

Assessing transition risks

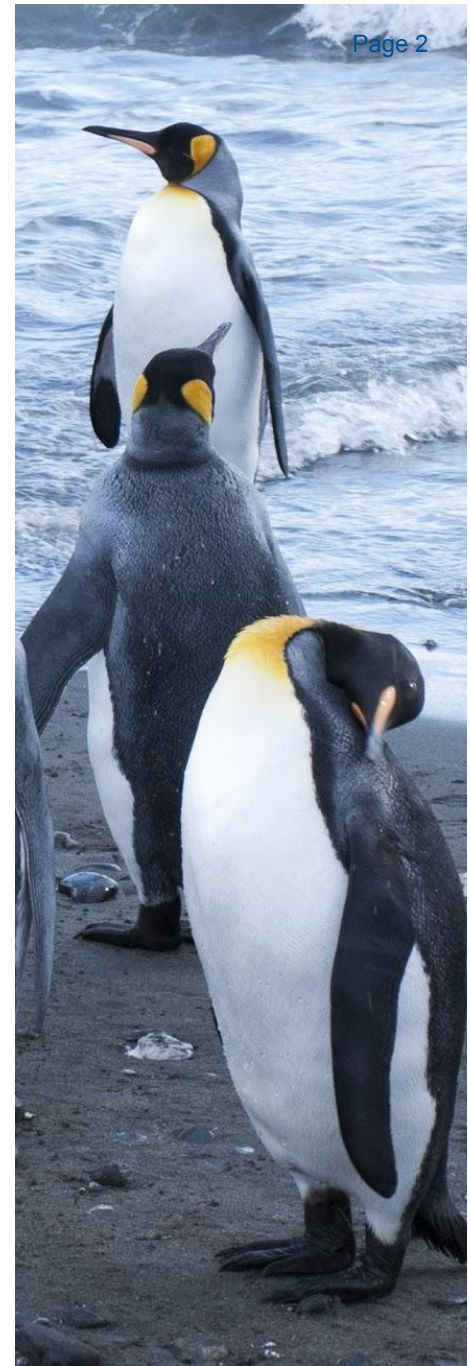
November, 2019



Who we are

As an employee-held, purpose-driven company founded in 2006, we enable corporates, capital markets and the public sector to mitigate risks and create value on their sustainability journey.









Our staff of 300+ employees in over 18 offices worldwide are passionate about tackling climate change and improving organisations' sustainability performance.



South Pole works to: Mobilizing Climate Finance at Scale

	Climate risks	Water risks	Alignment	Impact assessment
Financial Sector	✓	✗	✓	✓
Corporates	✓	✓	✓	✗

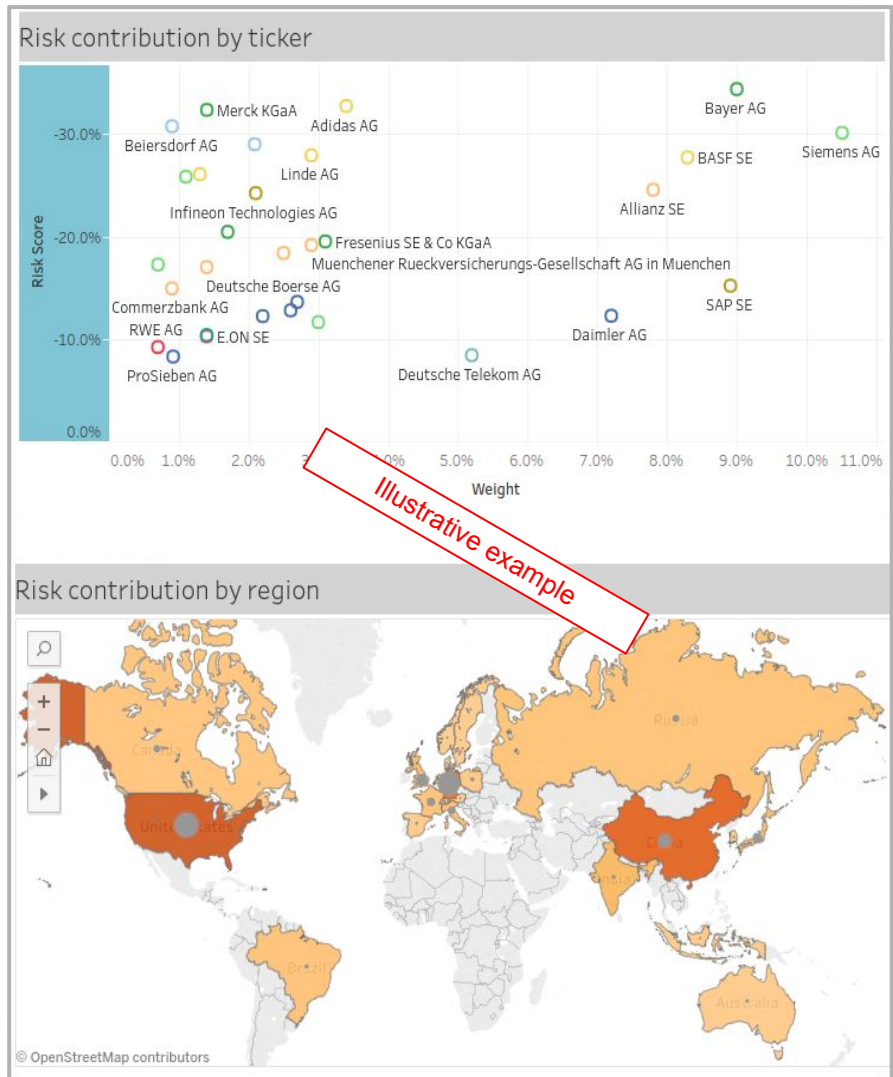
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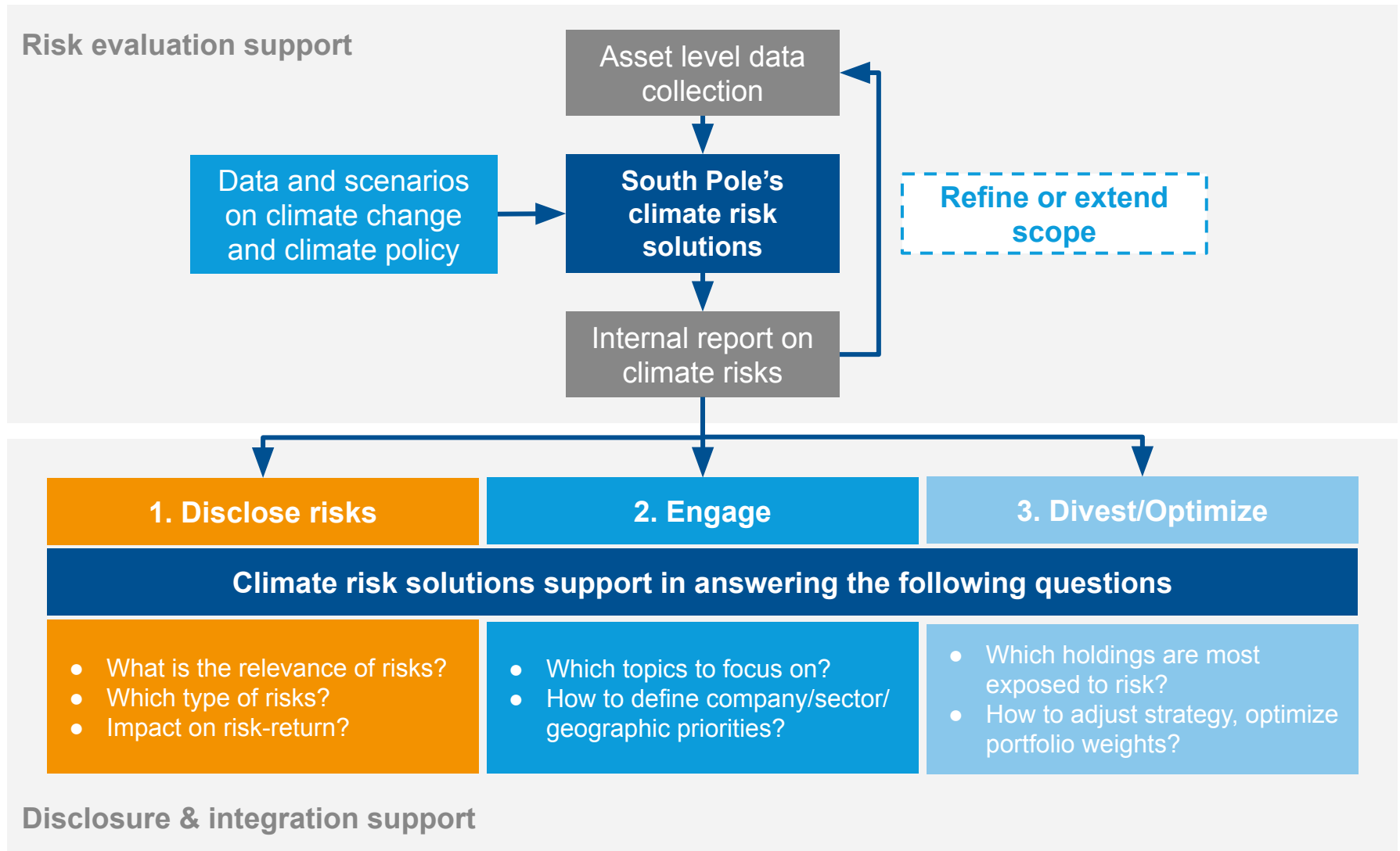
Measuring climate risks and opportunities for investment portfolio through scenario analysis

Portfolio climate risk analysis helps in answering important climate risk related questions, such as:

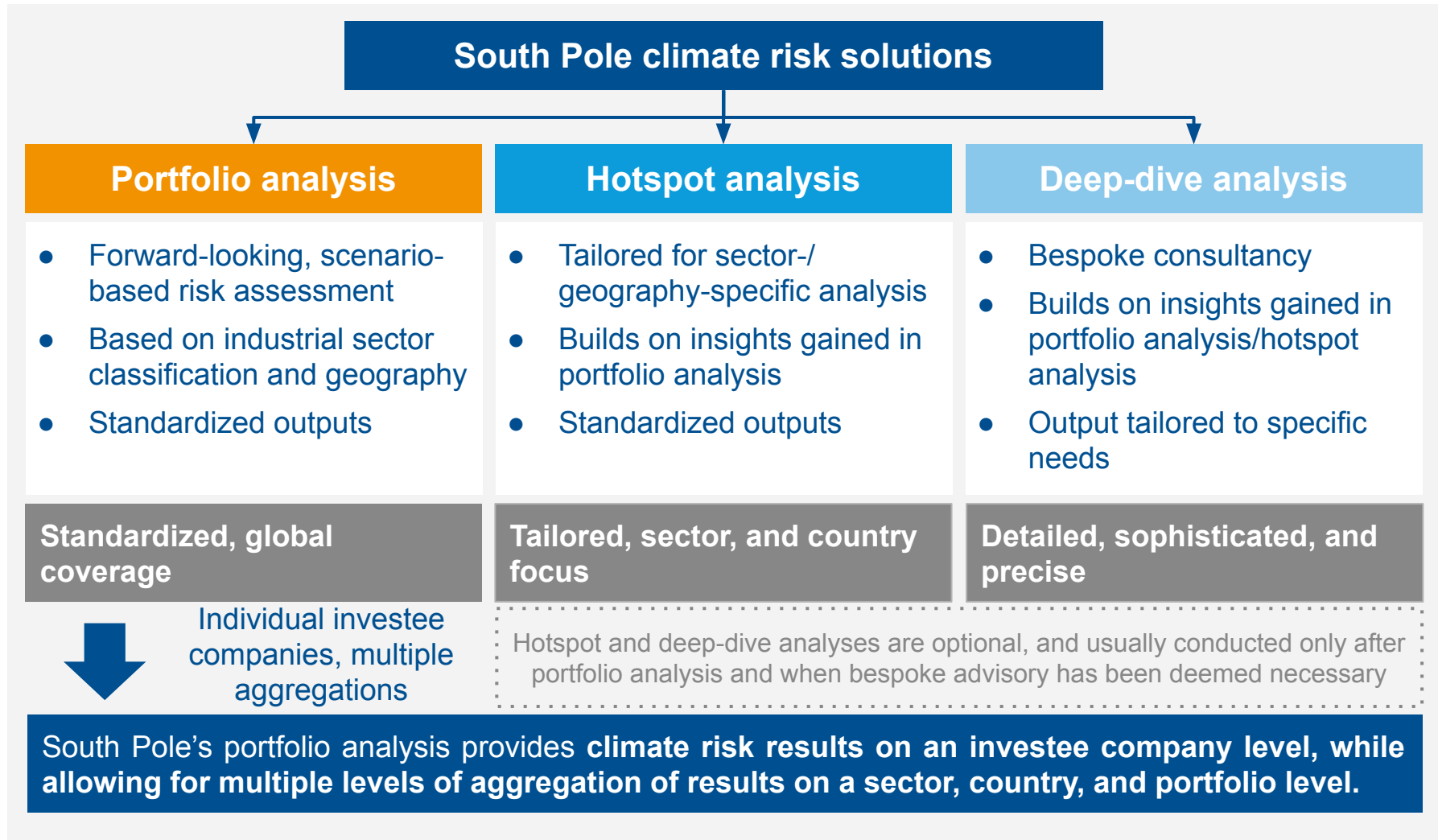
- **How do physical climate risks** like heat-waves, water shortages, floods, or hurricanes **affect different asset classes?**
- **How sensitive are such physical climate risks to different climate scenarios** like a 2°C or a business-as-usual scenario?
- **How are investment portfolios affected by changes in policy and legal environment** as potential new carbon markets and climate policies emerge?



South Pole's support in addressing portfolio's exposure to climate risks

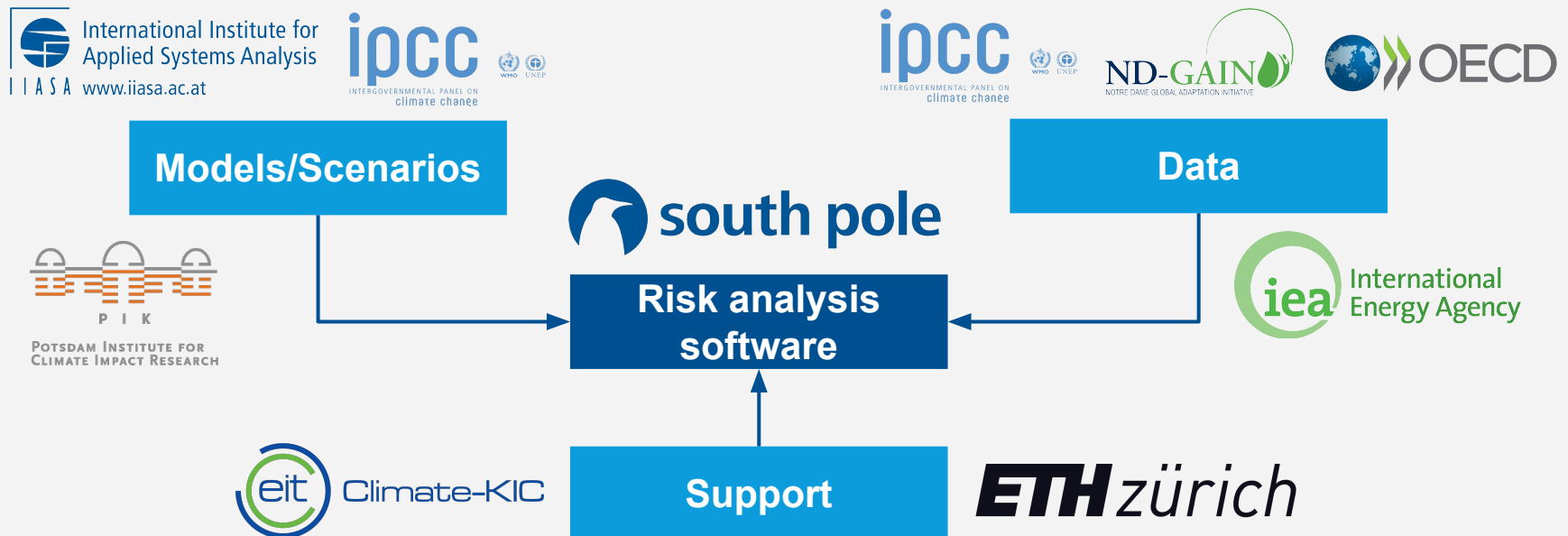


Our approach ensures both breadth (top-down) and depth (bottom-up) in risk assessment

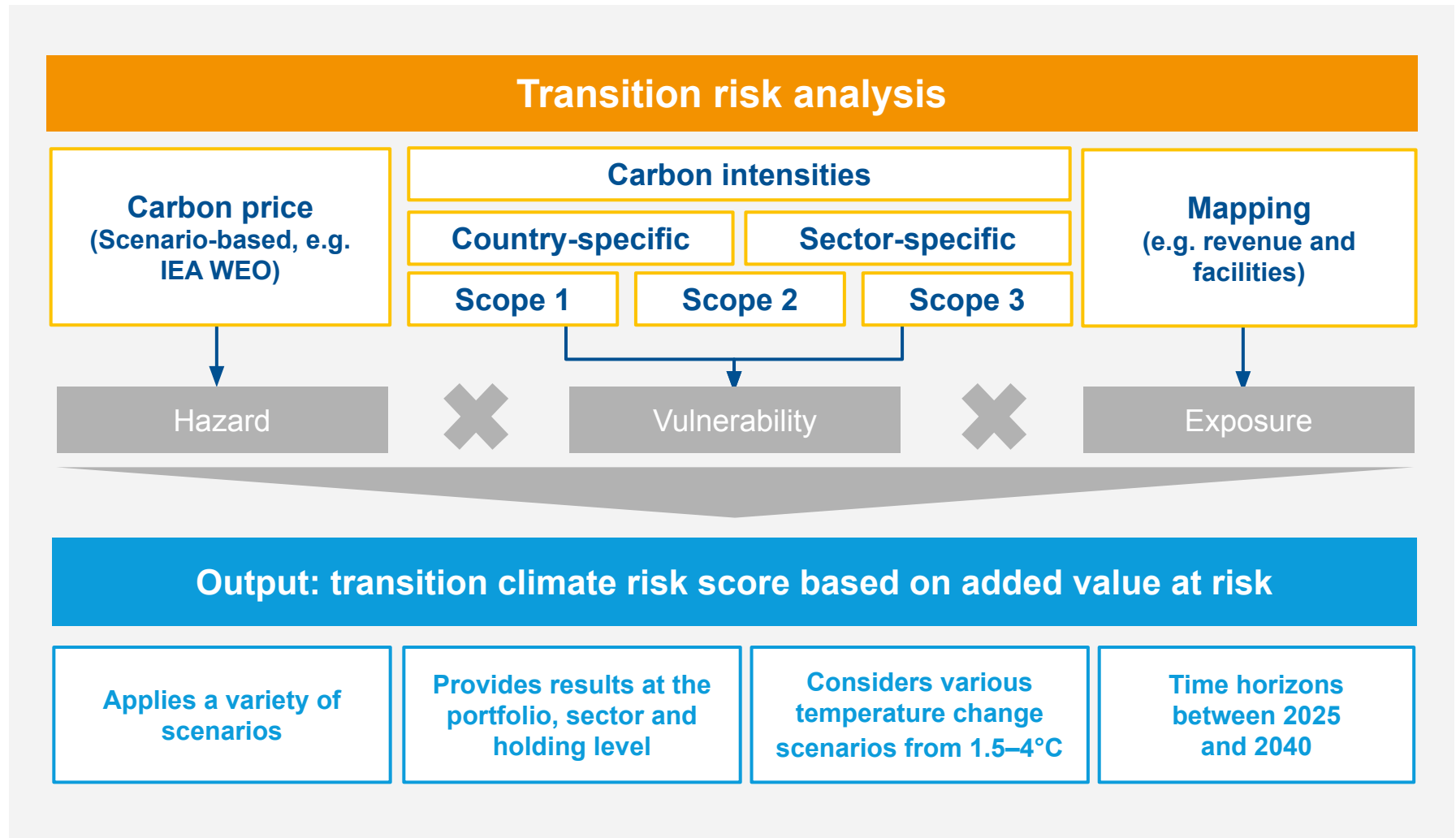


Risk analysis based on established scientific evidence

South Pole risk analysis uses available scientific data, methods, and knowledge to continuously increase its granularity and scope



South Pole's scenario-based methodology used to quantify transition risks



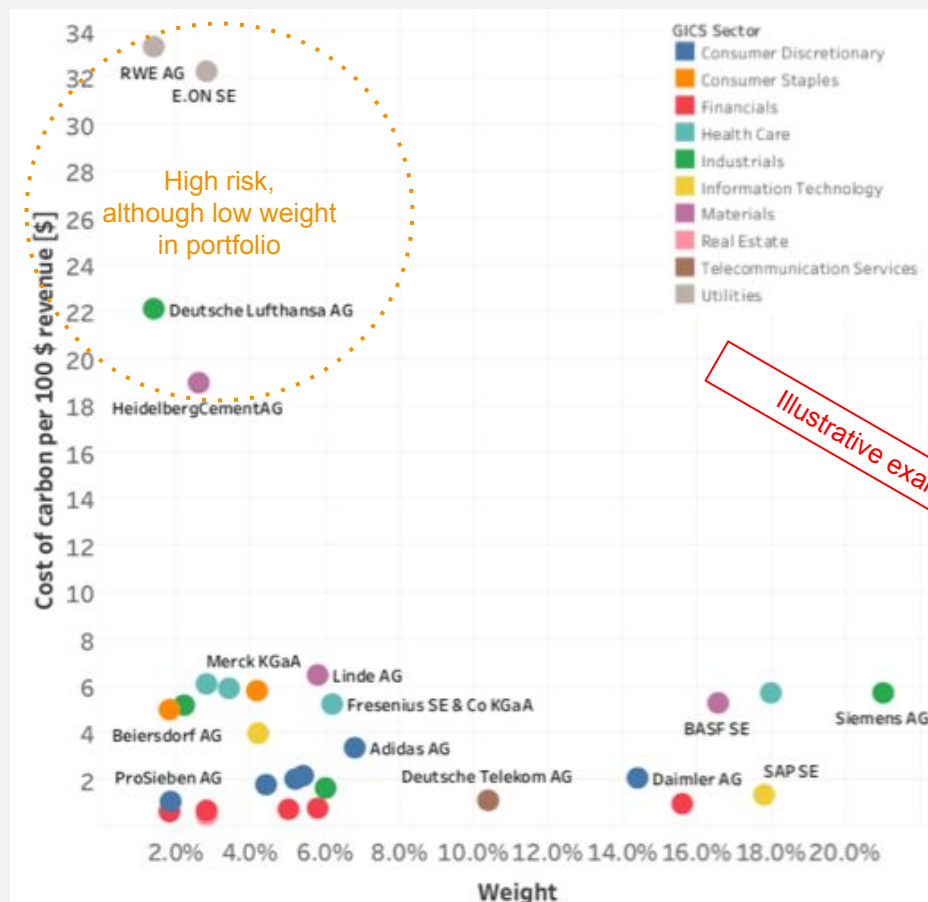
Example of transition risk calculation

Risk factor/areas of operation	Sweden	Brazil	India	Peru
Exposure (based on sector and location) Holding sector: mining and quarrying	32%	26%	16%	26%
Scope 1 intensity [kg CO ₂ eq./USD]	0.53	0.36	0.52	0.16
Scope 2 intensity [kg CO ₂ eq./USD]	0.41	0.16	9.78	2.10
Scope 3 intensity [kg CO ₂ eq./USD]	0.11	0.20	0.22	0.32
Carbon price based on IEA RTS (2050) [USD/t CO ₂ eq]	48	48	48	48
Overall risk score – weighted average of intensity, value added and carbon price	Risk score for Company Y: -13.81%			

Examples of climate risk results and outputs

Portfolio risk hotspots are highlighted by identifying high risk companies and sectors

Investee companies' transition risk results are presented in both table format and various charts to allow for comparison between companies, across and within portfolio sectors.



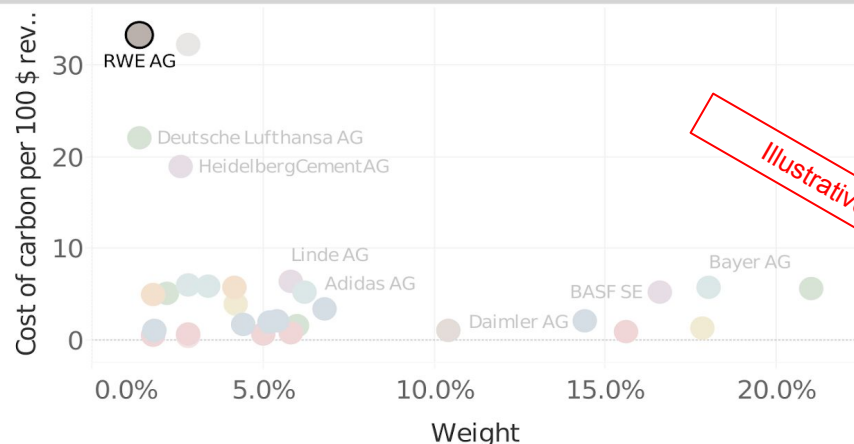
Company name	RTS (2025)	2DS (2025)	RTS (2040)	2DS (2040)
Vonovia SE	0.08	0.21	0.16	0.47
Commerzbank AG	0.15	0.39	0.30	0.87
Deutsche Boerse AG	0.18	0.45	0.34	1.00
Muenchener Rueckversicherungs-Gesellschaft AG in Muenchen	0.18	0.47	0.35	1.04
Deutsche Bank AG	0.19	0.48	0.36	1.06
Allianz SE	0.27	0.68	0.52	1.51
Deutsche Telekom AG	0.30	0.77	0.59	1.71
ProSieben AG	0.32	0.80	0.61	1.77
SAP SE	0.39	0.99	0.76	2.21
Deutsche Post AG	0.51	1.27	0.97	2.83
Continental AG	0.73	1.83	1.40	4.08
Volkswagen AG	0.81	2.05	1.56	4.56
Daimler AG	0.86	2.16	1.65	4.81
Robert Bosch AG	0.94	2.37	1.81	5.27
Adidas AG	1.00	2.53	1.93	5.62
Fresenius SE & Co KGaA	1.32	3.33	2.54	7.40
Fresenius Medical Care AG & Co KGaA	1.34	3.38	2.58	7.51
Thyssenkrupp AG	1.46	3.69	2.81	8.20
Beiersdorf AG	1.47	3.69	2.81	8.21
BASF SE	1.52	3.83	2.92	8.51
Bayer AG	1.57	3.96	3.02	8.81
Siemens AG	1.62	4.09	3.12	9.10
Henkel AG & Co KGaA	1.65	4.15	3.16	9.22
Merck KGaA	1.76	4.43	3.37	9.83
Linde AG	1.88	4.73	3.61	10.52

Examples of investee company comparisons

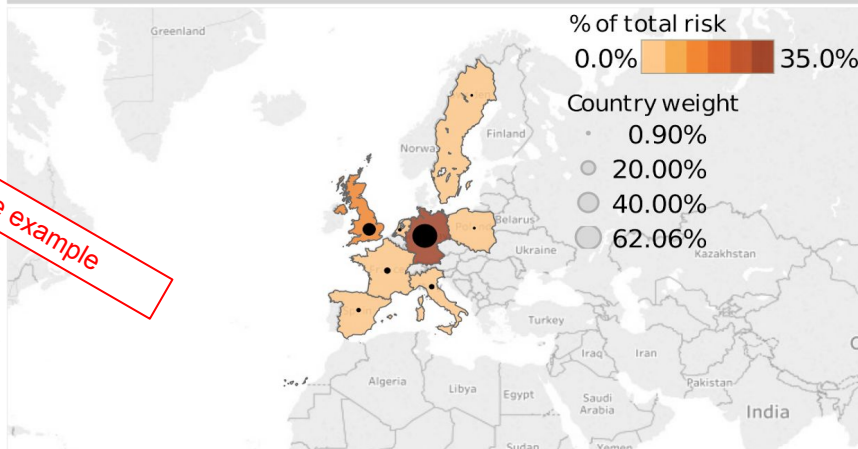
Results vary according to market, operational, and supply chain factors

RWE transition risk

Risk by Ticker

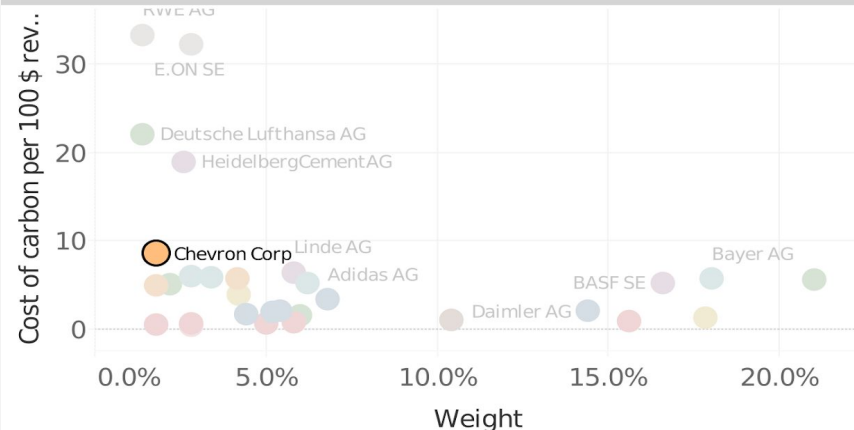


Risk by country

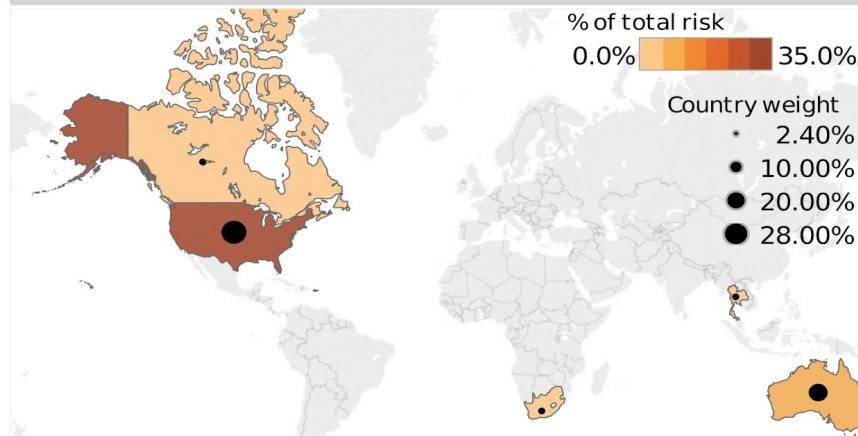


Chevron Corp. transition risk

Risk by Ticker



Risk by country

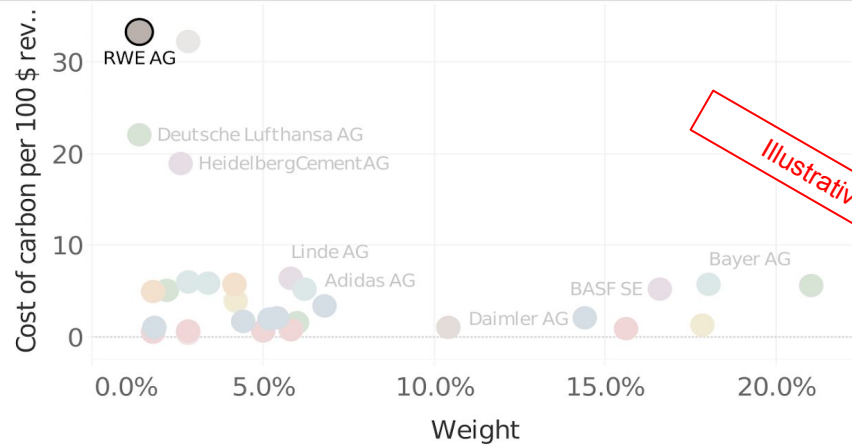


Examples of investee company comparisons

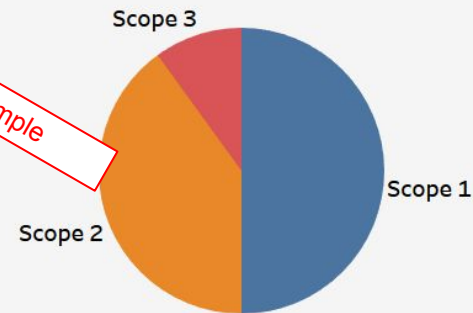
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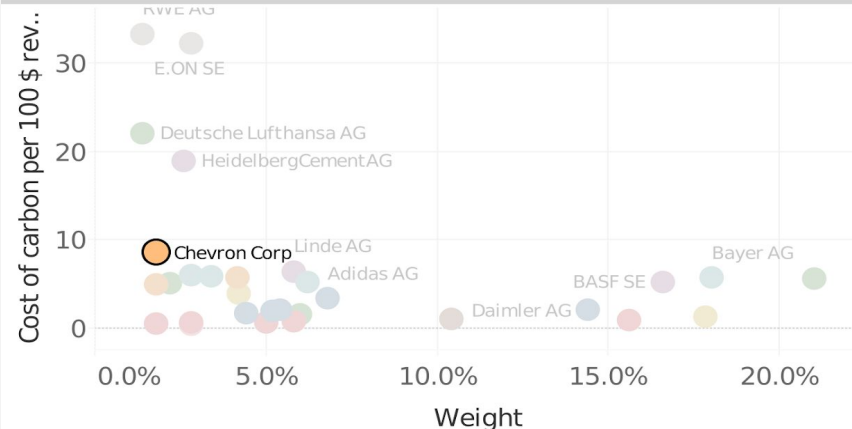


Risk contribution by scope

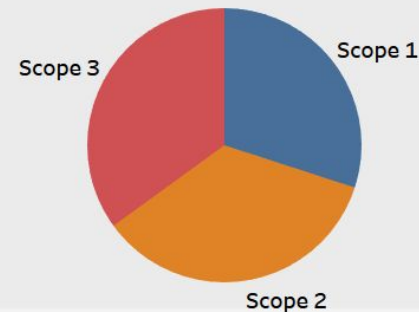


Chevron Corp. transition risk

Risk by Ticker



Risk contribution by scope



Thank you