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Subject: Standardized Climate Scenario Exercise (SCSE)

The Canadian Institute of Actuaries (CIA) would like to acknowledge and commend OSFI's initiative to strengthen the financial resiliency of federally regulated financial institutions (FRFIs) against climate-related risks. We thank you for giving stakeholders this opportunity to provide feedback on the "Standardized Climate Scenario Exercise – draft for consultation" (SCSE Draft), and we hope the feedback that you receive proves productive in finalizing the SCSE methodology.

The comments offered in this document represent the collective feedback received from various committees within the CIA, representing a diverse group of actuaries who practice in life and health insurance, as well as property and casualty (P&C) insurance and pensions.

1) Executive summary

The following summarizes the key findings and suggestions of the CIA with regards to the SCSE Draft.

- The SCSE, while well-suited for deposit-taking institutions, has a more limited coverage for insurers.
- The proposed timeline of the SCSE, in which there appears to be as little as a three-month window between the release of the final instructions and the exercise submission deadline, is likely to be unattainable for most FRFIs.
- The prescriptive approach to achieve standardization may conflict with the aim to build capacity for FRFIs to assess their climate-related exposures and quantify their risks.
- The balance sheet assumptions such as being static while also in run-off, and being assessed on a five-year interval, requires further clarification.
- There is inadequate assessment of the impact of physical risks on P&C insurers.
- The provision of a working example of the SCSE, or components of the SCSE, would resolve many of the points outlined in this response.

2) Intent, scope and operational approach

Key objectives

The SCSE Draft states the three key objectives of the SCSE as:

1. **Raise awareness:** Raise awareness and encourage a strategic orientation with FRFIs to better understand the potential exposures to climate change.
2. **Build capacity:** Encourage the building of FRFIs' capacity to assess the impact of climate-related catastrophic events and policies and to conduct climate scenario analysis exercises.
3. **Establish a standard:** Establish a standardized quantitative assessment of climate-related risks, both transitional and physical in nature.

The meaning of "strategic orientation" as referenced in objective 1 is not made clear; our interpretation is that a climate scenario exercise driven by individual FRFIs would allow each FRFI to better understand their individual exposures to climate change. Yet we believe this has not been fully realized by the SCSE Draft, largely in part due to the somewhat conflicting goal that arises between individual FRFI capacity building and standardized exercise for the entire industry.

To establish a standardized exercise across the industry, OSFI has elected to prescribe a number of the variables in the exercise. However, building capacity and developing the "foundational infrastructures necessary" for FRFIs to perform climate risk assessment would involve the FRFIs developing the means to be able to compute such variables internally. This development is not likely to occur as easily if the SCSE is largely requiring FRFIs to input company data using the prescribed instructions and shocks to get the output.

Therefore, while being prescriptive may be beneficial in working towards standardization, it may be counterproductive towards developing the ability of FRFIs to assess their own climate risks.

Moreover, a standardized exercise is not equipped to capture the nuances of the risks and exposures faced by individual FRFIs. It bears the risk of not being aligned with how insurers may be currently performing their own climate evaluations and producing results that may not be used by the FRFIs to any meaningful degree. Senior management may find difficulties using the results of the SCSE to guide their internal decisions if the scenarios pathways analyzed within are of little relevance to the FRFI.

However, we would acknowledge that many FRFIs do not currently have the capacity to assess their climate-related exposures internally.

As such, we recommend that firms be given the flexibility to either use the OSFI-prescribed methodologies or complete some aspects of the exercise using their own methods, on the condition that enough documentation and justification are provided. The former option would allow for the aforementioned FRFIs without capacity for climate assessment to still fulfil the exercise as a first step to building that capacity, while the latter option allows for FRFIs that do have the means to provide a more accurate and relevant portrayal of their climate-related exposures to do so.

Nevertheless, we suggest that OSFI should reinforce the expectation for FRFIs to conduct their own climate scenario exercise to properly assess each FRFI's individual exposure to climate risks.

Governance expectations
The SCSE Draft does not currently define governance of climate scenario exercise within FRFIs, which may leave FRFIs to assume that this is discretionary to each entity.

To ensure adequate oversight of the exercise within FRFIs, it would be helpful if OSFI provided its expectations regarding senior management involvement in the SCSE. We would expect similar senior management (and other cross-functional) involvement as is completed for other stress testing exercises such as financial condition testing or Guideline E-18 stress testing, given the nature of the analysis and the types of threats posed.

Scope of consolidation
In Section 2.3.1, the draft states that the SCSE may be completed on an unconsolidated basis or consolidated up to the financial sector level at the discretion of an institution. As we interpret it, an FRFI that operates in more than one financial sector may elect to provide a single submission at the aggregate level rather than provide a separate submission for each financial sector; we would like to confirm whether this is the correct interpretation.

3) Assessment of transition risk

We would like to propose the following series of clarifications on the assessment of transition risk.

Static balance sheet with run-off
We recommend that OSFI provide further explanation of the run-off noted in Section 3.1.2: "For each 5-year interval, FRFIs will perform forward-looking calculations that assume the balance sheet runs-off."

We have difficulty understanding, firstly, how a balance sheet can run-off while also being a static balance sheet.

Secondly, it is unclear whether the quote is implying that balance sheets at year end 2030, 2035, 2040 and so on are identical to year end 2023. If so, then we would request clarification of this approach, and suggest OSFI offers some reasoning behind this decision as to reset the evolution of all FRFIs every five years.

One suggestion is for OSFI to confirm whether a similar methodology as the Bank of Canada pilot study is used, in which there was no run-off of the balance sheet, no new business, no assets maturing and run-off liabilities, where each year inside the base scenario was static. While this is different from what is typically done for projection purposes, the simplification may be beneficial and does not take away from the exercise's key goal of measuring the assets exposed to transition risk.

Scenario narratives
We find that the SCSE Draft narratives can benefit from additional background. While it is evident that OSFI is sourcing from the Network for Greening the Financial System (NFGS) scenario pathways, it is not made explicit whether FRFIs are expected to take at face value the NGFS scenario or if OSFI is prescribing any changes to the NGFS scenario. We

recommend that OSFI provide a more detailed narrative such as the one on slide 9: Scenario narratives of "NGFS Scenarios for central banks and supervisors."

Industry sector classification
On the topic of industry sector classification, we suggest OSFI clarify, and provide guidance on, how "scope 3 emissions could be considered using a sectoral approach" in the context of the SCSE and taking into consideration the limitations of a sectoral approach. For instance, how should companies that operate in multiple industry sectors be categorized under the presented framework in Section 3.3.1?

We also hold concerns about the comparability of the North American Industry Classification System (NAICS) code assignments between companies as it is our interpretation that FRFIs are to classify their portfolio using NAICS at their own discretion. We recommend that OSFI provide a mapping between NAICS and Global Industry Classification Standard (GICS) codes, which some FRIFIs have more experience with. Alternatively, OSFI may consider providing guidance to its expectation of how FRFIs would classify their portfolio by NAICS. We would like to highlight that the identification of in-scope exposures and their mapping to the climate relevant sectors represent a significant undertaking, for which many FRFIs would not be accustomed to.

Real estate exposure assessment
We question the inclusion of mortgage insurance liabilities within the scope of the Climate Transition Real Estate Exposure Assessment outlined in Section 4. We believe that segmenting Canadian mortgage insurance liabilities by the indicated dimensions may be difficult; asset class, loan-to-value ratios (LTV), credit score and heating source data are generally not available for mortgage insurance policies.

We would also like to note that the real estate exposure assessment outlined in the SCSE Draft more closely resembles a disclosure exercise rather than a scenario analysis as OSFI will be requesting FRFIs to disclose their real estate exposures using the indicated metrics for each dimension in aggregate.

Additionally, the SCSE Draft states that "the scope of the module also includes Canadian mortgage insurance liabilities, other real estate related insurance products are not in scope." We believe OSFI should clarify whether P&C insurance on commercial or personal property and mortgage insurance liabilities are thus not included in the scope.

Formulas
We would like to note that formulas for PVi and climatePVi scenarios do not use a consistent naming convention for the variables "number of years remaining until maturity" (m or n) and "scenario number" (k or s).

4) Assessment of physical risk
While the exercise states as its third objective to assess climate related risks both transitional and physical, we are concerned that physical climate risks are not sufficiently reflected in the SCSE Draft. We would like to acknowledge the fact that the SCSE is based on the Bank of Canada pilot study and that it will evolve over time, but we would like to offer the following feedback for use in developing future iterations.

Insufficient coverage for P&C insurers

Firstly, we note the exclusion of physical risk for the market risk and credit risk modules of the scopes detailed in Section 2.2.2. We also note that real estate exposures have limited relevancy to property insurance as they typically do not collect the relevant information from policyholders.

Furthermore, the current list of physical hazards includes high temperature as a peril, yet high temperature does not directly translate to property losses; it is the underlying factor that induces many extreme weather events and is too broad of a category to include by itself. Ideally, we believe the list of perils should be limited to specific weather events, such as drought induced by high temperature rather than simply high temperature. The omission of air pollution from the list of physical hazards is also concerning; we recommend it to be incorporated in the definitive hazard list upon the official release of the SCSE.

These factors indicate to us that, while it may be appropriate for deposit-taking institutions as well as the investment portfolios of FRFIs, the current scope of the SCSE does not adequately capture climate risks from an insurance perspective, especially for P&C insurance.

Additionally, the SCSE Draft currently includes only exposure analysis for an FRFI's assessment of physical risks. This approach is limited in terms of yielding data with which FRFIs are able to conduct meaningful financial analysis. We suggest the inclusion of translating the physical risk exposure to financial losses, such as a function between flood depths to dollar amount losses, in order to capture the actual impacts of physical risks on the FRFI's balance sheet under the various scenarios.

We would also like clarification on how Total Insured Values as collected per OSFI's Climate-Related Risk Returns would relate to the exposures captured through the SCSE, and whether it could serve as a link to implement any damage functions that would translate physical risk exposure to financial losses.

It is our understanding that FRFIs are requested to determine the reduction in the financial yield impairment from physical exposure and hazard but should not consider impairment in credit ratings or market value multipliers. As it stands, the SCSE Draft seems to be relevant to the extent that there are material amounts of investments in such asset classes, (i.e. real estate); this points to the SCSE having more relevancy to life insurers but less so for P&C insurers, who only collect information on whether there is a mortgage on the insured location and thus are not privy to asset class disclosure. Adding on to this limitation is the fact that the dimensions of LTV buckets and credit quality may not be available for P&C insurers.

Physical risks for life & health insurers

While the physical risks of the investment portfolios are captured to a certain extent, similar to above, the SCSE Draft does not capture the impacts of climate related changes on future mortality and morbidity risks. We appreciate that statistically significant empirical evidence on insured lives does not yet exist as well as the challenges of using the past as a predictor of the future.

Tailoring future exercises by financial sector

We would also like to recommend that future iterations of the SCSE should be tailored by financial sector (i.e., deposit-taking institutions, life insurance companies, P&C insurance companies), in order to take into consideration the differences in the nature of the business and varied climate risk impacts.

Trade-off between physical and transition risks
The SCSE's emphasis on transition risks and the lack of focus on physical risks permeates the exercise, from the high-level scope modules presented in Section 2.2.2 (and the decision to not consider how physical risks are affected by different climate transition scenarios) to the more granular implementation of risk assessment, such as only conducting exposure analysis for physical risks.

As such, we find that the exercise does not consider in full the trade-offs between transition and physical risks and may lead to an unduly optimistic outlook in the insurance sector. If OFSI would elect to limit the coverage of physical risks in this first exercise in favour of a simpler analysis, it should be made clear whether they will be included in subsequent ones.

5) General recommendations

Alignment with global requirements
Overall, we would like to highlight the importance for OSFI to align its approach as much as possible with the global regulatory community with regards to climate-related disclosure requirements, especially since this exercise applies to all FRFIs including Canadian branches of foreign companies.

Timeline of the exercise
It is currently unclear whether OSFI intends to release the final instructions for the SCSE on the start of Q2 2024 or the start of Q3 2024, while it is clear that FRFIs are expected to submit the completed exercise at the 2024 year end.

We also note that this exercise accelerates the timelines relative to Guideline B-15 for non-Internationally Active Insurance Group insurers.

We strongly recommend that OSFI allows for at least six months between the release of the final instructions and the exercise submission deadline. This will provide FRFIs enough time to properly carry out the exercise, thereby supporting the capacity building goal of the SCSE.

Provision of worked examples, supporting documentation and training to FRFIs
Industry knowledge and resource in performing climate-related scenario exercises at this level of granularity is low, and we recommend that OSFI provide methodology documentation for the derivation of the various risk parameters and climate-adjustment calculations outlined in the exercise.

We also recommend that OSFI share the clarifications requested in this response as well as provide a working example of the SCSE Draft, even a preliminary version, ahead of the second consultation or the final guidance. The working example can be in full or in parts with respect to the SCSE. We also suggest that OSFI consider providing training to ensure FRFIs can conduct the exercise correctly and consistently, especially pertaining to the use of geospatial data. A point of suggestion is to limit the scope of the SCSE to postal codes and expand in future iterations to involve longitude and latitude data.

These measures will allow FRFIs to examine the differences between the SCSE and their internal climate scenario exercise. Such measures will also help eliminate uncertainty and better ensure standardization.

Disclosure of limitations and simplifications

We recommend that OSFI make an explicit list of known limitations or acceptable simplifications, such as:

- No impact on provincial and municipal bonds.
- No impact on reinsurance ceded assets.
- FX and risk-free rates are unimpacted in any scenario.
- No change in IFRS 17 discount rate illiquidity premium.

Consideration of ripple effects

The SCSE Draft does not consider the various ripple effects of climate change on: reinsurance availability and affordability; market and credit risk shocks on insurance liabilities discounting yield curve; FRFI investment choices throughout climate change scenarios; and business interruption arising from supply chain issues and legal consequences.

We do acknowledge the fact that such ripple effects pose a great challenge to analyze, but their effects are liable to be of the larger and more immediate issues arising from climate change scenarios. If OSFI has chosen to omit these factors in the exercise in lieu of a more computationally simpler exercise, we believe OSFI should make mention of their omission and whether they will be taken into account in future iterations of the exercise.

Use of two scenario data sources

We also have concerns with respect to the use of two scenario data sources (or implementations) as a means for dealing with the uncertainty in climate scenario analysis. We believe the limited resources of FRFIs, particularly the smaller ones, would be better spent investigating physical scenarios and risks rather than repeating the same transition scenarios. Additionally, those in charge of FRFI governance may find it confusing to sign off on two different sets of results.

Clarification of terms

We would like to propose the clarification of the following items to enhance the reader's interpretation of the SCSE. Without a clear, explicit definition of the key terms and phrases, the exercise may lead FRFIs to have differing interpretations and apply the SCSE differently. This would reduce the SCSE's mandate of a standardized output from all participants.

- OSFI's definition of risk discrimination: We have interpreted this to mean the segmentation of risks to best address implications of respective areas.
- OSFI's definition of real estate: We have understood this to include the properties owned by the FRFI for its own use and for investment purposes, as well as the properties insured by the institution. The latter will allow for a more comprehensive view of the risks borne by FRFIs.
- The inclusion of both public and private fixed income for the recognition of credit risk: Though not specified, we have interpreted the exercise to include both types to avoid any gaps in treatment.
- The inclusion of accident and sickness risk increments from physical hazards in insurance liabilities listed in Section 5.6: There is room for interpretation that they should be included and considered, yet other parts of the SCSE Draft suggest otherwise.

- The definition of corporate debt for the treatment of market risk: We have interpreted this to mean both corporate bonds and loans.
- The definition of exposure assessment for financial risks: We have interpreted this to mean the quantification of exposures (units to be identified by the FRFI) for both physical and transition real estate (e.g., the number of properties).
- The definition of financial risk adjustment factors.
- Whether equity shocks will vary by climate scenario narrative, industry sector and geography, such as corporate credit spreads.
- Whether it would be possible for one given bond or real estate asset to be allocated amongst different sectors, geographies, etc., and if so, how this is to be done.
- Whether "property insurance liability" in Section 5.4.1 should instead refer to "property insurance exposure," as a liability is only generated once there is an actual claim.
- Whether equity shocks are to be applied to both common shares and preferred shares, including dividend yield shocks.
- Whether managed investments (equity or fixed income managed on behalf of clients, using client's capital) fall under the scope of exposures.

6) Concluding remarks

While there are clarifications required and certain omissions that we have identified with regards to physical risk coverage, we believe the exercise is, on a high level, a good first step for FRFIs to tackle the fundamentals of assessing climate-related risks. Particularly, we believe the exercise captures well the impact of transition risks and will help FRFIs to understand their physical risk exposures, provided that the clarifications suggested in this submission are made.

The CIA appreciates the opportunity to provide feedback on this draft and would welcome further discussion throughout the coming months.

If you have any questions, please contact Chris Fievoli, FCIA, Actuary, Communications and Public Affairs, at 613-236-8196 ext. 119 or chris.fievoli@cia-ica.ca.

Sincerely,

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