotspots" of risk, for closer inspection by risk- and asset-managers
- **Consider SAA/ALM actions** to balance de-risking, scheme investment objectives and budgetary considerations
 - For example a "climate-informed" SAA exercise
 - Consider rotation away from transition-sensitive sectors/geographies whilst resilience testing asset de-risking in mitigating climate risk
 - Careful, climate-risk informed choice of longer term, illiquid assets
- Consider if fund benchmarks are **incentivizing fund managers to align their funds with your objectives**/risk appetites in the light of this study?
- Where segregated mandates are a used, then **careful mandate design** will be crucial to appropriately managing climate risk and **taking risk-conscious advantage of the coming economic shifts.** For example maturity caps on debt issued by climate-exposed sectors and climate-aware KPIs for total return funds.
- Potential next steps are expanded upon later in this report with suggestions for different elements of the investment process.

OPERF investment portfolio performance

The figure below shows the ratio of cumulative impacts relative to baseline over the next 40 years.

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Comments

- While the overall performance of the fund remains positive in absolute terms, all scenarios project lower returns and impede the value of assets. The Paris scenarios limit the impacts on the fund mainly thanks to their mitigated physical risks exposure.
- In the short run, OPERF’s assets are vulnerable to transition risks. The Paris Disorderly Transition Pathway is particularly impactful in the short term due to the sudden repricing of assets in 2025. The disruptive transition causes financial markets to overly react and inflict long lasting damage to the return performance.
- In the longer run, physical risks are the main contributor of climate-related risk. The Failed Transition Pathway is particularly detrimental to the Treasury due to the large exposure to US assets across the different asset classes.

■ Failed Transition
 ■ Paris Orderly Transition Pathway
 ■ Paris Disorderly Transition Pathway

Climate scenarios at a glance

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We consider **three plausible climate pathways** that explore potential future climate policies, interventions, and consequences of the world failing to mitigate climate change.

Scenarios cannot cover all possible outcomes, and are not mutually exclusive. There is no meaningful or practically useful way to give a probability of a scenario coming to fruition. These scenarios were selected to identify portfolio weak spots that aid decision making to respond to climate risk.

These “what if” climate change scenarios focus on two interdependent climate risk drivers:

- **Transition risk** focuses on the impacts (risks/opportunities) of *policy / technology uptake* towards a low-carbon economy
- **Physical risk** focuses on changes in the natural system attributable to global warming, i.e. sea level rise, frequency and severity of extreme weather events.

Paris Orderly Pathway

- **Large transition impact** due to policy measures & technology drivers
- Transition is assumed to occur as smoothly as possible
- **Market pricing-in** dynamics occur smoothed out over the 2020-2025 period
- **Physical impacts** occur up to 1.5/2°C which are greater than today but still much less than under a Failed Transition

In line with: Emissions ≈ IPCC **RCP 2.6**

Average temp increase of 1.6°C by 2100.

97% probability of limiting warming to 2°C and c.29% probability of limiting to 1.5°C.

Tests exposure to the risks/opportunities from the systemic drivers of an orderly transition and locked-in physical risk

Paris Disorderly Pathway

- **Large transition impact** due to policy measures & technology drivers
- Transition has disruptive effects on financial markets with **repricing** followed by a sudden **sentiment shock** and stranded assets in 2024 / 2025
- **Physical impacts** occur up to 1.5/2°C which are greater than today but still much less than under a failed transition

In line with: Emissions ≈ IPCC **RCP 2.6**

Average temp increase of 1.6°C by 2100.

97% probability of limiting warming to 2°C and c.29% probability of limiting to 1.5°C.

Shows resilience of the portfolio to sudden transition triggering a market dislocation centred on high emitting stocks

Failed Transition Pathway

- **Limited transition impact** - economies follow the business-as-usual track without **additional** new policy measures
- **Severe physical impacts** occur and continues to increase over time – both **gradual physical** changes, as well as more frequent and severe **extreme weather events**
- **Markets price-in physical risks** up to 2050 by end of this decade, and price-in post-2050 physical risks from the mid-2030s onwards

In line with: Emissions ≈ IPCC **RCP 6.0**

Expected global warming by 2100 **3.8°C**

The main focus of this scenario is physical risk, results show the exposure to plausible, severe climate change impacts