

Good Practice

Integrating climate-related risks in the ORSA

DeNederlandscheBank

EUROSYSTEEM



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Introduction

Climate-related risks can translate into physical risks and transition risks, and can have a material impact on insurers.

Given the potential impact on the assets side of insurers' balance sheets and on their technical provisions, DNB expects them to integrate climate-related risks into their Own Risk and Solvency Assessments (ORSA) by describing the impact of these risks on their risk profile.

If the risks are material, we expect the institution to develop a relevant scenario in their ORSA ([see also our Q&A on climate-related risks](#)).

To provide guidance for integrating climate-related risks in the ORSA and to explain our expectations in this regard, we analysed the ORSAs submitted in 2018. We have formulated good practices based on this analysis.

We have also laid out the relevant laws and applicable regulations. In addition, we outline the main climate-related risks (physical risks and transition risks) that could have an impact on insurers. We also set out the principles for integrating climate-related risks in the ORSA in the form of cross-sectoral as well as sector-specific good practices.

Relevant laws and regulations

This Good Practice document offers guidance in the application of the following laws and regulations:

- Article 262 of the Delegated Solvency II Regulation
- EIOPA Guidelines 5, 7 and 8 for own-risk and solvency assessment

Article 262 of the Solvency II supervisory framework stipulates that the ORSA must include the risks the undertaking is or could be exposed to, taking into account potential future changes in its risk profile due to the undertaking's business strategy or the economic and financial environment, including operational risks. Guideline 5 of the framework also states that 'The undertaking should evidence and document each ORSA and its outcome'.

Given the potential impact on the assets side of insurers' balance sheets and on their technical provisions, we expect them to integrate climate-related risks into their ORSA by assessing and describing the impact of these risks on their risk profile, with due consideration of the nature, extent and complexity of the risks inherent in their activities. We expect the ORSA report to present and explain the outcomes of this analysis. If climate-related risks are not regarded as material, for instance because the insurer is not or could not be exposed to them, then we expect this to be included in the explanation. If the risks are material, we expect the institution to develop a relevant scenario in the ORSA. This applies to both physical risks and transition risks.

Please refer to our [Q&A](#) for more information.

Climate-related risks

Insurers may be vulnerable to the physical consequences of climate change (physical risks) as well as to the transition to a climate neutral economy (transition risks).

Physical risks

The Dutch Royal Netherlands Meteorological Institute (KNMI) mentions the following possible consequences of a changing climate: wind and storm pattern shifts, increased frequency of hot weather, hail, high winds, extreme precipitation, drought and flooding. The number of insurance claims is likely to increase as a result. This in turn will increase pressure on premiums, possibly leading to abrupt price increases. Thus, climate change could eventually result in changes to insurers' risk profiles and, hence, their capital requirements and reinsurance programmes.

Transition risks

The value of investments in carbon-intensive sectors may decrease as a result of a large-scale energy transition. New climate policies (involving increasing government regulation and standardisation), technical developments or a shift in consumer preferences may affect businesses' market value or creditworthiness or market confidence in businesses when their activities have a negative impact on the climate. This means the risks associated with the transition to a carbon-neutral economy could lead to a write-down of loans to and investments in companies.

The DNB report *Waterproof?* An exploration of climate-related risks for the Dutch financial sector¹ discusses climate-related financial risks in greater depth and helps insurers to identify the climate-related risks that are relevant to them.

The impact of climate-related risks on the financial sector is the subject of growing international concern. For example, the Network for Greening the Financial System (NGFS) has published a report² acknowledging that climate-related risks are a source of financial risks, and the International Association of Insurance Supervisors (IAIS) – in collaboration with the Sustainable Insurance Forum (SIF) – has published an issues paper³ describing the potential impact of climate-related risks on the insurance sector.

The European Insurance and Occupational Pensions Authority (EIOPA) recently issued an opinion paper⁴ discussing the approach to climate-related risks in Solvency II. The European Commission will consider this opinion. The actual impact on current legislation and regulations is yet unclear.

Our report *Values at risk?*⁵ shows that other sustainability risks (e.g. loss of biodiversity) are also relevant to the financial sector. We encourage institutions to start considering these in their risk management.

¹ DNB report *Waterproof?* An exploration of climate-related risks for the Dutch financial sector: https://www.dnb.nl/en/binaries/Waterproof_tcm47-363851.pdf

² Information about the NGFS and link to the report *A call for action*: <https://www.dnb.nl/en/about-dnb/co-operation/network-greening-financial-system/index.jsp>

³ IAIS Issues Paper on Climate Change Risks to the Insurance Sector: <https://www.iaisweb.org/page/supervisory-material/issues-papers/file/76026/sif-iais-issues-paper-on-climate-changes-risk>

⁴ EIOPA Opinion on Sustainability within Solvency II: <https://eiopa.europa.eu/Pages/News/EIOPAissuesopiniononsustainabilitywithinSolvencyII.aspx>

⁵ DNB report: *Values at risk?* https://www.dnb.nl/en/binaries/Values%20at%20Risk%20-%20Sustainability%20Risks%20and%20Goals%20in%20the%20Dutch_tcm47-381617.pdf

Principles for integrating climate-related risks in the ORSA

Given the potential impact of climate-related risks, we expect insurers to analyse and describe the influence of these physical and transition risks on their risk profile, and if these risks are material, to set out a scenario for them in their ORSA.

We analysed the ORSAs submitted in 2018 to determine the extent to which Dutch insurers have integrated climate-related risks in their ORSAs. We used the outcome of this analysis to formulate a number of principles for integrating climate-related risks in the ORSA. These principles can provide guidance for setting out climate-related risks in an ORSA scenario. We note that institutions are devoting increasing attention to climate-related risks, and we envisage that knowledge and scenarios in this area will further develop in the future. The following principles offer sufficient scope for this. We recommend that institutions incorporate these principles into their ORSA.

1. Cross-sectoral

Both physical risks and transition risks may materialise on the asset side of an insurer's balance sheet, regardless of the nature of the institution's activities. We recommend that insurers consider the impact of both types of risk on the asset side of their balance sheet. The following principles apply to all types of insurers:

- The insurer considers the impact of physical risks and transition risks on the asset side of its balance sheet.

Physical risks

While the 2018 ORSA submissions contained only few practical examples of physical risks in the scenarios, the following situations could be considered:

1. Damage to collateral, such as real estate, investments or exposure to other real estate investments
2. Write-down of bonds and equities of companies whose property or processes are exposed to physical effects of climate change

Transition risks

We found the following practical examples of scenarios integrating transition risks in the 2018 ORSA submissions:

1. Write-down of loans to and investments in companies with large carbon footprints that are sensitive to an energy transition (stranded assets).
2. Write-down of mortgage loans and investments in non-sustainable real estate.
3. Increasing risks for mortgage loans, bonds and businesses that are vulnerable to an energy transition, which means higher capital buffers are required for such assets.

These scenarios take the transition risk of government intervention into account. A practical example of this is the introduction of a carbon tax. As a result the business model of companies that emit excessive amounts of CO₂ will come under pressure. The DNB energy transition stress test⁶, which analyses the financial impact of four disruptive energy transition scenarios, offers tools for further elaboration of transition scenarios.

⁶ https://www.google.nl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwiogOHliqnmAhWKaVAKHZqcDNcQFjAAegQIBBAC&url=https%3A%2F%2Fwww.dnb.nl%2Fbinaries%2FOS_Transition%2520risk%2520stress%2520test%2520versie_web_tcm46-379397.pdf&usq=AOvVaw3mVUfdZikB5gdl58oXW7KL

2. Sector-specific

The impact of climate-related risks on the liabilities side of the balance sheet strongly depends on the types of products that an insurer offers. Thus, the principles listed below are broken down by sector and should be applied in addition to the cross-sectoral principles as set out in the previous section.

2.1 Non-life insurers

Our analysis of the 2018 ORSA submissions shows that non-life insurers apply different principles for integrating climate-related risks in their ORSAs.

For example, they use different stress tests:

- EIOPA Insurance Stress Test 2018
- DNB's 2017 Non-Life Stress Test

Some non-life insurers use their own, company-specific scenarios. From these observations, we have deduced the following principles, and together, these can be considered good practices:

1. The insurer uses the principles of relevant stress tests as a basis for the assumptions in the climate-related ORSA scenario. Examples include:
 - a. The principles of the EIOPA 2018 stress test, in which EIOPA prescribes country-specific scenarios.
 - This includes one single scenario for the Netherlands: an extreme winter season with four severe storms in north-west Europe.
 Please refer to the "Insurance Stress Test 2018 Technical Specifications"⁷ for the technical specifications of this scenario.

- b. The principles of DNB's 2017 Non-Life Stress Test, which consists of the following scenarios for establishing the effectiveness of an insurer's reinsurance programme:
 - One very severe storm in a single year
 - Three severe storms in a single year
 - Extreme weather with heavy local damage
 Please refer to Chapter 2 of DNB's 2017 Non-Life Stress Test underlying assumptions for these scenarios.

- c. The principles of the PRA Stress Test 2019, which includes three scenarios with varying physical and transition risks:

- An abrupt and chaotic transition to a carbon-neutral economy with a high transition risk and a rise in temperature below 2 degrees.
- A gradual and orderly transition to a carbon-neutral economy with a lower transition risk and a rise in temperature below 2 degrees.
- No reduction of carbon emissions and, therefore, no transition risk, but with a rise in temperature of 4 degrees.

The PRA stipulates that UK insurers must map out the consequences of these three scenarios. The PRA also prescribes the method for shocking the frequency and severity of damage for natural disaster risks in the various scenarios.

Please refer to Chapter 7 ("Climate Change Scenarios") of the PRA's General Insurance Stress Test 2019⁸ for the relevant technical specifications, guidelines and instructions of the scenarios.

⁷ EIOPA Insurance Stress Test: https://eiopa.europa.eu/Publications/Surveys/EIOPA-BOS-18-18g_Technical%20Specifications_v20180622.pdf

⁸ PRA Stress Test 2019: <https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2019/life-insurance-stress-test-2019-scenario-specification-guidelines-and-instructions.pdf>

2. Relevant aspects from the Royal Netherlands Meteorological Institute's (KNMI) climate scenarios are considered, for example, climate change in the event of temperature rises of e.g. 2, 3 or 4 degrees. Each of these temperature increases corresponds to an increase (to be determined by the insurer) in the likelihood of the following:
 - Longer periods of droughts. A possible scenario could involve a temperature rise of 2 and 3 degrees.
 - Extreme rainfall, with increased intensity of showers and a greater likelihood of hailstorms and summer storms.
 - Rising sea levels with an increased risk of flooding.
 - Shifts in wind and storm patterns.

3. The ORSA takes the potential health risks of climate change into account, such as the impact of a change in climate patterns. This is included in a limited number of ORSA 2018 submissions. Scenarios can be elaborated further to include, for example, heat stress and an increase in the prevalence of allergies and respiratory disorders. Changes in precipitation levels and temperature may also affect the seasonal variance or geographical spread of water-borne pathogens and infections.

2.2 Life insurers, prepaid funeral services insurers and health insurers

The DNB report "Waterproof? An exploration of climate-related risks for the Dutch financial sector." describes the potential consequences of climate change for these types of insurers. Examples include an increased likelihood of heat waves or other natural disasters, resulting in casualties. In addition, climate change could lead to an increase in the number of claims.

The ORSA 2018 analysis reveals that the impact of climate-related risks for life insurers, prepaid funeral services insurers and health insurers is relatively difficult to establish. In the ORSA scenarios, these groups of insurers mainly focused on identifying the indirect effects of climate-related risks, such as changes in life expectancy. We consider the following three principles to be good practices for these insurers:

1. An insurer takes the indirect effects of climate-related risks into account in its impact analyses.
2. The scenarios take into account a significant increase in mortality rate assumptions. This was one of the practical examples that emerged from the ORSA 2018 submissions.

Q&A

Q – Does DNB expect Dutch insurers to take climate-related risks into account?

A – Yes:

Article 262 of the Commission Delegated Solvency II Regulation (EU) 2015/35 stipulates that an insurer's Own Risk and Solvency Assessment (ORSA) must be forward-looking and include: *The risks the undertaking is or could be exposed to, taking into account potential future changes in its risk profile due to the undertaking's business strategy or the economic and financial environment, including operational risks.*

Guideline 5 of the framework also states that 'The undertaking should evidence and document each ORSA and its outcome'. Given the potential impact on the asset side of their balance sheets as well as on their technical provisions, we expect insurers to integrate climate-related risks into their Own Risk and Solvency Assessments (ORSA) by analysing and describing the influence of these risks on their risk profile. We expect the ORSA report to present and explain the outcomes of this analysis. If climate-related risks are not regarded as material, for instance, because the insurer is not or could not be exposed to them, then we expect this to be included in the explanation.

Climate-related risks for the insurance sector can be divided into **physical risks** and **risks** ensuing from the **transition** to a climate-neutral economy. Both risks may materialise as financial risks and, hence, have an impact on insurers. In **cross-sectoral** terms, both physical and transition risks may materialise on the asset side of an insurer's balance sheet, regardless of the nature of the institution's activities.

- Exposures are vulnerable to the physical consequences of a changing climate. Examples could include damage to collateral, such as real estate, investments or

exposure to other real estate investments or the write-off of companies whose property or processes are exposed to physical consequences of climate change (**physical risk**).

- New climate policies (involving increasing government regulation and standardisation), technical developments or a shift in consumer preferences may affect businesses' market value or creditworthiness or market confidence in businesses when their activities have a negative impact on the climate. This means the risks associated with the transition to a carbon-neutral economy could lead to a write-down of loans to and investments in companies.

The impact of climate-related risks on the liabilities side of the balance sheet strongly depends on the types of products that an insurer offers. **Non-life insurers**, in particular, may have to deal with the consequences of climate-related risks in the form of e.g. a rise in the number of claims, as a result of climate change and weather pattern shifts such as extreme rainfall and flooding (physical risk).

Life insurers, prepaid funeral services insurers and health insurers may have to deal with shifts in claims patterns as a result of climate change, for example, an increase in (lesser-known) tropical diseases in Europe and an increase in the likelihood of heat waves or other natural disasters resulting in casualties. This has an impact on insurers' liabilities.

We have set out these risks in detail in our report [Waterproof? An exploration of climate-related risks for the Dutch financial sector](#). If the risks are material, we expect the institution to set out a relevant scenario for them in the ORSA. This applies to both physical risks and transition risks.

This Good Practice, *principles for integrating climate-related risks* in the ORSA, which DNB published as part of this document, provides further guidance.

In 2018, the European Commission requested the European Insurance and Occupational Pensions Authority EIOPA to investigate how sustainability could be integrated into the Solvency II framework. EIOPA recently published its opinion⁹ on this topic and emphasised among other aspects the importance of climate scenario analyses, indicating that this could be addressed in the ORSA. The European Commission will consider this opinion. The actual impact on current legislation and regulations is yet unclear.

⁹ EIOPA Opinion on Sustainability within Solvency II: <https://eiopa.europa.eu/Pages/News/EIOPAissuesopiniononsustainabilitywithinSolvencyII.aspx>