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**An insurer's guide
to a decarbonizing
and climate-
changed world**



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EXECUTIVE SUMMARY

For insurers, climate change poses significant challenges and opportunities, amplifying existing risks and introducing new ones. To adapt and thrive in a decarbonizing world, insurers need to understand the key risks to their operations and respond to them.

Climate change presents the single biggest risk – and opportunity – for insurers in the coming decades. These risks can be understood in three overarching categories: physical risks, transition risks, and litigation risks. Physical risks are direct weather-induced impacts, transition risks relate to the response by society to decarbonization and litigation risks are those resulting from legal action taken against insurers or their customers. These risks feed through into insurers’ operational, reputational and underwriting-related processes differing by geography, sector and over time. Unless properly integrated into insurers’ risk assessments and underwriting processes, climate risks threaten the financial viability of insurers. To address climate change, policy makers are setting ambitious decarbonization goals and designing incentive schemes. These initiatives are reshaping sectors and economies by phasing out carbon-intensive technologies in favor of greener alternatives. As a result, the demand landscape for insurance products is evolving, impacting both the assets insured and pricing strategies for insurance products.

To remain relevant in a decarbonizing economy and take advantage of new opportunities presented, we recommend insurers do three things:

1.



Understand climate risks and impact areas

Insurers must conduct a comprehensive assessment of physical, transition, and litigation risks emerging from climate change, considering both sectoral and geographic implications. By understanding these changing risks and anticipating how they will evolve, insurers will have a solid knowledge base to assess the climate impact on their operations.

2.



Quantify the financial impact of decarbonization and climate risks on existing products and services

Based on the insights from step 1, insurers should assess the financial cost of decarbonization through modelling the impact on underwriting and selection processes for existing products.

3.



Evolve product and services offerings to respond to decarbonization and climate change

Insurers should evaluate their overall portfolio to address climate risks and respond effectively to changing customer need. Through updating the pricing and selection processes for existing products and services and expanding into new ones insurers can thrive in a decarbonizing world. Leveraging their unique position, insurers can use their adjacent services to actively drive change and reduce climate-related risks to their operations to position themselves as responsible institutions and build further trust with their customers.




SECTION 1

Decarbonization and climate change presents new challenges and opportunities for insurers

The increasing frequency and severity of extreme weather events is transforming the insurance market and reshaping insurer's risk landscape. In the US alone there were 18 climate-related disasters that resulted in damages over \$1 billion¹ in 2022, the third highest on record, behind 2020 (22 events) and 2021 (20 events) leading to a surge in claims on insurers. Climate change means all insurers face increasing physical climate risks, with those heavily exposed to weather-sensitive industries such as agriculture and tourism facing even greater challenges (see Exhibit 1).

EXHIBIT 1

Climate related risks impacting insurers

| Risk category | Examples |
|---|--|
|  Physical | Drought induced crop failures Flood damage to property Electronics damaged due to extreme heat Property subsidence due to low rainfall Reduced fishing yields due to ocean acidification |
| | Increased heatwave-related illness Financial losses from storm-induced business interruption Wildfires damaging properties, vehicles and contents Flights cancelled due to storm |
|  Transition | Business financial losses from deindustrialisation Increased train-related delay disruption claims Stranded energy extraction assets due to energy transition Reduced demand for gas boiler service cover |
| | Insured property un-mortgageable due to not meeting efficiency standards Reduced asset valuation of insured combustion engine vehicle Increased costs of repair for vehicles due to rising ETS price |
|  Litigation | Oil company policyholder litigated due to slow climate action Insurer litigated for underwriting new oil exploration activities Litigation brought by insurer's shareholder due to breach of fiduciary duty |
| | Legal action brought against insurance company for insufficient climate planning Litigation brought against insured company for environmental degradation Loss and damage lawsuit against insurer |

Source: Strategy& analysis

¹ 2022 U.S. billion-dollar weather and climate disasters in historical context, Climate.gov (January 2023)

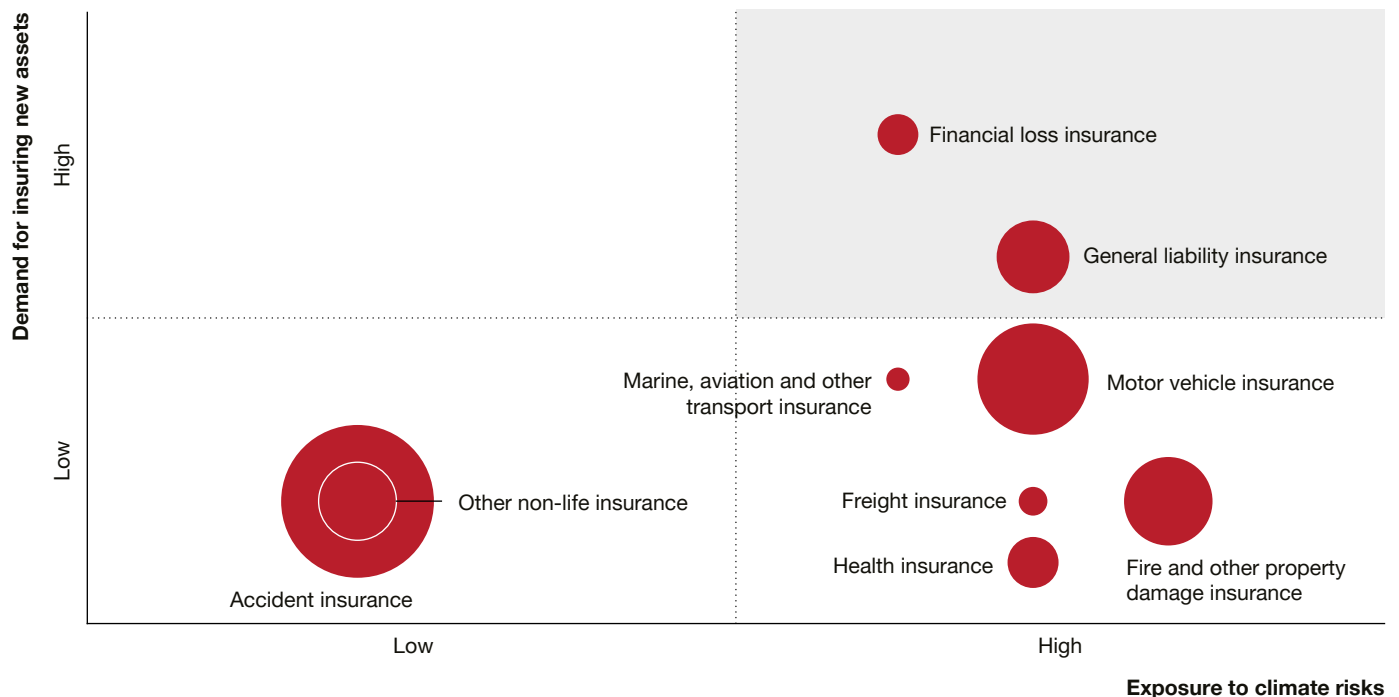
The impact of extreme weather for insurers varies significantly by geography, with climate vulnerabilities (and subsequent political responses) differing between regions and countries. In the Netherlands, around 59% of the land mass is currently at risk of flooding, including 26% which is below sea level². Without additional adaptations, climate change and thermal expansion will accelerate both coastal and river flood risk in the country. Such events would have widespread catastrophic consequences and would lead to more frequent and costly insurance claims across sectors from direct damages and injuries as well as significant indirect disruption to revenue and income streams.

In response to growing physical risks, government policy, consumer preferences and technological advancements are driving decarbonization across industries and sectors. For insurers, this creates transition risks impacting the types of assets insured and the risks associated with these assets. In addition to changes the type of asset insured, the demand for certain insurance product types will also be affected by widespread decarbonization efforts. *Exhibit 2* depicts how the degree of impact both in terms of exposure to climate risks and changing demand for insurance product types will vary by sector.

EXHIBIT 2

Changing sectoral demand for non-life insurance products v/s exposure to climate risks, based on OECD data (2023)

Change in climate change risks and opportunities for non-life insurance sectors (bubble size: global GWP, 2021)



Source: Strategy& analysis

























² Low probabilities - large consequences: Reducing the vulnerability of the Dutch population to floods, PBL (retrieved September 2023)

One response to climate change is the move towards a more circular society which means retailers require less new inventory and instead will offer more repair and maintenance services. In 2023, the European Commission adopted a new proposal that requires sellers of goods to offer repair services, except when it is more expensive than replacement. This is especially relevant for digital devices, which can be unrepairable in case of breakdowns, requiring consumers to purchase new products. Globally, countries are working on legislation to mandate the right to repair. If passed this will decrease the demand for insuring inventory while increasing the need for insurance related to maintenance and service activities. *Exhibit 3* details expected changes within the portfolio of insured assets across different insurance products as a result of climate change.

EXHIBIT 3

Change in assets being insured and implications for insurers

Types of assets being insured 2023-2030

| Non-life insurance product | Changing assets insured towards a decarbonizing world | | Implications for insurers |
|---|--|--|---|
|  Car insurance |  Electrical vehicles |  Fossil fuel cars | <ul style="list-style-type: none"> • Higher repair costs • Increased fire and explosion risks |
|  Bike insurance |  E-bikes |  Motor bikes | <ul style="list-style-type: none"> • Larger quantity of bikes insured • Smaller claims per bike |
|  Fire insurance |  Electrical equipment |  Gas pipes and equipment | <ul style="list-style-type: none"> • Larger risk of fire in more types of applications • Drought-induced fires |
|  Home insurance |  Disaster-proof housing |  No significant change | <ul style="list-style-type: none"> • Larger climate related risks due to flooding, wildfire etc. |
|  Travel insurance |  Low-carbon traveling |  Flying | <ul style="list-style-type: none"> • More risky modes of transportation (biking, driving) • Less-distance traveling |
|  Marine insurance |  Hydrogen driven ships |  Fossil fuel driven ships | <ul style="list-style-type: none"> • Less maritime movements • Phasing out of cruises |
|  Commercial insurance |  Repair and maintenance |  Inventory | <ul style="list-style-type: none"> • Smaller inventories to insure • More claims for reparation costs |
|  Indemnity insurance |  No significant change |  No significant change | <ul style="list-style-type: none"> • Increasing uncertainty due to climate change |

Source: Strategy& analysis

Insurers will not only be indirectly impacted by decarbonization policies but will also face increasing regulation themselves. This is driven by the concern that insurers are not properly prepared for increased climate risks (and consequently the expected pace of decarbonization). In certain countries, like the UK, insurers are already obliged to disclose climate-related risks and opportunities as part of their reporting obligations. Meanwhile, in the US, state regulators are poised to introduce climate regulations for insurers focused on risk monitoring and strategic planning. To comply, insurers must stay abreast of emerging frameworks and legal requirements including on climate risk disclosures, reporting standards and underwriting practices.

Climate impact as a result of slower decarbonization efforts also increases reputational and litigation risks for insurers. This may arise from an insurer being seen as directly contributing to climate change, for example by insuring fossil fuel or carbon-intensive industries or indirectly due to a similar case being brought against an insurer's customer. Increasingly litigation risks are rising worldwide, with climate change litigations doubling between 2015 and 2022³. These litigations can be against the insurer directly, or a company that they cover.

3 Global trends in climate change litigation: 2022 snapshot, J. Setzer & C. Higham, June 2022



SECTION 2

To thrive, insurers need to respond to the challenges presented and take advantage of new opportunities

Faced with this changing climate, insurers have a unique position in the market. With a deep understanding of risk exposure, they also have the ability to incentivise climate-related risk reduction through promoting mitigation and adaptation measures. From influencing policyholders to switch to electric vehicles or supporting drought-resistant crops, insurers have the tools to drive sustainability. Based on our experience in the sector, we set out our three-step approach for insurers to effectively respond to climate change, striking a balance between profitability and managing transition risks and opportunities.

1. Deep dive into the physical, transition and litigation risks for your portfolio

To navigate the complexities of climate change, insurers must first gain a comprehensive understanding of the physical, transition and litigation risks relevant to their portfolio, including how they vary by geography, sector, and time. This involves capturing granular data on physical climate-related risks in the relevant geographies and mapping these to their product and service portfolio. Insurers should deep dive into the increasing risk of climate-related disasters such as wildfires and floods, alongside longer-term meteorological changes such as wind speeds, solar irradiation levels, rainfall patterns, and sea level rises. For an insurer providing buildings cover, this means identifying the physical risks relevant to the assets they insure, such as increased likelihood of wildfires in an area where they insure homes.

Transition risks will differ between sectors, as is demonstrated by the Netherlands in *Exhibit 4, next page*. Between 2021 and 2030, emissions from the power sector are forecast to reduce by up to 75%, while agriculture and mobility emissions are expected to reduce by a modest 8%. For insurers, this means the change in assets insured per sector will adapt at differing speeds. For example, in the Netherlands insurance demand for offshore wind assets is likely to increase sooner than for electric tractors. The variation is influenced by sector-specific policies partly reflects the impact of Dutch-specific policies, such as the SDE++ subsidy scheme which supports cost-efficient CO₂-reduction options, regardless of sector.

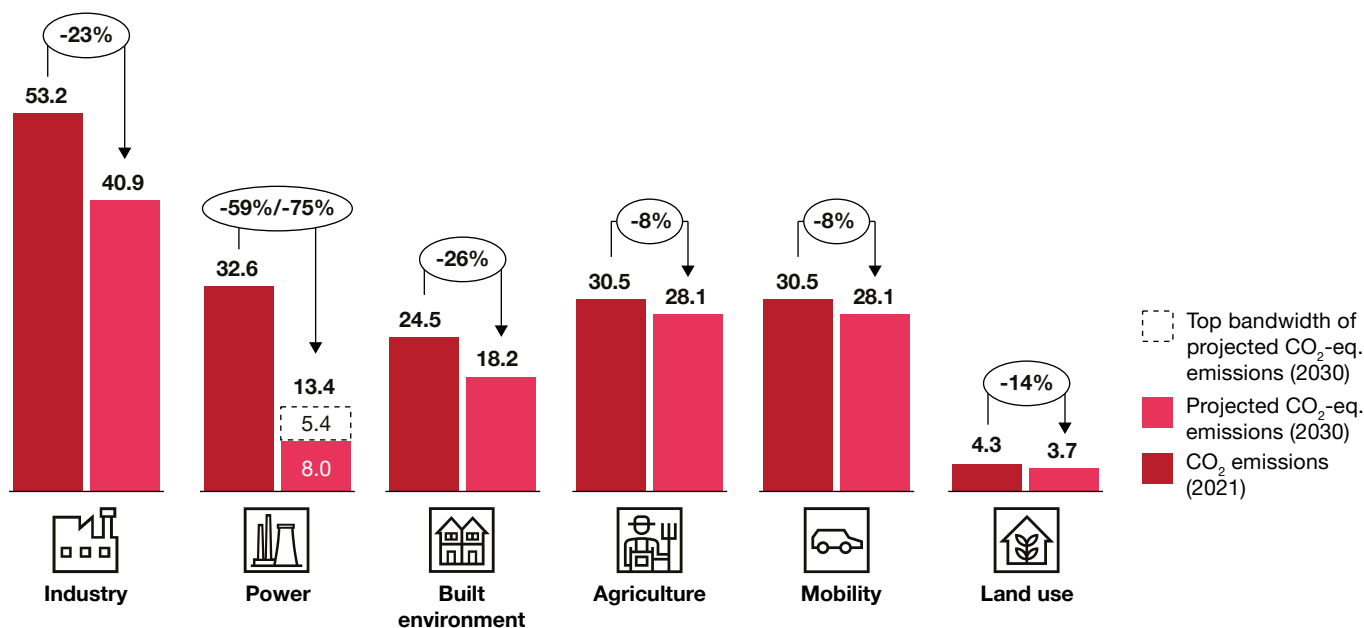
For insurers to understand potential litigation risk conducting a risk assessment of the sectors and geographies covered is vital. Insurers should rate the riskiness of their portfolio, considering factors such as the likelihood of litigation risk or by policyholders for disputes related to product coverage due to climate issues (such as a cancelled flight following a severe storm). As a second step, changing litigation risk for products offered should also be subject to a risk assessment. Products such as directors' insurance face a higher likelihood of legal action resulting in higher costs for insurers.

By analysing relevant physical risks, decarbonization policy and litigation risk, insurers can assess their exposure to climate change and identify the business areas that require most attention. This will therefore provide the basis for effective climate change risk management which protects shareholders' interests and drives sustainability.

EXHIBIT 4

Expected pace of decarbonization per sector in The Netherlands

Expected decarbonization per sector based on current policies, The Netherlands (Mt CO₂-eq./yr, 2021-2030)



Source: Strategy& analysis based on Klimaatakkoord, Coalitieakkoord and Klimaat en Energieverkenning 2022 (PBL)

2. Quantify the financial impact of decarbonization and climate risks on existing products and services

Insurers must quantify the financial impact from decarbonization on their current operations, such as through changes to underwriting risk evaluations and product demand. Leveraging the insights from step 1, insurers should assess the costs of physical, transition and litigation risks to their technical premium models, updating risk features for each product depending on sector and geography-specific considerations. Moreover, the cost of policy and regulatory measures introduced on insurers directly to adapt to decarbonization should also be assessed and quantified.

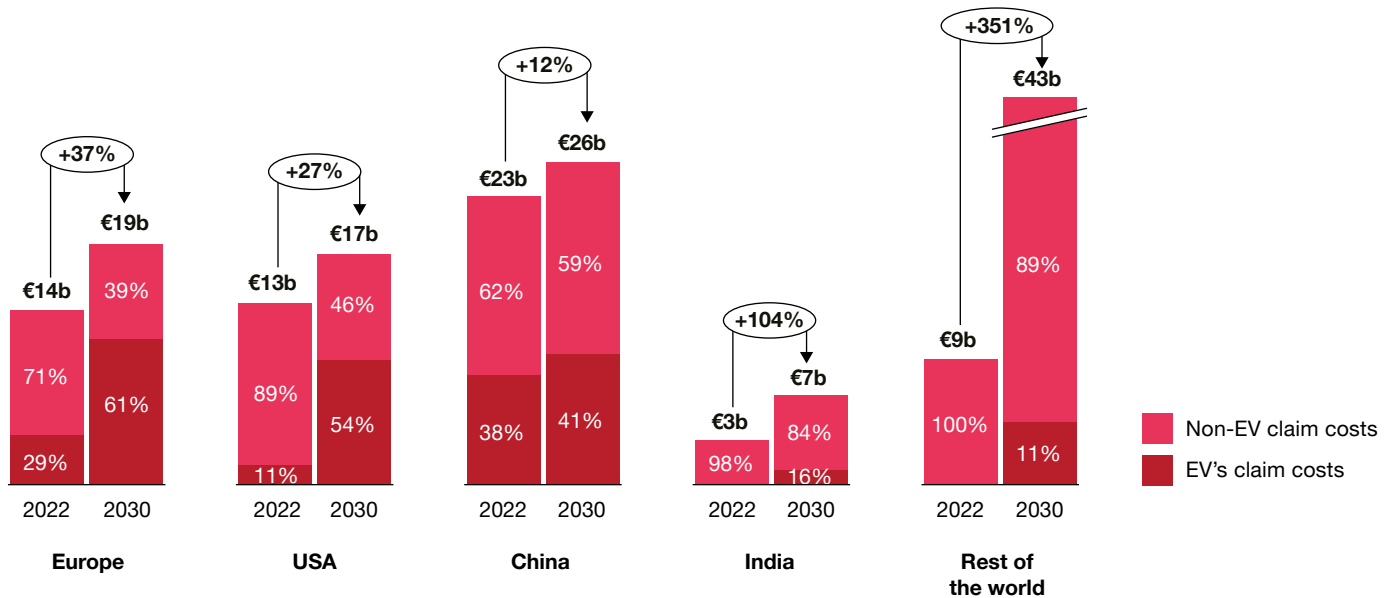
For instance, if we apply this step to car insurers, decarbonization will change the composition of their portfolios as cars transition from fossil-fuel to electric engines. Financially, EVs typically have higher repair costs due to a high cost of battery unit replacement or repair. In addition, EVs face additional fire and explosion risks when there are defects to the electrical components. Insurers must therefore adapt their underwriting and risk assessments of sectors to factor the costs of this changing product profile into their insurance offering. In the short term these risks are expected to increase the claim value for EV owners, due to higher insured values of EVs. As the cost of the cars fall, the technology becomes widespread and parts become more easily accessible this trend is likely to change. In *Exhibit 5*, we depict an estimation of the total claims value from all new EVs and non-EVs sold in different parts of the world, based on a historical analysis of EV v/s non-EV claims frequency and value. The analysis suggests that the total claim value from EVs and non-EVs is expected to converge (by 2030)

as the technology learning curve of EVs reaches maturity and the key drivers of claims will remain the same for an EV v/s non-EV car. However, the costs for an insurer will differ across regions and time frames due to the difference in rate of EV adoption. By evaluating the financial impact of decarbonization driven portfolio changes on underwriting and risk assessments with regular monitoring and updates, insurers can maintain profitability while actively contributing to decarbonization efforts.

EXHIBIT 5

Illustrative financial modelling of an insurer’s changing passenger car-related claims due to higher EV take-up¹

Projected additional passenger car insurance claim costs per year 2022-2030



¹ This analysis assumes that all new cars sold are insured and that the average claim value and frequency remains similar across different regions
Source: Strategy& analysis

3. Evolve product and services offerings to respond to decarbonization and climate change



To adapt in a rapidly changing environment, insurers must update their product offerings to address changing customer, regulatory and market demands. For existing products and services, based on financial modelling from step 2 insurers should update pricing and consider the viability of their product offering to maintain profitability. Insurers also need to assess their overall portfolio and develop new solutions for emerging needs, such as insurance for hydrogen pipelines or sustainable aviation fuel plants. Across all products and services, insurers need to consider their unique social obligations, and apply principles such as fair access to preventative services and affordability to climate-related insurance products. To navigate this transition, we have developed a strategic framework, set out in *Exhibit 6, next page*.

Insurers can ensure they position themselves strategically to take advantage of climate change opportunities by, for example, aligning commercial premium processes with decarbonization ambitions. As part of product redevelopment, insurers should consider whether all groups can access insurance products and protect themselves against climate costs and damages.

Insurers can also use their platform and reach to offer tailored advice and products which respond to decarbonization and reduce climate risks to society.

One example of this is, including how government subsidies, policy changes and technological advancements might benefit customers. By embracing decarbonization opportunities, insurers can respond to societal obligations, enhance their value proposition and offerings, positioning themselves as leaders in managing climate-related risks while capturing new opportunities presented by the transition to a sustainable future.

EXHIBIT 6
Strategy& framework for evolving an insurers' customer offer applied to passenger car insurance

| Potential levers | Possible options for insurers to consider | | | | Examples | |
|--|---|--|---|--|---|---|
|  Evolve products and services | Pricing (incl. rebates and excess) | Usage based insurance | Favourable pricing for low carbon choices | Complete sustainable insurance multi-product bundles | Ecosystem specific bundles (e.g. mobility) | |
| | Tighten underwriting/selection process | Expand into new product/customer segments | Training clients on effective usage of new tech | Adapt underwriting process to guide risk selection | Re-pricing/re-assessing on renewal | Excluding specific segments from coverage |
| | Managing profitability | Assist clients with financing the tech investments needed to manage the transition | | Sustainable claim handling – e.g. repair vs. replace | Increase target ambition | |
|  Provision of adjacent services | Information and curation | Develop a platform for providing de-carbonization advice | Share relevant policy updates with S+ME clients | Provide help in ownership transition | Access to de-carbonization experts for consultation | |
| | Partner for access | Partner with product providers | Partner with usage/infrastructure providers | Partner with shared usage platforms | Re-insurance to transfer risk and support in financing the transition | |
| | Partner for managing transition | Partner with alternative technology providers | Partner with local govts. to provide subsidy access | Partner with public transport companies | | |

Source: Strategy& analysis

To conclude, while insurers must be conscious of increasing operational risk due to climate change, decarbonization also provides significant opportunities. Insurers can adapt their products to reduce climate risks, drive the decarbonization agenda and reduce the overall cost of insurance. By applying our three-step approach, insurers can effectively navigate climate change complexities and play an active role in decarbonization. Understanding the risks and climate impact allows insurers to make informed decisions and will be the basis of incorporating decarbonization costs into products to manage financial viability. Finally, updating product offerings means that insurers can meet the evolving needs of customers and adapt to the changing risk environment. By embracing this approach, insurers can position themselves as leaders in managing climate-related risks while capturing new opportunities that arise from the transition to a sustainable future.

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