

Insurance Pricing & Climate Risk Externalities

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SAV/SCOR Sustainability in (Re-)Insurance Conference

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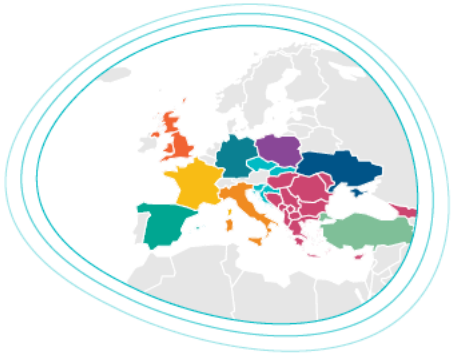
Who We Are

- The European Climate Foundation is a grant-making foundation supporting climate action across Europe and beyond. ECF supports over 700+ partner organisations to drive progress towards the goals of the Paris Agreement, promote practical policymaking in response to the climate crisis, and broaden political and public support for net zero
- 8 interconnected priorities, including **shifting the financial system** by supporting finance flows and corporate action consistent with the Paris Agreement
- With you today:

- Daphné McRae, Senior Associate, Climate Finance Programme, ECF
- Jérôme Crugnola-Humbert, Senior Advisor, Crugnola Humbert Consulting



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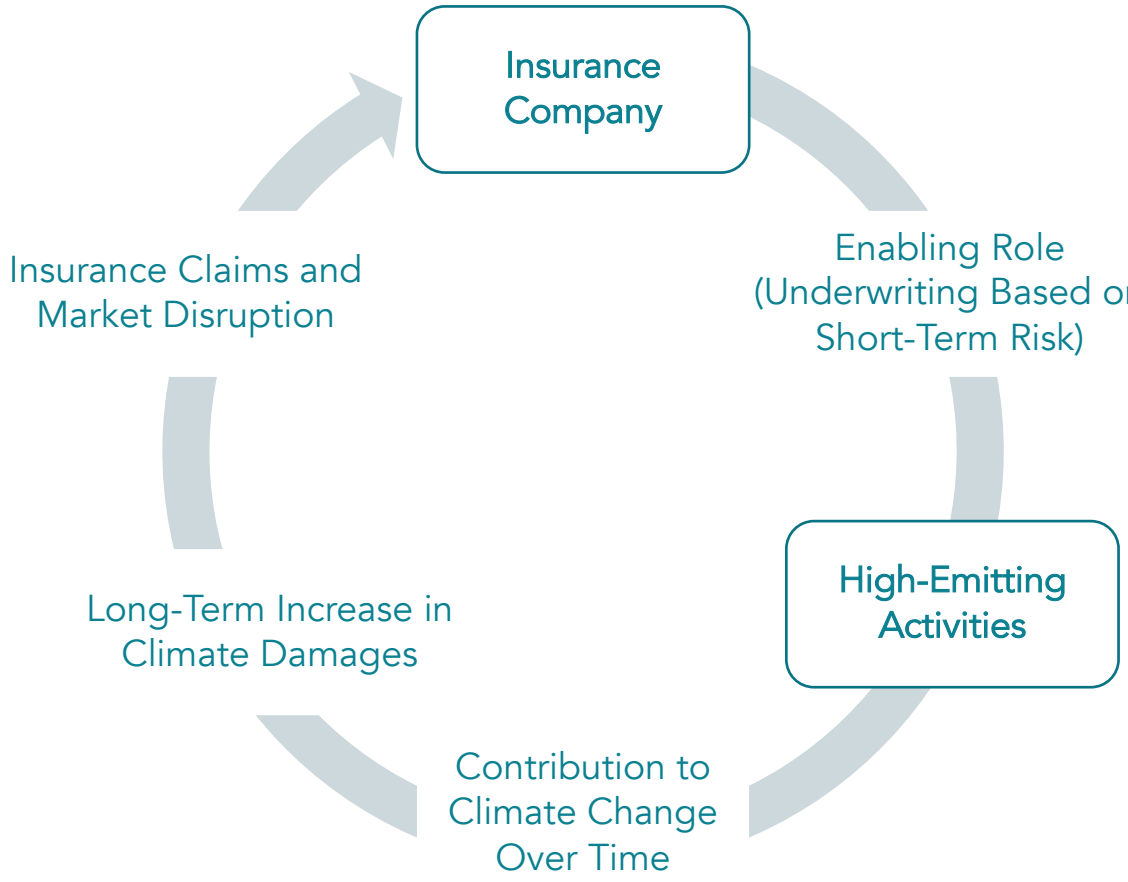
The Imperative For Pricing All Climate Risks



- When high-emitters and other risk-building activities degrade the perspectives for insurers, underwriting and pricing conditions should reflect these **risk externalities**
- **"Polluter pays" principle** (Art. 191 of the Treaty on the Functioning of the European Union): '*The costs of negative externalities must be borne by the activities generating them*'
- Otherwise, business-as-usual may lead to gradually **deteriorating risk-return** + potential **regulatory scrutiny and political backlash**

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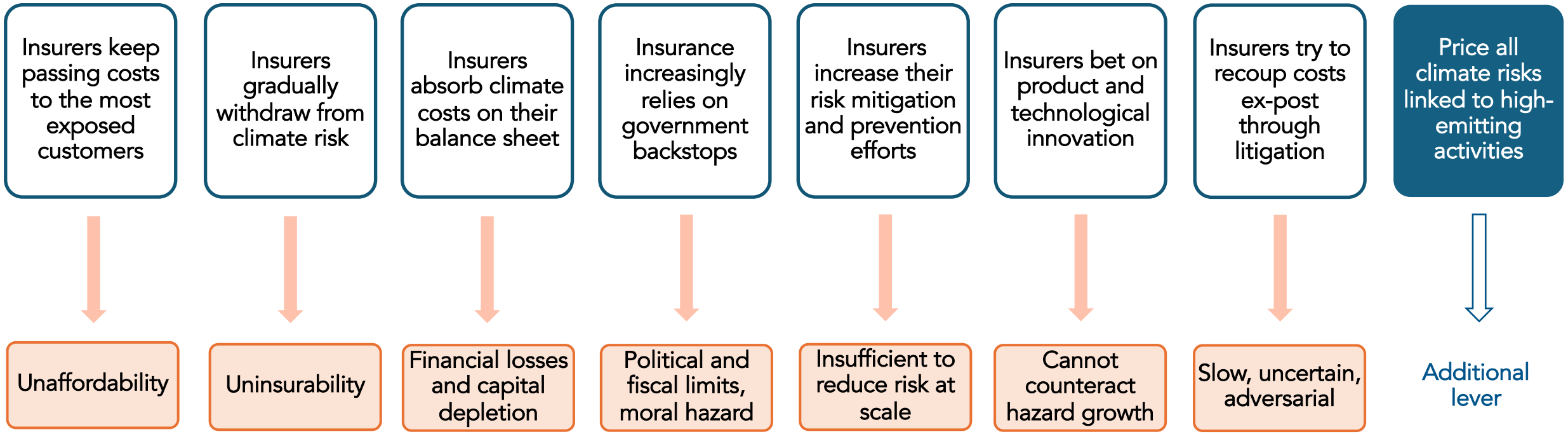
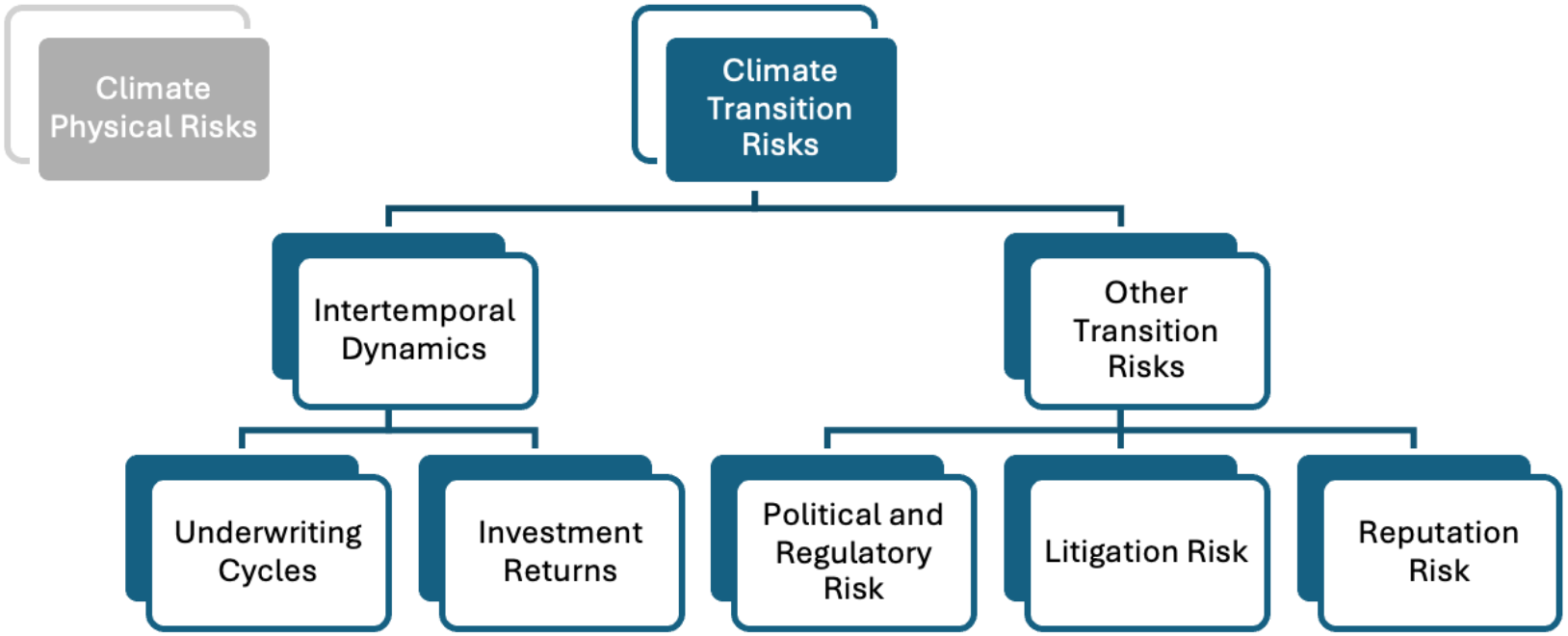
Strategic Options For Physical Climate Losses

- Insurers face an increase in climate losses beyond what exposure growth or inflation explain alone.
  The sector's profits and solvency remain good so far, but **how will insurers strategically adapt?**



Additional Climate Transition Risks

- Insurers also face distinct but complementary **transition risk** rationales to price upfront all the risks created by high-emitting activities and that cannot be avoided or recovered later



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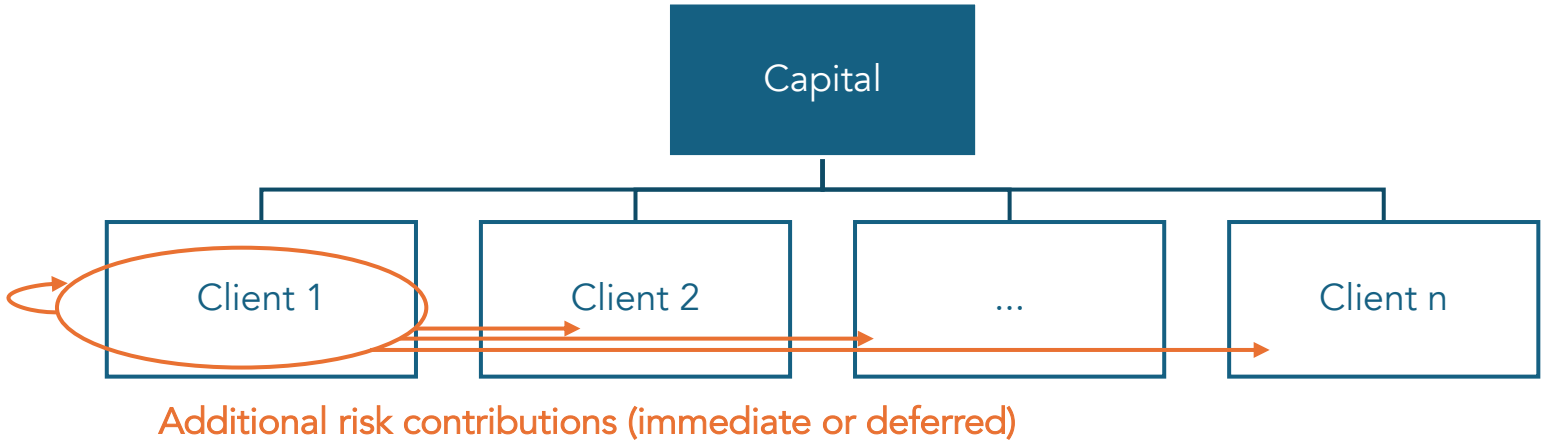
Consequences for Optimal Pricing & Underwriting

- Conceptually, an insurer tries to set **optimal levels of exposures and premiums** for its various clients to maximise its expected profit (**return objective**), under the condition that the resulting portfolio does not have a required solvency requirement greater than the company's available capital (**risk constraint**)



- Solving this **risk-return problem** only short-term, at the level of individual client siloes, and without considering **all portfolio-level risk externalities** is not optimal → **increase the premiums and/or decrease the exposure** for clients whose contributions to the total portfolio risk were underestimated

Legal & Regulatory Feasibility



Independence & anti-trust	Pricing decisions, methodologies, and assumptions are developed independently (*unless required by regulation*)
Risk-based justification	Premium adjustments are grounded in forward-looking risk assessments, scenario analysis and expert judgment
Materiality & proportionality	Focus on exposures where climate-related factors represent a material and demonstrable component of risk
Strategic alignment	Consistency with the insurer's fiduciary duty, risk appetite, ORSA conclusions, long-term strategy, and key functions
Traceability & explainability	Clear documentation to support governance, actuarial validation, supervisory review, and potential challenges

Selected Analogues & Case Studies

- **Bonus–Malus Systems (Motor Insurance):** accidents act as risk signals, triggering multi-year premium surcharges on annual contracts and incentivising safer driving
- **Smoking Surcharges (Life & Health Insurance):** insurers charge higher premiums to smokers because their behaviour today raises long-term mortality and morbidity risk
- **Environmental Liability & PFAS:** insurers already use exclusions and premium surcharges to manage emerging environmental hazards with long, uncertain causal chains
- **Sustainability-Linked Insurance:** the SBB (Swiss Federal Railways) pilot insurance programme links premiums to emissions reduction. It shows insurers can treat climate-relevant behaviour as a relevant risk proxy and legitimate underwriting factor. Sustainability-Linked Insurance Principles extend it into a replicable market standard









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Candidate Activities For Pricing Adjustments

Each insurer can define the candidate activities independently, based on its own portfolio, risk appetite, and strategy

Potential risk-based lenses for selecting activities

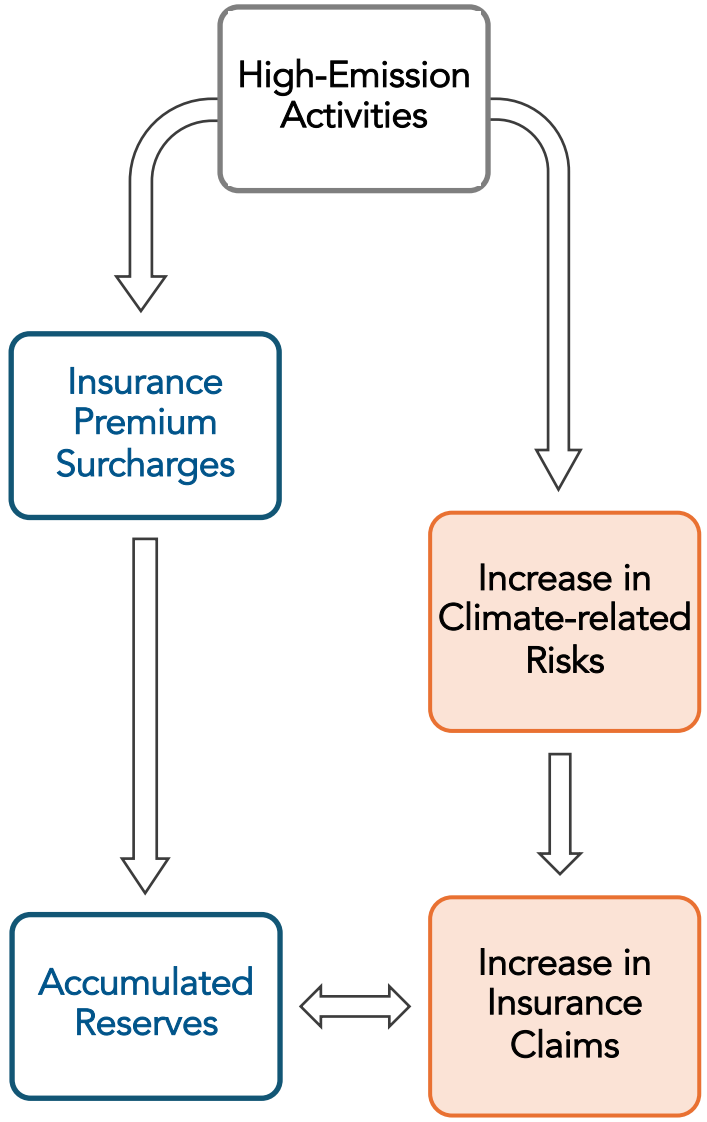
- High emissions intensity (e.g., fossil fuels, intensive agriculture)
- Transition risk exposure (e.g., new oil & gas development, long-lived industrial facilities)
- Physical risk amplifiers (e.g., land-use change, property development in flood-prone regions)

Additional filters that insurers can consider

- Commercial and regulatory feasibility of premiums surcharges (e.g., B2B insurance)
- Insurers' leverage and ability to create incentives (e.g., freight shipping)

Use of Proceeds

- Insurers could retain part of the premium surcharges to build **capital buffers against future losses**
- Insurers could also use the proceeds from premium surcharges to **co-finance risk prevention and adaptation measures** to reduce future damages (linking climate mitigation and adaptation)
- Insurers might also recycle part of the surplus to support **transition activities** or **insurance affordability**



Operationalising the Framework

- Modular **bonus-malus pricing structure:** insured activities that contribute to climate risk accumulation attract surcharges on risk-relevant premium components (while activities mitigating climate exposure could benefit from lower premiums)

- **Scalable framework** that can be adapted across lines of business and calibrated to reflect each insurer's strategic risk appetite, models, and local regulatory constraints

Premium lever	Potential climate adjustment
Pure risk premium	~
Risk loading in the premium	✓
Reinsurance costs	✓
Internal expenses	✓
Distribution costs	~
Investment adjustment	✓
Capital charge and profit margin	✓
Short-term commercial adjustments	✓
Long-term strategic adjustments	✓
Insurance premium taxes	✗
Regulatory levies & political adjustments	✓

✓ yes, ✗ no, ~ limited or qualified

Examples of Potential Premium Adjustments

- **Internal expenses** should be adjusted to reflect the full extent that high-emitting business requires additional underwriting, monitoring, reporting, or due diligence
- **Capital charge** should reflect shareholder risk premiums and potential contradictions with the insurer's long-term risk appetite (e.g., net zero targets). Climate scenarios in ORSA are a key regulatory anchor to bridge the short- vs. long-term perspective:



- **Tactical commercial rebates** may be made conditional on climate trajectories and subject to appropriate risk governance guardrails

Illustrations

- Illustrative estimates for the type of insured activities and size of potential adjustments:

Example	Main rationale	Sample drivers for adjusments
Offshore LNG Terminal 	High emissions intensity, physical vulnerability & transition risk	Higher capital charges, higher risk loadings (risk concentration)
Land-Use Change for Agribusiness Expansion 	Activities increasing physical risk, long-tail liability	Higher local flood/landslide risk, higher monitoring costs
Freight Shipping 	High emissions intensity, strong insurer leverage	Withheld commercial discounts until the client greened its fleet

Potential total premium adjustment: +10 to 18%

- These examples **do not represent actual market data, proprietary models or underwriting decisions**
- **Repricing is a complement to other strategies:** for instance, an insurer with a net-zero target may to exclude new fossil fuel developments and apply pricing adjustments to existing fossil fuel infrastructure

Conclusion

- Insurance pricing often does not reflect **portfolio-level climate risk externalities**, pushing rising climate costs onto the most exposed customers instead of back to the activities that create them
- **Targeted premium surcharges** on high-emitting and other risk-buildings activities offer a market- and risk-based way to generate revenue, align incentives, and preserve insurance's business model
- **Significant funds could be raised**: a 15% surcharge on the ~USD 43 billion global oil & gas insurance market[1] could generate ~USD 6.5 billion per year or ~USD 65 billion over a decade
- This revenue may help **stabilise insurers' portfolios**, support future climate-loss coverage, and might also be channelled toward risk prevention, transition-aligned activities, and insurance affordability measures
- Pricing adjustments complement other strategies. Whole risk pricing informed by climate externalities is not a radical departure from insurance fundamentals but a **logical evolution in a warming world**
- Competitive considerations can delay the introduction of such adjustments by individual insurers, but market-wide adoption would be accelerated if required by law or encouraged by supervisors

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[1] DATAINTELO, Global Oil and Gas Insurance Market, April 2026

Disclaimer

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