



Monetary Authority of Singapore

Response to Feedback Received

P011-2024 – October 2025

Proposed Capital Treatment for Structured Products and Infrastructure Investments for Insurers



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1. Preface

- 1.1. On 18 October 2024, the Monetary Authority of Singapore (MAS) issued a consultation paper on the proposed capital treatment for structured products and infrastructure investments for insurers, which seeks views on the introduction of a differentiated capital treatment for infrastructure investments, and to revise the capital treatment of structured products, including those which are infrastructure in nature.
- 1.2. The consultation period closed on 22 November 2024 with 34 respondents submitting feedback. MAS would like to thank all respondents for their contributions. This paper covers MAS' responses to the feedback received.
- 1.3. Some respondents had requested confidentiality of their identity and/or feedback and the names of these respondents have been omitted from the list of respondents at Annex A. With the exception of respondents who had requested confidentiality of their feedback, Annex B contains the feedback received from respondents during the consultation.
- 1.4. MAS has considered carefully the feedback received. Comments that are of wider interest, together with MAS' responses are set out in this paper.



2. Structured Products

Removal of the option to apply a 50% risk charge on the entire market value of the investment

- 2.1. MAS sought views on the proposal to remove the option to apply a 50% risk charge on the entire market value of the investment. Most respondents preferred that this option be retained, citing operational efficiency benefits due to ease of computation.

MAS' Response

- 2.2. While the option to risk charge at 50% was initially introduced to simplify the risk charge calculation, this option is no longer considered prudent, as certain structured products may carry higher risks warranting risk charges above 50%. Given the diverse nature and varying risk profiles of structured products, MAS expects insurers to thoroughly understand these products and their underlying components to accurately evaluate associated risks before investing. MAS will proceed with removing the option to apply a 50% risk charge to the entire market value of the investment.
- 2.3. Paragraph 4.3.8.1 of MAS Notice 133 allows insurers to adopt an alternative method to calculate the assets risk requirement if the method results in a risk charge that is no less than that determined in the manner prescribed, and to show documented evidence. Therefore, insurers may still apply a 50% risk charge to the entire market value of the investment if they can demonstrate compliance with this requirement.

Recognition of credit rating of securitised products

- 2.4. MAS sought views on the proposed recognition of the credit ratings assigned by recognised external credit assessment institutions (ECAIs) to the tranche of the securitised assets.
- 2.5. Several respondents suggested expanding the list of recognised ECAIs to include additional credit rating agencies such as Morningstar DBRS and Kroll Bond Rating Agency (KBRA). In addition, one respondent enquired whether MAS would permit insurers with sufficient expertise to utilise internal credit ratings for collateralised loan obligations (CLOs) that lack external ratings.



MAS' Response

- 2.6. The requirements for recognition of ECAIs can be found in Appendix 4I of MAS Notice 133. Relevant rating agencies that meet the requirements may apply for MAS' approval to become recognised ECAIs under this Notice. Such requirements include the ECAI having received a letter of support from an insurer, stating that it intends to use the external credit assessments of that ECAI for the purposes of calculating regulatory capital requirements under MAS Notice 133.
- 2.7. On the use of internal credit rating process (ICRP) for structured products (which would include CLOs), MAS will not be extending this approach to structured products for the following reasons. Firstly, such products are diverse and can be bespoke in nature. Insurers need to have a thorough understanding of the underlying asset pool, multiple tranches, cash flow structures and extent of leverage in the loan portfolios, all of which require more complex means of valuation. Secondly, unlike normal corporate debt securities, where insurers are able to easily back-test their derived ratings from ICRP against the credit ratings of externally rated debt securities¹, there is a much smaller sample of externally rated structured products for insurers to perform similar back-testing. Even for structured products that are externally rated, the insurers are also unlikely to have access to the underlying assets of those structured products to make a meaningful comparison.
- 2.8. In short, the complexity of valuation models, which can be further complicated by the limited market liquidity, and difficulties in back-testing may hinder insurers from effectively conducting and validating their internal credit assessments. Therefore, reliance on recognised ECAIs, which possess specialised expertise and dedicated resources, continues to be the more prudent approach.

¹ Under paragraph 5 c) of Appendix 4E on Criteria for Recognition of ICRP for Unrated Debt Securities under Proposed Approach 2 of MAS Notice 133, the insurer must ensure that the ICRP is consistent with external ratings by recognised ECAIs and must back-test samples of internal ratings for externally rated corporate debt securities.

Loading on specific market-related risk requirements for non-debt based securitised assets

- 2.9. MAS sought views on maintaining a 50% loading for rated debt-based securitised assets and for rated non-debt based securitised asset, a loading of 300% for investment grade (IG) securities and 500% loading for non-IG securities. A majority of respondents were of the view that the proposed 300% - 500% loading for non-debt based securitised assets was punitive. Several respondents expressed concern that this additional loading could result in risk charges exceeding 100% of the market value for structured products backed by equity securities. An example of how these respondents have interpreted and derived the risk charges is illustrated below.

Example 1

Assuming a structured product that is a non-debt based securitised asset, where the underlying assets are private equities and the securitisation tranche is rated IG by a recognised ECAI, the market-related risk requirement is derived by working through the following steps -

1. Treat the underlying assets as private equities and work out the base risk charge for private equities as 50% of market value
2. Apply the applicable loading to this underlying base risk charge (i.e. 300% for IG rated notes)
3. The calculation works out to be:

$$\begin{aligned} &\text{Base charge (50\%)} + (300\% \times 50\%) \\ &= 50\% + 150\% = \mathbf{200\% \text{ of market value}} \end{aligned}$$

Based on the above interpretation, respondents have noted that the final risk charge at 200% of market value would exceed the actual market value of the asset itself (i.e. 100%), hence raising concerns about requiring more capital for risk than the asset's worth.

MAS' Response

- 2.10. The capital treatment of structured products in the form of securitised assets was set out clearly in paragraphs 3.10 and 3.11 of the consultation paper. As stated, insurers should recognise the credit rating assigned by ECAIs to the specific tranche of the securitised asset, and apply the capital treatment in the same manner as a corporate debt securities, with the appropriate loading as detailed in Proposal 4 of the consultation paper. The loading to be applied would depend on the type of underlying securitised assets – 50% loading for rated debt-based securitised asset and for rated non-debt based securitised asset, a loading of 300% for IG securities and 500% for non-IG securities.

2.11. As several respondents have misinterpreted the application of the loading in the calculation for non-debt based securitised assets, to avoid doubt, we have illustrated the derivation of the risk charge below, using the same non-debt based securitised asset in Example 1. As the objective is to illustrate the correct application of the proposed loading, we will focus on the computation of the credit spread risk requirement (CSRR) alone in Example 2.

Example 2

Assuming the same structured product as illustrated in Example 1 (i.e. a non-debt based securitised asset, where the underlying assets are private equities and the securitisation tranche is rated IG by a recognised ECAI), the CSRR is derived by working through the following steps -

1. Treat the underlying assets like a normal corporate debt securities¹ and work out the base CSRR², taking the credit spread risk adjustment factor¹ of the outstanding tenor and credit rating assigned by recognised ECAI to the particular tranche of securitised asset.
2. Apply the applicable loading to this underlying base risk charge (i.e. 300% for IG rated notes)
3. The calculation works out to be:

$$\begin{aligned} &\text{Base CSRR of } 14.5\%^3 + (300\% \times 14.5\%) \\ &= 14.5\% + 43.5\% = \mathbf{58\% \text{ of Market Value}} \end{aligned}$$

Notes

¹ As set out in paragraph 4.3.3.3a) of MAS Notice 133

² Though the non-debt based securitised asset will also attract other market-related risk requirements like interest rate mismatch risk requirement and foreign exchange mismatch risk requirement (where relevant), we will only illustrate the computation of CSRR in Example 2.

³ We expect insurers to apply discounted cash flow approach for structured products. However, as the objective of this illustration is to show how loadings are to be applied, we have adopted a simplified approach of using modified duration, and also assumed that the note has no call feature. Hence assuming this tranche is a 15-year “A” rated corporate debt security with a modified duration of 10 years, the base CSRR works out to be modified duration (10) x credit spread risk adjustment factor(145bps) = 14.5%

As can be seen above, the risk charge would not be more than the actual market value of the asset itself.

In fact, at lower tenors, and better credit rating, the CSRR can be lower than what is illustrated above. For example, for a 15-year “AA” rated corporate debt security with a modified duration of 10 years, the resulting CSRR (with loading) will be 46% of Market Value. For a 10-year “A” rated corporate debt security with a modified duration of 5 years, the resulting CSRR (with loading) will be 33% of Market Value.



- 2.12. MAS notes that while the 300% - 500% loading for non-debt based securitised assets appear high relative to the loading of 50% for debt-based securitised assets, the proposed loadings are intended to introduce a more granular risk-based charging methodology that better captures the diverse nature and varying risk profiles across structured product types. A higher loading is necessary for non-debt based securitised assets compared to debt-based securitised assets due to their greater volatility and uncertainty, complexity in valuations, and variability in cash flows. As mentioned in the consultation paper, MAS also considered the risk requirement differentiation in the international Insurance Capital Standard's (ICS') risk charging approach for securitised assets in determining the loading required for non-debt based securitised assets². As shown in Example 2, non-debt based securitised assets with higher credit ratings or shorter tenors could potentially benefit from lower risk charges compared to current requirements.
- 2.13. In view of the above, MAS will proceed with the proposed loadings of 300% for IG and 500% for non-IG non-debt based securitised assets. Based on its industry engagements, MAS believes that the overall impact will be modest, since the global securitisation market is predominantly debt-based, which would be subject to a lower loading of 50%. MAS will continue to closely monitor for and collect granular and credible data on non-debt based securitised assets, as more such data becomes available in future, and stands ready to review the loadings in light of more data.
- 2.14. MAS would also make it clear in the revised MAS Notice 133 that the risk charge, including any additional loading, will not exceed 100% of the market value of the asset.

Proposal to treat other structured products as non-standard instruments

- 2.15. MAS sought views on subjecting structured products that are not externally rated debt-based and non-debt based securitised assets to the treatment of non-standard instruments as set out under paragraph 4.3.1.12 of MAS Notice 133. Such non-standard instruments include re-securitised assets, unrated securitised assets and any other types of structured products. Several respondents suggested that classifying certain structured products as non-standardised instruments can result in risk treatment that is disproportionate compared to other equity investments. One respondent sought clarification on the classification of repack vehicles³ and credit-linked notes as non-standardised instruments.

² MAS has also considered the BCBS' equivalent capital treatment for banks, and developments in capital treatment for structured products in other jurisdictions (e.g. Solvency II).

³ These are special purpose vehicles, trusts or entities that are set up to hold certain financial assets (or have interests in them) and then issue own notes or securities to investors.



MAS' Response

2.16. When reviewing the risk charging approach for structured products, MAS has focused on rated securitised assets, as these are more commonly held by insurers. More information was typically available for calibration purposes. For structured products that are not externally rated debt-based and non-debt based securitised assets (referred to as “non-standard structured products”), which would include repack vehicles and credit-linked notes, insurers are expected to consult MAS on the appropriate risk charge. MAS seeks to carefully study and assess the underlying characteristics, structure and risk profile of such products, which may carry higher risks and are typically more bespoke. MAS will determine the appropriate risk charge for these products on a case-by-case basis. Unless otherwise advised, such non-standard structured products would be subject to a risk charge of 100%. Over time, some of these non-standardised structured products may be reclassified, with their risk charging approaches clearly defined in MAS Notice 133.

3. Infrastructure Investments

Definition and Criteria

Definition of infrastructure assets

- 3.1. MAS sought views on the proposed definition of infrastructure assets, which are defined as physical structures, facilities, systems and networks that provide or support essential public services that bring economic and social benefits to society. Examples of such assets, not meant to be exhaustive, were provided across categories such as regulated assets, transportation assets, communication assets, social infrastructure assets and urban smart cities.
- 3.2. Most respondents agreed with the proposed definition. However, one respondent proposed to expand the definition of infrastructure assets to explicitly specify what they may include, while another respondent suggested that clearer definitions and safeguards should be considered for “Social infrastructure assets” and “Urban smart cities”. Several respondents highlighted that the nature and classification of “Regulated assets” may differ across markets and jurisdictions. For example, the same asset could potentially be regulated in one jurisdiction but unregulated in another. Some of these respondents thus suggested adopting a definition aligned with the ICS for infrastructure assets. ICS did not use the category of “Regulated assets” but instead has “Water Utilities”, “Waste management utilities”, and “Energy (including electricity and gas utilities)”. On the specific examples provided in the consultation paper, one respondent suggested reclassifying data centres as real estate rather than infrastructure, while another respondent sought clarification on whether electric buses qualify as “Transportation assets” and subsea cables as “Communication assets”. There was also feedback regarding the omission of natural value chain assets, such as “Oil & Gas” and “Metals & Mining”, as explicit categories. The respondent emphasised that many such projects remain crucial to meeting the energy and economic needs of their respective countries and communities.
- 3.3. Several respondents also sought clarification on the scope of infrastructure investments in the form of securitised assets, indirect investments and unlisted secondary funds.



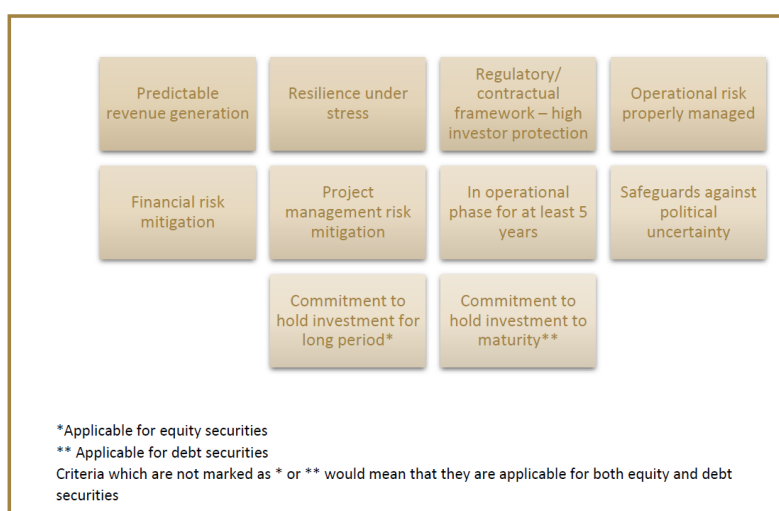
MAS' Response

- 3.4. Similar to the ICS, MAS has adopted a principles-based approach in defining infrastructure assets, as it is not feasible to enumerate all examples and details of investments that fall under infrastructure. To reiterate, the examples cited in paragraphs 4.4(a) and 4.4(b) of the consultation paper are not intended to be exhaustive.
- 3.5. Recognising that the classification of regulated assets may differ across jurisdictions, MAS will align with ICS by replacing “Regulated assets” with the categories “Water Utilities”, “Waste management utilities”, and “Energy (including electricity and gas utilities)” under the examples on what is considered as infrastructure. MAS has also made some other changes to the examples on definitions to better address the feedback and ensure closer alignment with ICS’ definitions.
- 3.6. On the suggestion to treat data centres as real estate, MAS will retain the classification of data centres as infrastructure assets, as the proposed classification is based on the nature of the asset risk. This is also consistent with ICS’ examples on infrastructure definitions. In addition, MAS has removed “Urban smart cities” as an example given that ICS does not have a distinct category for that in its examples, and there is a fair bit of overlap with other categories. Likewise, MAS has not included as explicit categories, “Oil & Gas” and “Metals & Mining” as ICS does not have distinct categories for these. It will be for the insurer to assess how and whether such assets meet the infrastructure definition of physical structures, facilities, systems and networks that provide or support essential public services. The updated examples on definition of infrastructure and infrastructure assets can be found in Annex C.
- 3.7. To clarify, both electric buses and subsea cables would fall under the definition of infrastructure assets. Based on the updated definition in Annex C, “Transportation assets” include rolling stock such as train or bus fleets (which can include electric buses) or other means of transportation if they are used to service public transportation. So electric buses would be considered as rolling stock. In addition, electric buses also require charging stations, which are also explicitly listed as examples within Annex C. “Digital assets (including Telecom)” would include core digital and telecom infrastructure, which subsea cables would be considered as one given its dominant role in global internet traffic. However, MAS would like to emphasise that though electric buses and subsea cables may satisfy the definition of infrastructure assets, insurers still need to ensure that the infrastructure investments meet the other relevant definitions and qualifying criteria to be eligible for the differentiated capital treatment.
- 3.8. MAS would also like to clarify that infrastructure investments that exist in the form of debt-based or non-debt based securitised assets will not be entitled to the differentiated capital treatment granted for the infrastructure asset class. For indirect investments and unlisted secondary funds, the differentiated

capital treatment for the infrastructure asset class is applicable to the extent that look-through to the underlying assets has been effectively carried out.

Qualifying criteria for infrastructure investments to be eligible for differentiated capital treatment

3.9. MAS sought views on the proposed qualifying criteria for infrastructure assets to be eligible for differentiated capital treatment. The following diagram summarises the key categories of criteria proposed by MAS -



3.10. A majority of respondents supported the proposed criteria. Some respondents provided suggestions which would be discussed in the rest of this subsection. Feedback on the criterion that only infrastructure projects that are in operational phase for at least 5 years would be eligible for differentiated capital treatment would be addressed under paragraphs 3.53 to 3.56.

3.11. There were two specific feedback on the following specific proposed criteria, which could be addressed by editorial changes –

- a) For the criteria on regulatory/ contractual framework, two respondents proposed the following edits in red, as there may not be a contracted purchaser if there is resilient demand supporting the project's revenue;

(a) *The infrastructure project is governed by a regulatory or contractual framework that provides equity investors with a high degree of protection, including the following:*

- (i) *Where the revenues of the infrastructure project are not funded by payments from a large number of users **nor subject to resilient demand**, the contractual framework includes provisions that effectively protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services, and require the contracted purchaser to be of good credit standing or replaceable without a significant loss to equity investors; and*
 - (ii) *The infrastructure project has sufficient reserve funds or other financial arrangements to cover its contingency funding and working capital requirements;*
- b) For the criterion on project management risk mitigation, a few respondents highlighted a contradiction between this criterion, where the requirement “to establish safeguards ensuring project completion according to agreed specifications” would imply that the project is in the construction phase, and another criterion stipulating that infrastructure projects must have been in operational phase for at least 5 years.

MAS' Response

3.12. Since there was general consensus on the proposals, which are largely aligned with ICS, MAS will proceed with the proposed criteria, incorporating the feedback mentioned above. Specifically, MAS will take in the suggested edits in paragraph 3.11.a). MAS will also remove the requirement “to establish safeguards ensuring project completion according to agreed specifications” under the project management risk mitigation criterion. The updated proposed criteria can be found in Annex C.

3.13. For infrastructure investments that do not meet all the qualifying criteria fully⁴, MAS is working with relevant stakeholders on a pilot program aimed at facilitating life insurers' investments into sustainable infrastructure projects, by providing a risk-appropriate level of capital charges, and necessary safeguards.

⁴ Besides the minimum period of operational phase, which would be discussed in a later subsection, another area could be the requirement for “the use of tested technology and design” under the criterion Project Management Risk Mitigation. One respondent has highlighted that such a requirement may limit innovation and investments in emerging technological areas like energy transition.

Additional guidance on assessing compliance with criteria

3.14. A majority of respondents who provided feedback sought additional guidance on how to assess compliance with the criteria, such as:

- a) Predictable revenue generation – MAS proposed that revenues generated by infrastructure assets are to be predictable, evidenced by, among other things, resilient demand. One respondent sought clarification on what is meant by resilient demand, to which another respondent suggested that evidence could include contracts which are consistently renewed over a historical sample period or a well-diversified pool of customers in the resilient industries associated with infrastructure assets;
- b) Resilience under stress – MAS proposed that the infrastructure project must meet its financial obligations under sustained stressed conditions that are relevant for the risk of the project. A number of respondents asked for additional guidance on the sustained stressed conditions that are relevant for the risk of the project, which can be subjective. The same respondents requested having more definitive stress levels (e.g. prescribed stress scenarios) and criteria for demonstrating financial resilience under a sustained stress scenario, and clarity on the amount of discretion by insurers and fund managers in selecting and applying stress factors to demonstrate resilience;
- c) Operational risk properly managed – MAS proposed that where operating risks are material, they are to be effectively managed. Several respondents sought clarification on how “effectively managed” should be assessed, and that additional guidance would be helpful. One of the respondents suggested that this could involve transferring operational risks through performance-based agreements with operators, while maintaining robust internal frameworks and documented processes. Another respondent sought clarity on the extent of reliance that could be placed on the insurers’ and/or fund managers’ risk management guidelines.

3.15. MAS also sought views on the need for insurers to develop risk management guidelines regarding qualifying infrastructure investments, as described in paragraph 4.25 of the consultation paper. These relate to the due diligence that insurers are expected to conduct in ensuring that the qualifying criteria are met before subjecting the infrastructure investments to the proposed differential capital treatment. Examples of such due diligence include but not limited to documented processes and assessments, independent validation process and regular stress testing. Respondents agreed that such guidelines were necessary and requested again for further guidance on assessing compliance with the qualifying criteria.

3.16. Respondents also sought clarification on what is considered independent validation required under MAS' expectation that insurers are to conduct necessary due diligence in ensuring that the qualifying criteria are met. Various interpretations of "independent" were suggested, ranging from internal teams (such as



the Risk function) for direct investments, to third-party assessments by audit firms, law firms, or fund managers, and external asset managers. Some proposed that insurers maintain oversight while relying on third-party due diligence.

MAS' Response

3.17. MAS acknowledges insurers' requests for further operational guidance on assessing compliance with the qualifying criteria. Infrastructure assets can be bespoke in nature, and the qualifying criteria will ensure that only comparatively lower-risk infrastructure investments are scoped in for the lower capital charge. The assessment of compliance with the criteria is thus similar to how insurers are expected to review the suitability of including an investment in their portfolio. Insurers have to meet all the qualifying criteria to be able to apply the differentiated risk charge for infrastructure investments. MAS will collaborate with the Life Insurance Association Singapore (LIA) in this regard. LIA is in the process of initiating engagement with its members and will involve fund managers where needed, on developing industry guidance on assessing compliance with the qualifying criteria. Such guidance should also address the points raised in paragraph 4.25 of the consultation paper.

3.18. MAS would also like to clarify what is considered independent validation. The validation should be conducted by a person who is deemed to be independent and possesses the required level of expertise. A reviewer is considered "independent" when he/she is structurally and functionally independent from the parties responsible for the investment decision and on-going management of the infrastructure assets. This may be a person from local or regional teams with the necessary expertise. A "qualified" reviewer includes, but is not limited to, a person who has experience in areas such as investment management. The review may be outsourced to an external party. In such cases, there should be qualified personnel, independent of the infrastructure investment management, to assess the quality of work done by the external party. The insurer is ultimately responsible for the outcome of the review.

Safeguards against political uncertainty

3.19. To mitigate the risk of political uncertainty on investment performance, MAS proposed that the infrastructure assets and entities must be situated in a country with a sovereign rating of at least "BBB-". If the proposed sovereign rating requirement is not met, insurers must have in place risk mitigants such as financial guarantee or insurance provided by insurance companies, export credit agencies, or multilateral financial institutions, or a combination.

3.20. A majority of respondents were supportive or do not have any substantive feedback on the proposal. However, some respondents highlighted the following :

- a) The criterion requiring infrastructure investments to be based in countries with at least a "BBB-" sovereign rating would limit investments in emerging markets, where the funding gap is most prevalent;
- b) One respondent highlighted that the proposed risk mitigants may not be readily available for countries below "BBB-" sovereign ratings, further limiting infrastructure investments in emerging markets;
- c) A few respondents suggested reducing the minimum sovereign rating to "BB" equivalent or removing it entirely;
- d) Some suggested an alternative approach, where higher-tiered risk charges would be imposed on infrastructure investments in countries with lower sovereign ratings.

MAS' Response

3.21. Political risk is a key risk for infrastructure investments, potentially affecting project viability and returns. The underlying risks include regulatory changes, expropriation of assets, government contract breaches, currency inconvertibility, alterations to subsidies, environmental policy shifts, corruption, trade barriers, and social unrest. These can lead to unexpected costs, disruptions or project failures, threatening long-term stability and profitability. Such risks have to be carefully managed and mitigated when assessing the suitability and capital requirements of infrastructure investments.

3.22. The criteria on imposing a minimum sovereign rating and mitigating measures aim to address these concerns. MAS will retain the criteria that infrastructure assets and entities must be situated in a country with a sovereign rating of at least IG. However, where infrastructure assets and entities are not situated in a country with a sovereign rating of at least IG, insurers are required to establish and maintain effective systems and controls to identify, assess and manage political risks in their infrastructure investments, taking into account factors such as geographical location, regulatory environment, and economic stability. These systems and controls may include, but are not limited to, making investments assessed to have appropriate financial guarantees or insurance in place for political risk.

3.23. MAS will hold the insurer's board and senior management accountable for ensuring these risk management processes and practices are in place and for making informed investment decisions within their investment framework and risk appetite.



3.24. Regarding the recommendation of having higher-tiered capital treatment for infrastructure investments in countries with lower sovereign ratings, given the level of discounts provided, a tiered approach would add unnecessary complexity to the framework. Therefore, MAS will maintain a single-tier differentiated risk treatment.

Commitment to hold investments for long period or to maturity

3.25. MAS has also sought comments on the proposed criterion for investment holding periods, i.e. for infrastructure equity investments, a long period, and for infrastructure debt investments, to maturity. This is because infrastructure assets, generally recognised for their long-term nature and stable cash flows, align well with the long-dated liability profile of life insurers. There was broad agreement with the criterion -

- a) For infrastructure equity holdings, the majority of respondents agreed with this criterion, with some suggesting that a five-year period would be sufficiently long. However, some respondents disagreed, arguing that the criteria limits insurers' risk management flexibility and may discourage investment;
- b) Regarding infrastructure debt securities holdings, the majority of respondents agreed with the criterion requiring commitment to hold the investment to maturity. Some respondents disagreed with the requirement for infrastructure investments to be held to maturity, deeming it unnecessarily restrictive. They emphasised the need for flexibility to sell investments to mitigate potential losses and manage risk exposure, particularly in cases of credit risk deterioration. Two respondents also commented that the investment horizon may be shorter for general insurers given the typical duration of their liabilities.

MAS' Response

3.26. As mentioned in the consultation paper, MAS recognises the crucial role insurers can play in providing long-term infrastructure financing. The RBC 2 refinement on having a differentiated capital treatment for infrastructure investments is to facilitate long-term infrastructure investments that align with effective asset liability management. It is hence important to have the requirement on holding to long term for infrastructure equity securities holdings and to maturity for infrastructure debt securities holdings. Noting the illiquid nature of infrastructure investments, insurers must demonstrate their ability to hold these assets, including during periods of stress.

- a) For infrastructure equity investments, the definition of time horizon may differ depending on the specific fund investment strategies. For example, investments in mature, low-risk assets within

developed markets typically require holding periods exceeding 7 years. In contrast, assets requiring significant development may have shorter holding periods of around 5 years. Given this variability, prescribing a minimum threshold for holding periods would not be practical. Instead, insurers are expected to assess, justify and document the appropriate holding period based on factors such as its investment strategies, the nature of the applicable infrastructure asset(s) (e.g. mature core assets), and market characteristics (e.g. developed or emerging). For example, for a mature core asset in a developed market, we would not expect the holding period to be shorter than 5 years;

- b) For infrastructure debt investments, insurers are to be committed to hold the investment till maturity, for better asset liability matching.

3.27. However, there are valid reasons for an insurer to exit infrastructure investments for risk management purposes. Examples of circumstances warranting such flexibility may include:

- a) Sovereign rating deterioration;
- b) Material changes in asset or project sponsor;
- c) Credit quality deterioration;
- d) Mitigating potential losses e.g. due to significant likelihood of the asset being downgraded over the next 3 months

Where such sales take place due to these reasons, insurers must ensure that the rationale for early exit is properly documented, including evidence of approval and the approving authority. This documentation should clearly demonstrate that the sale was undertaken for legitimate risk management purposes and in accordance with the insurer's investment framework.

Infrastructure corporate

3.28. In the consultation paper, MAS proposed differentiated capital treatment for infrastructure projects but not for infrastructure corporates, which are defined as entities or groups that derive the substantial majority of revenue from owning, financing, developing or operating infrastructure assets. The key reason was that infrastructure project entities are typically created for specific infrastructure projects, hence the use of the proceeds raised is directly linked to the underlying projects. On the other hand, the financing raised for an infrastructure corporate could be used to manage the daily operations of the company, and less directly attributable to any infrastructure project.

3.29. Feedback was received from respondents, advocating for the inclusion of infrastructure corporates in the proposed differentiated capital treatment. Key arguments raised included:

- a) The investment landscape for equity investments has evolved significantly from funding through infrastructure projects to investing via corporates who own, develop and operate multiple infrastructure projects;
- b) Lending to an infrastructure corporate offers enhanced risk mitigation through asset diversification, varied counterparties, geographical spread, and focus on operational assets, compared to the concentrated risks associated with single-project infrastructure investments;
- c) The consulted proposal, which does not accord differentiated risk charge to investments in infrastructure corporates, may be viewed as creating an unlevel playing field when compared to other regulatory regimes such as the ICS.

3.30. Some respondents also sought clarification on what is considered as substantial majority to qualify for infrastructure corporate definition.

MAS' Response

3.31. Taking into account the feedback received and MAS' findings from its engagements with fund managers regarding the current infrastructure investment landscape, MAS will extend the differentiated capital treatment applied to infrastructure projects to infrastructure corporates.

3.32. To provide clarity on the definition of infrastructure corporates, MAS will include guidance in MAS Notice 133 that a substantial majority is taken to mean at least a 75% level. This would include companies that invest exclusively or nearly exclusively in infrastructure projects across one or multiple sectors.

3.33. Similar to infrastructure projects, insurers can only enjoy differentiated capital treatment in investments in infrastructure corporates if the relevant definitions⁵ and qualifying criteria are met. The qualifying criteria for infrastructure corporates are largely the same as that for infrastructure projects, with some slight adjustments to take into account of the structural differences between the two investment types. The full qualifying criteria, which are generally aligned with ICS, are set out in Annex C, and we have also highlighted the specific criteria that differ between infrastructure projects and infrastructure corporates in Annex D.

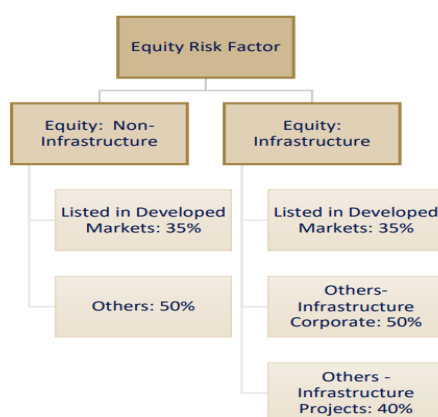
⁵ E.g. on the definitions of infrastructure, infrastructure assets, infrastructure projects and infrastructure corporates. These can be found in Annex C.

Proposed Capital Treatment

Risk charge factors and intra-asset diversification benefit for infrastructure equities

Equity risk charge factors

3.34. MAS sought views on the following differentiated capital treatment for equity investments in infrastructure projects, where the risk charge factor for equity investments in infrastructure projects, at 40%, is about 20% lower than the risk charge factor for the "Other equities" category. To qualify for the differentiated capital treatment, the equity investment in an infrastructure project must meet the relevant definitions⁶ and the proposed qualifying criteria.



3.35. As mentioned, feedback was received from respondents advocating for the inclusion of infrastructure corporates in the proposed differentiated capital treatment. Several respondents noted that the proposed risk charges for infrastructure equity investments are higher than those prescribed under the ICS and Solvency II frameworks, both for infrastructure projects and corporates.

3.36. In particular, some respondents have highlighted the absence of differentiation for infrastructure equity investments in developed markets⁷. These respondents pointed out that both ICS and Solvency II

⁶ E.g. on infrastructure, infrastructure assets, and infrastructure projects

⁷ For example, under MAS' consultation proposal, listed infrastructure equity investments in developed markets attract the same risk charge factor of 35% as listed non-infrastructure equity investments in developed markets; and unlisted

frameworks offer equity risk charges lower than 35% for such infrastructure equity investments in developed markets, which is not reflected in MAS' proposal.

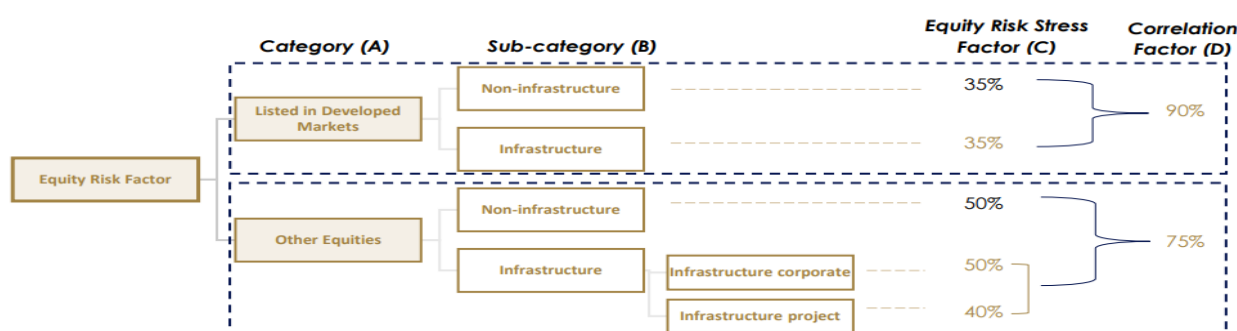
MAS' Response

3.37. As outlined in the earlier subsection on infrastructure corporates, MAS will extend its differentiated capital treatment for infrastructure investments in infrastructure projects to include infrastructure corporates. Consequently, qualifying infrastructure equity investments will now encompass equity investments in both infrastructure corporates and infrastructure projects.

3.38. The proposal set out in paragraph 3.34 was to maintain the differentiation between "Listed equities in developed markets" and "Other equities", to be consistent with the existing equity investment risk requirement differentiation under RBC 2. However, MAS will align the risk charge factor for unlisted infrastructure equities in developed markets with that of listed infrastructure equities in developed markets at 35%. This move reflects the typically stronger political and legal frameworks in developed markets. This will also bring closer alignment with the ICS.

Intra-asset diversification benefit

3.39. MAS also sought feedback on the proposal to introduce correlation factors for equity sub-asset classes to recognise diversification benefits between infrastructure equities and other equities. Specifically, MAS sought views on the 90% correlation factor between infrastructure equities and non-infrastructure equities for listed equities in developed markets, and a 75% correlation factor between infrastructure equities and non-infrastructure equities for other equities as shown in the diagram below:



infrastructure equity investments in developed markets attract the same risk charge factor (i.e. 40% for infrastructure projects and 50% infrastructure corporates) as infrastructure equity investments in emerging markets.

Proposed Capital Treatment for Structured Products and Infrastructure Investments for Insurers

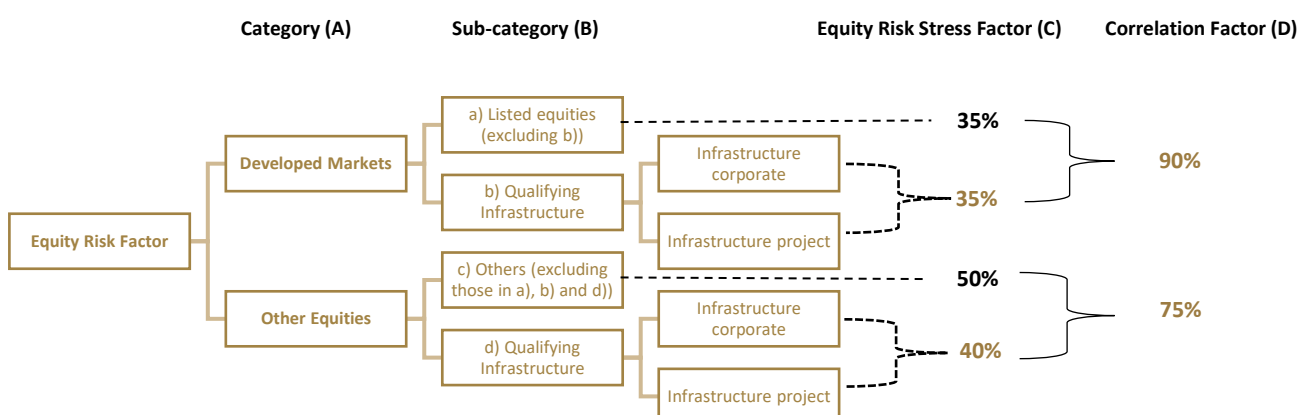
3.40. Whilst most respondents were supportive of the proposal, one respondent recommended allowing diversification benefits between infrastructure equities in developed markets and other equities, and proposed creating a separate category for unlisted infrastructure equities in developed markets instead of subsuming it under "Other equities". The same respondent suggested investigating the correlation factor between infrastructure and non-infrastructure equities specifically for unlisted infrastructure equities in developed markets, noting that market analysis and historical returns indicate lower volatility for unlisted infrastructure equities in developed markets compared to listed infrastructure equities. Additionally, a few respondents highlighted that for other equities, there is potential for a lower correlation factor than the proposed 75% between infrastructure equities and non-infrastructure equities.

MAS' Response

3.41. Given the intention to maintain alignment with the ICS, MAS will proceed to retain the proposed correlation factors of 90% and 75% for infrastructure equity investments. This approach ensures consistency with international standards and supports a more harmonised framework for assessing infrastructure equity investment risks across jurisdictions. Should more granular and credible data on diversification benefits become available in future, MAS will review the correlation factors accordingly.

3.42. The revised equity risk charges and correlation factors for equity investment risk requirements are summarised below:

a) Equity risk charge and correlation factors for equity investment risk requirement





b) Equity Investment Risk Requirement Computation

- i. To calculate the equity investment risk requirement, an insurer must calculate for each subcategory (B) within the equity category (A), the product of the corresponding equity risk stress factor (C) specified and the market value of each equity exposure in the sub-category; and
- ii. Within each equity category (A), calculate the equity risk charge as aggregation of the products calculated in sub-paragraph (i) of each equity sub-category of non-infrastructure and infrastructure equities using linear correlation factor (D), in the following manner:

$$C2_{equity\ category\ (A)} = \sqrt{\sum Corr_{i,j} \times Equity_i \times Equity_j}$$

where

$Corr_{i,j}$ = the correlation parameter for equity risk sub-categories i and j

$Equity_i, Equity_j$ = risk requirements for equity risk sub-categories i and j respectively

- iii. Calculate the equity investment risk requirement as the summation of the equity risk charge for all equity categories.

3.43. We illustrate the computation of equity investment risk requirement of the revised proposal using the same example in the consultation paper:

- a) An insurer plans to invest \$1,000 in equities with the following breakdown:
 - i. Equities listed on SGX = S\$300
 - ii. Listed infrastructure equities in S&P 500 (assessed to have met the infrastructure definitions and qualifying criteria) = S\$200
 - iii. Equities listed on Shanghai Stock Exchange (SSE) = S\$300
 - iv. Private infrastructure corporate equities in Brazil (assessed to have met the infrastructure definitions and qualifying criteria) = S\$100

v. Private infrastructure project⁸ equities in Indonesia (assessed to have met the infrastructure definitions and qualifying criteria) = S\$100

b) Using the example provided, the equity risk requirement (pre-diversified market related C2 requirements) is computed as follows:

Types of Equities	a) Listed Equity (excluding b)	b) Qualifying Infrastructure	Correlation factor (%)
Developed Markets (DM)			90%
[1] Amount invested	300	200	
[2] Risk Charge	35%	35%	
[3] Calculated Risk Charge = [1] x [2]	105	70	
[4] Equity Risk Charge for DM	170.7 $= (105^2 + 70^2 + 2 \times 0.9 \times 105 \times 70)^{0.5}$		
Types of Equities	c) Others (excluding a, b, d)	d) Qualifying Infrastructure	Correlation factor (%)
Other Equities (Others)			75%
[1] Amount invested	300	100 + 100	
[2] Risk Charge	50%	40%	
[3] Calculated Risk Charge = [1] x [2]	150	80 = (200 x 40%)	
[4] Equity Risk Charge for Others	216.6 $= (150^2 + 80^2 + 2 \times 0.75 \times 150 \times 80)^{0.5}$		
Total Equity Risk Requirement	387.3 $= (170.7 + 216.6)$		

Credit spread risk adjustment factors for infrastructure debt securities

3.44. MAS sought comments on the proposed credit spread risk adjustment factors (used for calculating credit spread risk requirement) for unrated infrastructure debt investments in infrastructure projects that have been in operational phase for at least five years. These proposed factors are, on average, 20% lower than the factors currently prescribed for unrated debt securities under RBC 2. Under RBC 2, the credit spread risk adjustment factor is the average between the similar factors for credit quality class D (i.e. “BBB”) and

⁸ In the previous example under paragraph 4.35 of the consultation paper, there was a typographical error where this was shown as “Private infrastructure corporate equities in Indonesia”, instead of “Private infrastructure project equities in Indonesia”. This error was noted by some of the respondents in the feedback to the consultation.

credit quality class E (i.e. “BB”)⁹. The table below sets out the proposed credit spread risk adjustment factors.

Term	Unrated debt securities (As per MAS Notice 133)	Unrated infrastructure debt securities ¹⁰
Up to 5 years	325bps	260bps
Between 5 to 10 years	298bps	239bps
More than 10 years	285bps	228bps

3.45. MAS has received feedback regarding the proposed treatment of infrastructure debt securities, which would be discussed in the rest of this subsection.

Inclusion of infrastructure corporates and rated infrastructure debt securities

3.46. As mentioned previously in the subsection on infrastructure corporates, feedback was received from respondents advocating for the inclusion of infrastructure corporates in the proposed differentiated capital treatment.

3.47. Eight respondents contended against there being insufficient data to justify differentiated calibration for investment grade infrastructure debt securities. While acknowledging that default rates may be similar between infrastructure and corporate debt securities, respondents emphasise that infrastructure debt securities, particularly those of investment grade, demonstrated significantly higher recovery rates. This resulted in lower overall credit loss rates for infrastructure debt securities compared to corporate debt securities. Additionally, historical data indicated lower rating volatility for infrastructure securities, especially during economic downturns.

3.48. Seven respondents highlighted that other regulatory regimes, such as Solvency II, provide more favorable treatment for infrastructure debt securities. This includes reduced credit spread charges for rated infrastructure debt securities and alternative approaches for assessing unrated infrastructure debt securities, such as internal credit assessments and qualifying criteria for infrastructure projects. In light of these international practices, respondents recommended implementing differentiated and lower

⁹ As set out in paragraph 4.3.3.3f) of MAS Notice 133.

¹⁰ For clarity, such unrated debt investments in infrastructure projects must meet the relevant definitions (e.g. on infrastructure, infrastructure assets, and infrastructure projects) and the proposed qualifying criteria, which includes that the infrastructure project must be in operational phase for at least 5 years.



capital requirements for both rated and unrated infrastructure debt securities, taking into account not just default rates but also recovery rates and overall credit loss rates.

MAS' Response

- 3.49. As outlined in the subsection on infrastructure corporates, MAS will extend its differentiated capital treatment for unrated debt investments in infrastructure projects to include infrastructure corporates. Consequently, qualifying infrastructure debt investments will now encompass unrated debt investments in both infrastructure corporates and infrastructure projects.
- 3.50. Similar to infrastructure projects, the differentiated capital treatment in investments in infrastructure corporates applies only if the relevant definitions¹¹ and qualifying criteria are met. The qualifying criteria for infrastructure corporates are largely the same as that for infrastructure projects, with some slight adjustments to take into account structural differences between the two investment types. The full qualifying criteria, which are generally aligned with ICS, are set out in Annex C, and we have also highlighted the specific criteria that differ between infrastructure projects and infrastructure corporates in Annex D.
- 3.51. MAS noted the feedback concerning the treatment of infrastructure debt securities, particularly the suggestion to consider recovery rates alongside default rates when calibrating capital requirements. While MAS recognises the existence of studies indicating higher recovery rates for infrastructure debt securities, there remain concerns on the broad applicability and stability of this data across different economic cycles and jurisdictions. The credibility and consistency of recovery rate data over time and across various infrastructure sectors remain areas for improvement. MAS' primary objective is to ensure the safety and soundness of insurers, and focusing on default rates is more prudent.
- 3.52. As such, MAS will maintain its approach of focusing on default rates alone and not introducing any differentiated capital treatment for rated infrastructure debt securities. This approach also ensures consistency with the ICS, which does not explicitly factor in recovery rates for credit risk. Furthermore, the asset risk charges such as credit spread risk charges and counterparty risk charges under the current RBC 2 framework are also calibrated based on default rates and consistently applied across all asset classes. Introducing recovery rates solely for infrastructure debt securities would create inconsistencies. MAS will continue to monitor developments in this area, including the evolution of international standards and the quality of available data on recovery rates. We remain open to future reconsideration

¹¹ E.g. on the definitions of infrastructure, infrastructure assets, infrastructure projects and infrastructure corporates. These can be found in Annex C.

of this approach as more robust and consistent data becomes available and if international standards evolve to incorporate recovery rates more explicitly.

Minimum period of operational phase

3.53. A number of respondents suggested removing the minimum 5 years operational phase period. They noted that most infrastructure debt securities are raised to finance construction or to refinance a project soon after construction is completed. Hence this threshold may exclude a significant number of infrastructure projects and potentially slow down investment in new capacity. Besides, such a requirement was absent in ICS or Solvency II for infrastructure debt securities. Conversely, some respondents supported having this minimum period in place to mitigate the risks associated with infrastructure assets in their early operational stages. However, some of these respondents suggested reducing the minimum period from 5 years to 3 years as the current minimum period may be too restrictive, particularly so with the emergence of new infrastructure assets within the energy transition sector.

MAS' Response

3.54. The implied credit rating for Moody's unrated project finance data is somewhere between "BBB" and "BB". Under current RBC 2, insurers can already take the average of "BBB" and "BB" ratings for unrated debt securities (without the need for this to be infrastructure debt securities). However, MAS was open to accord a lower risk charge if the unrated infrastructure debt securities meets a minimum operational phase period. Hence MAS consulted on the proposed differentiated capital treatment described in paragraph 3.44, with the minimum operational phase period as 5 years. In contrast, there was no need for any minimum operational phase period under ICS, as the treatment for normal unrated debt securities is the average of "BB" and "B", and unrated infrastructure debt securities are accorded a 25% discount, bringing it between "BBB" and "BB".

3.55. MAS will reduce the minimum period for unrated infrastructure debt investments¹² from 5 years to 3 years, given the availability of supporting data. For infrastructure investments that do not meet all the qualifying criteria (of which the minimum period of operation phase is one) fully, MAS is working with relevant stakeholders on a pilot program aimed at facilitating life insurers' investments into sustainable infrastructure projects, by providing a risk-appropriate level of capital charges, and necessary safeguards.

¹² For infrastructure equity investments, the minimum 5-year operational phase period will remain.

3.56. MAS will proceed with the following differentiated capital treatment for unrated infrastructure debt securities -

Term	Unrated debt securities (As per MAS Notice 133)	Unrated infrastructure debt securities ¹³
Up to 5 years	325bps	260bps
Between 5 to 10 years	298bps	239bps
More than 10 years	285bps	228bps

Intra-asset diversification benefit

3.57. MAS also sought comments on the proposal not to allow for any diversification benefit between infrastructure debt securities and other debt securities, given the lack of evidence supporting such diversification benefits. The majority of respondents were supportive of the proposals. A few respondents expressed concerns, highlighting that infrastructure debt securities provides significant diversification benefits due to the essential nature of infrastructure assets, different recovery characteristics, and stable performance across economic cycles. They cited research showing a low, and in some cases even negative, correlation between infrastructure debt securities and corporate credit. Moreover, they highlighted that infrastructure debt securities' unique risk profile, characterised by lower volatility and long-term cash flows, warrants more favourable treatment compared to non-infrastructure debt securities.

MAS' Response

3.58. MAS noted the arguments presented by these respondents regarding the potential diversification benefits and unique characteristics of infrastructure debt securities. However, ICS also does not recognise any diversification benefits between infrastructure debt and non-infrastructure debt securities. The research and studies cited were also not sufficiently representative. As such, MAS will proceed with the proposal to not introduce any correlation factors between infrastructure debt and

¹³ For clarity, such unrated debt investments in infrastructure projects must meet the relevant definitions (e.g. on infrastructure, infrastructure assets, infrastructure projects and infrastructure corporates) and qualifying criteria (which includes that the infrastructure project must be in operational phase for at least 3 years), as set out in Annex C.



other debt securities. This approach aligns with international practices and simplifies the capital computations. MAS will, however, continue to monitor developments and data in this area.

Expanding the list of recognised ECAIs

3.59. Three respondents suggested expanding the list of recognised ECAIs to include additional rating agencies active in the infrastructure space, such as Krolls and DBRS. This expansion would provide more flexibility in the assessment of infrastructure debt securities.

MAS' Response

3.60. Similar to the response provided in paragraph 2.6, interested parties can refer to Appendix 4I on Recognition of External Credit Assessment Institution of MAS Notice 133 for further engagement with MAS.

Inclusion within Matching Adjustment portfolios

3.61. Given the proposed credit spread risk adjustment factor's similarity to BBB-rated debt securities, respondents suggested allowing unrated infrastructure debts to be considered equivalent to IG corporate debt securities for the purpose of meeting the criteria for eligible assets¹⁴ in matching adjustment (MA) portfolios. This would encourage investment in infrastructure debt securities while maintaining prudent risk management practices.

MAS' Response

3.62. MAS would like to clarify that the MA framework, as detailed in Appendix 3D of MAS Notice 133, has its specific purpose and criteria. For insurers with more predictable future liability cash flows, the debt securities used to back these liabilities are more likely to be held to maturity and therefore should not be affected by short-term market volatility. Nevertheless, insurers that hold debt securities to maturity are still exposed to the risk of default and downgrade of the debt securities. The MA effectively allows policy liabilities to mirror closely the market changes in the value of debt securities that are not related to defaults or downgrades.

¹⁴ The criteria for eligible assets can be found in Appendix 3D Conditions to be met by the matching adjustment portfolio in MAS Notice 133.



- 3.63. It follows that as part of the conditions of approving MA, the eligible assets must be of good quality, including being of IG. This will ensure that the assets held can appropriately match the long-term liabilities. Insurers are expected to assess the assets individually against the MA criteria specified in Appendix 3D to determine their eligibility for inclusion in MA portfolios.
- 3.64. SGD and USD corporate debt securities (including debt-based and non debt-based securitised assets) can qualify as eligible assets if they are externally rated by recognised ECAs as IG. If such assets are not rated by recognised ECAs, MAS can recognise an equivalent IG rating where the insurer has an internal rating model or process (ICRP) which can meet the criteria set out in Appendix 4D of MAS Notice 133. As covered in paragraphs 2.4 to 2.8 (on recognition of ICRP for structured products) and paragraphs 3.65 to 3.70 (on recognition of ICRP for unrated infrastructure debt securities), MAS will not recognise the use of ICRP on debt-based and non debt-based securitised assets and unrated infrastructure debt securities. Hence these would not qualify as eligible assets under MA.

ICRP for unrated infrastructure debt securities

- 3.65. MAS sought comments on not extending the use of ICRP¹⁵ for unrated infrastructure debt securities. Whilst respondents were generally supportive, several respondents disagreed for various reasons.
- 3.66. Six respondents cited the prevalence of unrated securities in this sector and the potential to leverage on existing credit analysis skills, whilst four respondents suggest using asset managers' internal ratings systems, external credit risk scorecards, or established frameworks from credit rating agencies to rate infrastructure debt securities.
- 3.67. A few respondents proposed that MAS consider reviewing and approving internal rating methodologies of infrastructure asset managers or consult with industry practitioners to understand emerging standards in unlisted and unrated infrastructure credit risk. Although the resource-intensive nature of developing ICRP in-house was acknowledged, two respondents suggested that this could encourage insurers to develop expertise, and a proportionate approach to implementation could be considered.

MAS' Response

¹⁵ As set out in paragraph 8 of Appendix 4D on Approaches for Recognising Insurer's Internal Credit Rating Model and Process for Unrated Corporate Debt Securities of MAS Notice 133



3.68. After thoroughly considering the feedback received, MAS has decided to proceed with the proposal to not extend the use of ICRP for unrated infrastructure debt securities for the following reasons.

3.69. Firstly, it can be inherently difficult to accurately evaluate the credit quality of infrastructure debt securities, even for experienced professionals, due to the bespoke nature of infrastructure assets and the differences across sectors. Secondly, similar to the point raised in paragraph 2.7, the lack of sufficient samples of externally rated infrastructure debt securities for insurers to conduct back-testing¹⁶ as required under MAS Notice 133, presents a significant obstacle in regulatory compliance and in demonstrating the overall robustness and reliability of the ICRP for infrastructure debt securities assessment.

3.70. In addition, MAS would like to clarify that MAS will not approve the ICRP by asset managers. A key concern is the potential conflict of interest that may arise as asset managers might face incentives to provide overly optimistic ratings to attract investors, which could compromise the integrity and objectivity of the rating process.

Look-through approach for infrastructure investment via Collective Investment Schemes (CIS)

Application of look-through approach

3.71. An insurer can choose not to adopt the look-through approach and apply a 50% risk charge to the market value of the CIS. Should the insurer choose to adopt a look-through approach, MAS sought comments on the proposal to allow the look-through approach for infrastructure investment via CIS (referred to as “infrastructure funds”) in the following manner -

- a) If the underlying assets meet the proposed infrastructure definition and qualifying criteria, the insurer can apply the relevant risk requirement on infrastructure equities and infrastructure debt securities;
- b) If the underlying assets do not meet the proposed infrastructure definition and qualifying criteria, the insurer must then subject each of these underlying assets to the relevant C2 asset risk requirement calculations.

¹⁶ Under paragraph 5 c) of Appendix 4E on Criteria for Recognition of ICRP for Unrated Debt Securities under Proposed Approach 2 of MAS Notice 133, the insurer must ensure that the ICRP is consistent with external ratings by recognised ECAs and must back-test samples of internal ratings for externally rated corporate debt securities.

3.72. Example 3 illustrates how the look-through approach is applied to an infrastructure equity fund.

Example 3

Let us take an example of an infrastructure equity fund that made equity investments in 10 underlying infrastructure projects, all in emerging markets.

- Assume all of the underlying equity investments in infrastructure projects meet the finalised definition of infrastructure assets and infrastructure projects as set out in Annex C.
- Only 7 of the underlying equity investments in infrastructure projects are assessed to have met the finalised qualifying infrastructure criteria in Annex C.
- The remaining 3 underlying equity investments in infrastructure projects do not meet the qualifying infrastructure criteria.

Applying the look-through approach mentioned in paragraph 3.71, the risk charge works out to be:

$(7/10 \times 40\%^1 + 3/10 \times 50\%^2)$ of Market Value

= (28% + 15%) of Market Value

= 43% of Market Value

Notes

¹ 7 of the underlying equity investments in infrastructure projects are assessed to have met the qualifying infrastructure criteria, hence eligible for the lower risk charge of 40% for infrastructure equity investments in emerging markets.

² 3 of the underlying equity investments in infrastructure projects do not meet the qualifying infrastructure criteria, hence not eligible for the lower risk charge of 40%. Instead, the usual 50% risk charge would apply for equity investments in "Other Equities" under RBC 2.

If all of the 10 underlying infrastructure projects in this example meet the finalised qualifying infrastructure criteria in Annex C, the risk charge would work out to be **40% of Market Value**.

Conversely, if all of the 10 underlying infrastructure projects in this example do not meet the finalised qualifying infrastructure criteria in Annex C, the risk charge would instead work out to be **50% of Market Value**.



3.73. A majority of respondents were supportive of the proposals, but some highlighted concerns on the operational burden associated with a look-through approach. Some respondents proposed some modifications to the look-through approach, aimed at reducing operational burden, including:

- a) setting materiality thresholds such that only significant exposures (above a certain size) would require detailed look-through analysis, whilst smaller investments can apply the differentiated capital treatment (i.e. lower risk charge) without performing a look-through;
- b) implementing standardised reporting templates that provide the required information to apply a fund look-through approach;
- c) relying on fund managers to assess whether the qualifying criteria are met;
- d) maintaining a whitelist of infrastructure funds that are accorded with a lower risk charge;
- e) allowing look-through treatment for infrastructure securitisations

MAS' Response

3.74. Allowing the look-through approach for infrastructure funds enhances insurers' ability to assess risks accurately. Given the bespoke nature of infrastructure investments, it will not be prudent to set a materiality threshold and accord a lower risk charge to smaller size deals without conducting a look-through to the underlying infrastructure assets. MAS will proceed to allow look-through for infrastructure investment in a fund structure, similar to CIS as specified in Appendix 4B of MAS Notice 133.

3.75. On coming up with standardised reporting template that provides the required information to apply a fund look-through approach, the CIS look-through approach has been in place under MAS Notice 133 since its implementation in 2020. MAS does not require any additional reporting other than the statutory forms under MAS Notice 129. Insurers can explore the most optimal approach for working with their fund managers to obtain the required information for applying a look-through approach in risk charge computation and consider whether establishing a reporting template may be useful for their purposes.

3.76. On allowing insurers to rely on fund managers to ensure that the qualifying criteria are met, MAS holds the insurers accountable for ensuring that the relevant definitions and qualifying criteria are met before applying the differentiated capital treatment to the infrastructure investments. We do not intend to prescribe additional standards on the extent of reliance an insurer can place on its fund manager(s).



- 3.77. MAS would like to clarify that the alternative approach to look-through via whitelisted funds as suggested in paragraph 3.73 would not be considered under the base RBC 2 framework at this juncture. Furthermore, it is imperative that all infrastructure investments via CIS, where the look-through approach is applicable, meet both the finalised definitions and qualifying criteria as set out in Annex C.
- 3.78. Lastly, MAS would like to clarify that the application of look-through is not applicable to structured products backed by underlying infrastructure assets. Such investments will be subject to the capital treatment specified for structured products in Section 2 of this response paper.

Recency of data used for look-through

- 3.79. MAS also sought comments on the proposal for insurers to perform the look-through of infrastructure fund using data at an earlier point in time than the valuation date, but no earlier than one month prior to the valuation date (referred to as “data reference point”).
- 3.80. A majority of respondents requested that MAS extend the look-through data reference point from one month to 90 days (one quarter) following each quarter end for infrastructure and private investments. They highlighted that this would align with established industry practice, given that the valuations of these assets are typically reported quarterly rather than monthly. The extension in timeline would address significant operational challenges, enhance reporting efficiency, and ensure greater consistency with practices recognised under Solvency II.
- 3.81. While using earlier data can improve operational efficiency and timeliness in reporting, some respondents noted potential challenges, including data accuracy concerns. To address this, one respondent suggested implementing specific safeguards, such as limiting the timeline extension to funds demonstrating low or stable turnover¹⁷, and requiring insurers to provide justification and validation to confirm that earlier data remains appropriate for current analysis. Adjustments should also be made if any material changes are identified in the portfolio during the extended period. One respondent also sought clarifications on MAS’ willingness to consider timeline extensions (i.e. a different data reference point) on a case-by-case basis.

¹⁷ This refers to investment portfolios that do not change frequently in composition, i.e. the buying and selling of underlying investments within the fund is infrequent or consistent over time.



MAS' Response

- 3.82. Instead of limiting the review of the appropriate data reference point solely to infrastructure funds, MAS will review the suitability of the data reference point for the look-through of all CIS to ensure consistency across fund types. We will consult the industry in due course. In the meantime, insurers are expected to apply the look-through for infrastructure fund in the same manner as for CIS, using data at an earlier point in time than the valuation date, but no earlier than one month prior to the valuation date, unless otherwise agreed by MAS¹⁸.

Capital treatment for infrastructure CIS or funds where underlying assets are infrastructure loans

- 3.83. MAS sought feedback on aligning the capital treatment of infrastructure loans with that of infrastructure debt securities, rather than typical loan investments, given their similar risk profiles and the complexities in valuation within CIS.
- 3.84. The majority of respondents either expressed support for or did not raise objections to the proposal, noting that infrastructure loans share key characteristics, risk profiles, and objectives with infrastructure debt securities. Two of these respondents provided detailed analyses highlighting these similarities between infrastructure loans and infrastructure debt securities, examining aspects like covenants, protections, and risk profiles of the infrastructure loans. However, three respondents disagreed with the proposal, arguing that infrastructure loans have distinct structures and risk profiles, and should therefore remain to be treated as typical loans.

MAS' Response

- 3.85. The diversity in views highlights the need for a closer look at the characteristics and risk profiles of infrastructure loans, which can be bespoke. MAS will continue to engage the industry to review the capital treatment of infrastructure loans in a more holistic manner, alongside the broader review of capital treatment and valuation for all loans. Meanwhile, insurers with queries on the capital treatment of infrastructure loans that do not qualify as debt-based securitised assets should approach MAS,

¹⁸ A case-by-case exception is already allowed under para 2 of Appendix 4B on Treatment of Collective Investment Schemes in MAS Notice 133.



providing specific details of the loans, for guidance. For infrastructure loans that qualify as debt-based securitised assets, the capital treatment will follow the treatment for that category.



Annex A

List of respondents to the consultation paper on proposed capital treatment for structured products and infrastructure investments for insurers

1. AIA Singapore Private Limited requested for confidentiality of submission
2. Clifford Capital Holdings Pte. Ltd.
3. DWS Investments Singapore Limited
4. Keppel Limited. requested for confidentiality of submission
5. Pinebridge Investments Singapore Limited
6. QIC Limited
7. Singapore Life Limited.
8. SwissRe Asia Pte. Ltd and Swiss Re International SE, Singapore Branch
9. Tokio Marine Insurance Singapore Ltd.
10. Respondent 1 requested for confidentiality of identity
11. Respondent 2 requested for confidentiality of identity
12. Respondent 3 requested for confidentiality of identity
13. Respondent 4 requested for confidentiality of identity
14. Respondent 5 requested for confidentiality of identity

The remaining 20 respondents requested confidentiality of both identity and submission.

Please refer to Annex B for the submissions.

Annex B

Submission from respondents to the consultation paper on proposed capital treatment for structured products and infrastructure investments for insurers

Note: The table below only includes submissions for which respondents did not request confidentiality.

S/N	Respondent	Response from respondent
1	Clifford Capital Holdings Pte. Ltd.	Question 1: No objection. This is in line with what MAS has been contemplating for the past few years, which is to remove this option in order to avoid insurers cherry picking between 3.7(a) and (b). This would also remove any volatility or significant swings in the capital risk charge that the insurer has to bear, since the market value of structured products can sometimes display greater standard deviations/variance compared to general fixed income products, particularly for lower rated tranches. In any case, as most RBC2 insurers would choose to invest only in investment-grade rated structured products, the resultant risk charges would likely end up below 50% of the market value anyway. Question 2: No objection. However, where it states “an insurer may recognise such credit ratings when calculating the credit spread risk requirement of the securitised assets in the same manner as a corporate bond...”, the words ‘securitised assets’ should be replaced with ‘securitised tranche’, to clarify that the credit spread risk charge is applied to the tranche instrument itself, and not to each of the underlying assets in the securitisation pool. Insurers would also appreciate clarification from MAS whether private ratings (i.e. rated by the approved rating agencies but not publicly disclosed) would be accepted, as some issuers/borrowers may not always want to have their ratings publicised, but are happy to provide them on a confidential basis to select investors. Question 3: No objection. This is in line with what MAS has been contemplating for the past few years, which is to remove the loading on interest rate mismatch risk charge and foreign currency mismatch risk charge. We agree with the underlying rationale that general interest rate and currency exchange rate

S/N	Respondent	Response from respondent
		movements would impact all fixed income instruments that are sensitive to interest rate and/or foreign currency rate movements in the same manner. Since this proposed change is more aligned with other insurance jurisdictions where differentiated treatment is only observed for credit risk, it has also been welcomed by the insurance investors we have spoken to. Question 4: We have heard a few insurers comment that it would be helpful if MAS could provide clearer definitions or guidelines on what constitutes ‘debt-based’ and ‘equity-based’ assets for securitisation. There is also potentially some confusion with the later part of this CP – specifically Q27 which discusses whether infrastructure loans should be treated as ‘infrastructure debt’. Does ‘debt-based’ in the context of this question therefore include both bond and loan instruments? As another observation, even within rated debt-based securitisations, we believe there is further scope for differentiation in loading or risk charges depending on the type of underlying collateral. As many issuers and investors can attest – not all AAA-rated fixed income assets carry the same level of risk (and the same applies for other rating bands). Most would agree that the AAA-rated tranches for prime mortgage RMBS, sub-prime mortgage RMBS, broadly syndicated leveraged loan CLOs, auto loan ABS, credit card loan ABS and Bayfront’s IABS do not share the same risk profile because of their different underlying assets. Therefore, we feel that for underlying securitised collateral assets that have empirically demonstrated lower default and/or higher recovery rates than others, such as infrastructure loans, it would be justified to further discount their loading factors relative to higher risk securitised assets such as leveraged loan CLOs. This would incentivise insurers to invest in such lower risk securitised products. On the flip side, if all securitised products of the same credit ratings had similar capital charges, insurers would naturally gravitate to the highest yielding products which often would be those of highest underlying risk profile (e.g. middle market loan CLOs or sub-prime commercial real estate CMBS), leading to reduced investment in the ‘safer’ assets such as IABS or prime mortgage RMBS. Question 5: An insurer we spoke to mentioned that it would be helpful to get clarity on whether repack vehicles and credit-linked notes would be considered as ‘non-standard instruments’, since these are fairly common structures in the market; and in the case of a simple pass-through repack where a SPV issues a loan or note to the investor, having this labelled as ‘non-standard’ could result in a capital charge that exaggerates its underlying risk profile.

S/N	Respondent	Response from respondent
		It would also be helpful to clarify whether ‘unrated securitised assets’ refers to the securitised notes themselves, or the underlying collateral assets. Please also refer to our response to question 28. Above all, it is important to create the right capital incentive structure for insurers to invest in structured products, relative to direct investments into the underlying assets alone. The aggregate capital risk charge for investing in a securitised product (particularly the senior tranches such as the AAA-rated tranche) should not be greater than the aggregated capital risk charge if the insurer was to invest directly into each underlying asset, since securitisation provides the structural protections of diversification and credit enhancement, compared to direct investments into the underlying collateral assets. Question 6: 1) Can we clarify if electric buses would be eligible under Transportation assets; and subsea cables eligible under Communication assets? 2) Assets within the Natural Resources value chain, such as Oil & Gas and Metals & Mining, have been omitted from the eligible categories. Many of such projects are still very critical to the energy and economic needs of their countries and communities, and also possess the same robust credit features mentioned in Proposal 8 (i.e. predictable revenue generation due to long-term offtake contracts with creditworthy counterparties, including those of take-or-pay nature, market standard incurrence-based and maintenance-based financial covenants (e.g. debt service coverage ratios, leverage ratios), termination payments, operated or managed by sponsors or related parties with long and established track records, alignment of interest between sponsors and lenders, strategic national projects). At Clifford Capital, we have invested in numerous such projects since we commenced operations in 2012, and the vast majority of them have displayed resilient performance through macroeconomic cycles and timely debt servicing, with less than 1% default rates experienced. Question 7: Nil. Question 8: With regards to limb (b) of paragraph 4.8, does MAS plan to stipulate a minimum threshold for the share of the corporate entity’s revenue which is derived from infrastructure assets/activities, or to leave it to the discretion of the investing insurer? The latter may not provide the necessary regulatory safeguard and certainty to the insurer, who will likely not invest at all for fear of regulatory blowback. Question 9: Nil.



S/N	Respondent	Response from respondent
		Question 10: Will the MAS stipulate what are the ‘sustained stress conditions’, or will this be up to the discretion of the insurer, using empirical evidence and back-testing of historically stressed conditions (e.g. during the Global Financial Crisis of 2007-09, or the COVID pandemic of 2020-21)? If the project itself has a public or private rating from a recognised ECAI, the rating would be the result of stress scenario analysis, so would that suffice for this purpose? Question 11: Nil. Question 12: Nil. Question 13: Nil. Question 14: This seems an odd requirement and conflicting with the requirement that only projects that have been operational for at least 5 years (as mentioned in paragraph 4.20 / question 15) would be eligible. In that case, why would the completion safeguards in limb (d) be relevant? In any case, project management for infrastructure projects are often covered by independent reports from consultants, such as the lenders’ technical adviser. For projects under construction, such reports include periodically updated forecasts on the project completion timeline and costs (i.e. whether above or under budget). The provision and timely delivery of such reports to the insurer should suffice for this purpose, since it is not feasible for the insurer to conduct site inspections or to quiz the management team of the sponsor/project company on the implementation of the project management plan. Question 15: This is not a viable proposal, for reasons that we have previously articulated to the MAS insurance regulation department, even if this is the guidance prescribed under the IAIS’ ICS. Firstly, it disincentivises insurers from investing in projects which have just became operational and are otherwise well structured, possessing all the other criteria mentioned in Proposal 8. Rating agencies also do not ascribe differentiated treatment to such projects, and projects are often significantly derisked once they have reached completion. This is backed up by empirical evidence such as Moody’s study on default rates for project finance bank loans - where the marginal default rates have been observed to decrease

S/N	Respondent	Response from respondent
		immediately after year 1. In comparison, corporate bonds rated Ba by Moody's reach their peak marginal annual default rate around year 4, before decreasing thereafter. It would be counterintuitive and against the empirical evidence for infrastructure projects to need a longer seasoning period than corporate debt, before they are deemed to be significantly less risky for insurers. This is also not supported by our own evidence. Bayfront's Infrastructure Asset Backed Securities (IABS) collateral pools from BIC to BIC V have featured numerous loans that have been operational for less than 5 years, but to date none of these loans have experienced losses. In fact, there is no guarantee that projects that have been operational for longer than 5 years would be any less risky than 'younger' operational projects, as periods of lower project revenue may arise for a multitude of reasons, such as seasonal weather changes impacting power generation for renewable energy plants, mechanical malfunction of key plant components leading to shutdown or suspension of operations for a prolonged period, or terrorist attacks targeted at or around the project site – all of which can occur at any point in time during the project's effective operational life. This criteria of 5 years of operations would also restrict insurers to participating only in secondary market purchases of assets financing such projects. Bridging the infrastructure financing gap globally and in Asia-Pacific requires large scale participation from insurers who are amongst the largest institutional investors globally – and disincentivising them from investing in new primary market transactions would be a huge setback in trying to close that gap. Question 16: While we can understand the thinking behind this, it is a huge disincentive for investment in emerging markets, many of which have the most critical need for new infrastructure. Asia-Pacific is dominated by many such countries, such as Vietnam, Cambodia, Laos and Bangladesh. Also, in cases where the asset has more than one rating, is the insurer to apply the highest or lowest of those ratings? Such clarity would be helpful for the insurer making the decision to invest or not. We would like to propose for the threshold to be reduced to 'BB' equivalent. This can also capture instances where the sovereign rating may be rated BB+, or BB with positive outlook, so there would be a clear path in the coming years for it to reach an investment grade rating. Alternatively, instead of a minimum rating floor for the sovereign rating of the host country or the rating of the ECA/MFI, perhaps the risk charges can be tiered according to ratings.

S/N	Respondent	Response from respondent
		Question 17: Nil. Question 18: Some clarity would be helpful here in what MAS would consider as “maturity” – whether that be legal final maturity, expected maturity (e.g. based on weighted average life, if the debt is amortising), and how to treat call or put options by the borrower/issuer. Also, in the context of insurers investing in an infrastructure fund whereby assets may be liquidated by the fund manager before the end of the fund life, how are insurers to view ‘holding the investment to maturity’ in such case, since that decision on holding the underlying infrastructure loan is not entirely in their hands. Question 19: Each and every infrastructure project and infrastructure corporate is unique, with different risks and mitigants based on industry sectors, legal jurisdictions and transaction counterparties. A one-size-fits-all guideline framework would not be appropriate for such a diverse asset class. On the other hand, we have heard from insurers that they can often be “paralysed” from decision making due to lack of regulatory guidance, as the fear of regulatory blowback then incentivises them to ‘do nothing’. Therefore some basic foundational principles and guidelines would be beneficial, but without being overly prescriptive across various sub-sectors of infrastructure investments. An insurer we spoke to commented that it could be difficult to find transactions that fit all the criteria listed in Proposals 6, 7 and 8. If a transaction met all but one of the criteria, they would still not be able to invest on the basis of missing that one last criteria point. They feel that MAS should consider allowing insurers to use a more holistic approach such as applying a ratings scorecard – and this could be an internal rating or an external rating obtained from an ECAI – which would recognise the overall strength of the investment, rather than applying a full exclusion based on the investment not meeting one criteria item. We believe another approach could be for MAS to provide a ‘whitelist’ of approved products that satisfy the qualifying criteria – or for product/fund managers to approach MAS with their proposed product and request MAS to put them on the whitelist – instead of multiple insurers each having to perform their own analysis for the same product, which may inadvertently throw up different conclusions for different insurers. A few other insurers we have spoken to have also supported this idea as it helps to reduce the significant resource requirements and complexity.

S/N	Respondent	Response from respondent
		Question 20: Overall the qualifying criteria are quite high level and vaguely defined, which would make it quite challenging for insurers to make their own determination, given the bespoke nature of individual infrastructure projects. This will inadvertently result in little to no investment activity from insurers, since it will be too resource intensive and cumbersome for insurers to think it is worth their while to look at infrastructure investing. Please refer to our response to Q19. We believe it makes more sense for the MAS to consider a “whitelisting” approach. Question 21: Nil. Question 22: No comment. We note under paragraph 4.51 that the MAS is planning a separate engagement with the industry on capital treatment of infrastructure loans, the vast majority of which are unrated. This is critical in the context of the capital treatment of products such as IABS, whose whole remit is to convert unrated and illiquid infrastructure loans, into publicly rated and listed securities; which has significant benefits for insurers from a capital risk charge and liquidity perspective, to incentivise their participation in infrastructure debt investments. The proposed credit spread adjustment risk factors should therefore apply not only to unrated infrastructure debt securities, but also to unrated infrastructure loans. Question 23: Nil. Question 24: Nil. Question 25: It is good to make available the option of a look-through approach as the 50% risk charge on the market value of the CIS may result in lower competitiveness of a fund offering vis-à-vis funds of a riskier nature, since the latter offer higher yields at the same capital charges. The drawback to availing the look-through, however, is that less risky funds have the administrative burden of institutionalising operational frameworks to support recurring solvency calculations. This can be a deterrent during fundraising, particularly if the ticket sizes are comparatively small. To level the playing field, it may be worth considering introducing standardised risk weights for “labelled” fund(s) which can attract risk charges that are lower than 50% based on some minimum – maximum investment criteria. The introduction of such “Qualifying Infra Fund(s)” could also serve a

S/N	Respondent	Response from respondent
		novel policy objective of encouraging infrastructure players to invest in certain forms of infrastructure assets that are compatible with the risk-return needs of insurers and other stakeholders. To encourage investments in sustainable assets, such Qualifying Infra Fund(s) could offer “riders” such as lower capital charges for minimum deployments into dark-green-like assets. The benefit of an “in-between” solution tailored for the industry manifests in the following ways: (i) speed of deployment (particularly when drawn out fundraisings can be very expensive for fund managers) and (ii) ease of administration (which also reduces overall expense ratios, which the investors benefit from). Please also refer to our response to Q19. We believe it makes more sense for the MAS to consider a “whitelisting” approach, even for infrastructure funds. Question 26: Nil. Question 27: It would be reasonable to assume that the format of the credit instrument (such as providing credit in the form of a loan) should not attract a different capital treatment, particularly when the investor can demonstrate such format is able to cover most or all of the requirements under Section 4 of the CP. However we have heard from some insurers that subjecting infrastructure loans to the same treatment as infrastructure debt securities may result in more punitive outcomes. We understand from a Singapore-based life insurer that for unrated infrastructure loans, they currently only apply the counterparty default risk charge of 7.75% (equal to the midpoint between the ‘BBB- to BBB+’ and ‘BB- to BB+’ rating bands). If unrated infrastructure loans were to be given the same treatment as debt securities, insurers would then have to apply additional risk charges, such as for tenor and interest rate risk (bond duration). Question 28: There are a few typos or areas in the CP that require clarification. 1. In paragraph 3.4 and the accompanying diagram, it can be confusing to refer to ‘Rated Securitised Assets’, as it implies that it is not only the securitised tranches which need to be rated, but also each of the underlying assets. However, when following the flowchart in Diagram 1 (the third box from the top, at the left end of the diagram), it quite clearly indicates that the ‘rating’ mentioned here is referring to the tranche being rated or unrated. 2. We also note under paragraph 4.51 that the MAS is planning a separate engagement with the industry on capital treatment of infrastructure loans, the vast majority of which are unrated. This is critical in the context of



S/N	Respondent	Response from respondent
		the capital treatment of products such as IABS, whose whole remit is to convert unrated and illiquid infrastructure loans, into publicly rated and listed securities; which has significant benefits for insurers from a capital risk charge and liquidity perspective, to incentivise their participation in infrastructure debt investments. 3. We note a typo in paragraph 4.35(i)(e). Based on the worked example that follows, limb (e) should be corrected to 'Private infrastructure project equity in Indonesia'.
2	DWS Investments Singapore Limited	Question 1: Nil. Question 2: Nil. Question 3: Nil. Question 4: Nil. Question 5: Nil. Question 6: We would propose to also include business services whose primary services are for supporting the energy, transport, waste, telecom, health and education sectors, enabling businesses in their ESG transition and also specialist labs (environmental). Question 7: We would propose a clearer distinction between private/unlisted vs. listed infrastructure with the listed infrastructure definition following MAS' current definition for RBC 2, "debt or equity investments in entities that own, finance, develop or operate infrastructure assets." Question 8: Allowing for reduced capital charge for infrastructure projects but not with infrastructure corporates could be too narrow and is not in line with comparable Risk-Based Capital regimes ("RBC") such as the Insurance Capital Standard ("ICS ") and Solvency II. Substantiality of the Infrastructure corporate's revenue sources can be assessed by using the most recent financial year (where available). Infrastructure investments could also include 'Qualifying infrastructure corporate investments' which can take the form of



S/N	Respondent	Response from respondent
		equities in 'infrastructure entities' which meet the criteria under Article 164a Qualifying Infrastructure Investments of the Solvency II Regulation (EU). Question 9: We are agreeable. In our experience, each individual infrastructure asset has its own unique characteristics, the contractual and lease-nature are identifiable features that we have witnessed in generating steady cash flows throughout the assets' lifecycle. Question 10: As reference, Article 164a Qualifying Infrastructure Investments of the Solvency II regulation (EU) points out that “cash flow generated by the infrastructure assets allow for all financial obligations to be met under sustained stresses that are relevant of the risk of the project”. Question 11: Nil. Question 12: Nil. Question 13: We would propose that adequate contractual safeguards, in the shape of guarantees or other contractual provisions be expressly considered when considering the financial risks of the infrastructure investment. Question 14: Nil. Question 15: This requirement differs from Solvency II, Article 164a Qualifying Infrastructure Investments (EU) and would severely limit the flow of financing to greenfield projects. Question 15: It is our understanding that the minimum requirement of a political risk insurance only pertains to transactions under (b), where the infrastructure asset is not situated in a country with a rating of at least BBB-. This could be made more explicit. In general, while this requirement is stricter than e.g. Solvency II, it is feasible from an asset management perspective. Question 17: We object to having a predefined time commitment to hold infrastructure assets, due to the different and heterogeneous nature of the assets and investments involved (some may require a longer or shorter time to be exited). Instead, we would propose that the regulator entertains the idea of



S/N	Respondent	Response from respondent
		nudging investors towards longer holding periods via capital incentives. This is what is currently envisaged under the Solvency II reform, due to become law in the EU in 2026-2027 (see article 171a of EU Directive 2019/981): if an investor is committing to hold the infrastructure equity investment for a period of 5 years or long, it can apply for a more favourable capital treatment (22% Solvency Capital Requirement (SCR) vs the – traditionally type 1 equity – SCR of 39%). Question 18: This is a provision different from the Solvency II and significantly limits the scope for active portfolio management, while not leading to an improved risk profile of the underlying investment. In so far as this provision applies to infrastructure loans, while we usually intend to hold investments to maturity, flexibility is important. In the event of underperformance/default, the ability to sell the loan is one of the options to maximise recovery for the investors. Question 19: NIL. Question 20: Under the current proposal made by MAS, only eligible infrastructure projects would benefit from a lower risk charge while eligible infrastructure corporates can only enjoy certain diversification benefits. This is not in line with other RBC regimes globally (e.g. Solvency II or the Insurance Capital Standard) which also allow for a lower risk charge for eligible infrastructure corporates, also acknowledging the fact that the infrastructure funding market is dominated by corporate structures vs. JVs/SPVs/project finance. We believe that this approach is reasonable, especially when defining clear eligibility criteria for infrastructure corporates. For example, Solvency II requires an eligible infrastructure corporate to generate more than 60% of its revenues from infrastructure assets. Also, we may suggest to explore the option to allow for a reduced capital charge for infrastructure investments via funds where certain criteria (e.g. diversification rules, minimum holding period, etc.) are met on a fund level without the need of applying a look-through approach. Question 21: We would like to propose considering a lower correlation factor being applied between infrastructure equities and non-infrastructure equities from the level of 90%. As there are no guidelines for defining the listed infrastructure equity universe, we examined the historical correlation of the most notable listed infrastructure equity indices – FTSE Developed Core Infrastructure Index, MSCI World Infrastructure Capped Index and S&P Global Infrastructure Index, Dow Jones Brookfield Global Infrastructure Index and FT Wilshire GLIO Developed Listed Infrastructure Index, against MSCI World Index across different time periods. Though the numbers are highly dependent on the

S/N	Respondent	Response from respondent
		timeframe, for the period of September 30, 2004 to September 30, 2024, it is observed that the correlations of these listed infrastructure indices against MSCI World Index fall in the range of 0.60 to 0.86, which are lower than the level of 90% proposed. It is also worth noting that the indices that adopt a pure play approach, ie. DJ Brookfield Global Infrastructure Index, FT Wilshire GLIO Developed Listed Infrastructure Index and FTSE Developed Core Infrastructure Index demonstrate a much lower correlation with broader equities. FTSE Developed Core Infrastructure: 1-Year: 0.65; 3-Year: 0.83; 5-Year: 0.83; 7-Year: 0.81; 10-Year: 0.77; 15-Year: 0.77 MSCI World Infrastructure Capped: 1-Year: 0.70; 3-Year 0.82; 5-Year 0.86; 7-Year 0.85; 10-Year 0.82; 15-Year 0.84; 20-Year 0.86 S&P Global Infrastructure: 1-Year 0.72; 3-Year: 0.83; 5-Year: 0.86; 7-Year: 0.85; 10-Year: 0.82; 15-Year: 0.85 DJ Brookfield Global Infrastructure Index: 1-Year: 0.71; 3-Year: 0.85; 5-Year 0.86; 7-Year: 0.83; 10-Year: 0.80; 15-Year 0.80; 20-Year 0.83 FT Wilshire GLIO Developed Listed Infrastructure Index: 1-Year: 0.60; 3-Year: 0.83; 5-Year: 0.83; 7-Year: 0.81; 10-Year: 0.78; 15-Year: 0.78; 20-Year: 0.81 We then further examined the correlation on a rolling 12-month basis. Similarly, the rolling correlations largely fall below the 0.9 level for all the indices analysed, with average falling within the range of 0.74 - 0.81. Historical data proves the diversification benefits of adding listed infrastructure to a multi-asset portfolio. In a multi-asset portfolio consisting of Global Equity (MSCI World), Global Bonds (Bloomberg Global Aggregate) and US T-Bills, substituting MSCI World with the listed infrastructure (FT Wilshire GLIO Index) has the ability of increasing the modified Sharpe ratio. References: Source: DWS, Bloomberg, eVestment as of 30 September 2024. Data from September 30, 2004 to September 30, 2024. Past performance is no guarantee of future results. The FTSE Developed Core Infrastructure Index was launched on Mar 31, 2011, back-tested data prior to the launch date is available dating back to Dec 16, 2005. The MSCI World Infrastructure Capped Index was launched on Jan 22, 2008, back-tested data prior to the launch date is available dating back to Dec 31, 1998. The S&P Global Infrastructure Index was launched Feb. 22, 2007. The Dow Jones Brookfield Global Infrastructure Index was launched Jul 14, 2008, back-tested data prior to the launch date is available dating back to Dec 31, 2002. The S&P Global Infrastructure Index was launched Mar 22, 1999.



S/N	Respondent	Response from respondent
		Question 22: Nil. Question 23: Nil. Question 24: While this question specifically relates to debt securities, it should be noted that especially in the private loan market most transaction do not possess an external rating. From an asset manager perspective, the use of internal ratings is key, especially when looking at infrastructure loans and the consideration of MAS that they might fall under the same regime as securities. Question 25: Fund structure must be transparent, the underlying assets of the funds must be identifiable and the fund manager will be required to provide data to allow the (re)insurer to make its calculations for a 'look-through' approach to be available. Where look-through is possible, different capital charges should be applied to the underlying assets of a fund depending on the category the investments fall into. Question 26: Nil. Question 27: We support this provision as from our experience, infrastructure loans, due to their bespoke nature as well as tailormade structuring and covenants, have a similar (or better) risk profile than infrastructure debt securities. In our experience and supported by credit data supplied by leading external rating agencies, infrastructure loans have considerably lower default rates and higher recovery rates than corporate debt, which underlines the case for a distinguished capital treatment. Question 28: We appreciate that MAS is considering to lower the risk charge for infrastructure equity investments taking into account the unique risk profile of this asset class. This approach is also in line with other risk-based capital (RBC) regimes globally such as Solvency II, the Insurance Capital Standard (ICS) and the K-ICS (Korea) while other regulators (e.g. the Hong Kong Insurance Authority) are currently in the process of exploring this option. When it comes to the risk charge for eligible infrastructure investments of 40% as proposed by MAS, we noticed that it is inconsistent with the capital charge adopted under other RBC regimes while applying largely similar eligibility criteria. For example, the risk charge for eligible infrastructure

S/N	Respondent	Response from respondent
		projects under Solvency II and the ICS are 30% and 27% respectively and hence significantly lower than the risk charge proposed by MAS. We believe that it is important to ensure a certain degree of harmonization/consistency across regulatory regimes.
3	Pinebridge Investments Singapore Limited	Question 1: PineBridge supports the MAS proposal. A fixed 50% risk charge does not accurately reflect the economic risk of underlying investments. It encourages insurers to choose the highest risk and return assets within this category, leading to under-diversified, higher-risk portfolios. Question 2: PineBridge supports the MAS proposal. Recognizing the credit ratings assigned by recognised ECAIs to securitised asset tranches will better align regulatory capital requirements with the actual economic risk of these investments. This alignment will promote more prudent investment practices among Singapore insurers. This approach will also enhance Singapore RBC 2's alignment with international standards and best practices. It will create a more level playing field for Singapore insurers compared to their APAC peers. Regulatory treatment of ECAI credit ratings for securitization tranches under selected international standards: • Global IAIS ICS (2024 technical specification): Credit risk stress factors for securitizations and re-securitizations vary by ICS rating category (RC) • EEA Solvency II: Risk factors for spread risk capital requirements for securitisation positions vary by credit quality step (CQS) • Hong Kong RBC: Credit spread stress factors for debt investments (including asset backed debt) vary by credit rating band • Japan ESR (2024 field test): Capital requirements for securitised and re-securitised products vary by rating category • South Korea K-ICS 4.0: Credit risk stress factors for securitizations and re-securitizations vary by rating category • Australia LAGIC: Credit spreads and default factors used in calculation of prescribed capital requirements for credit spreads stress for structured/securitised and for re-securitised assets vary by counterparty credit grade

S/N	Respondent	Response from respondent
		Question 3: PineBridge supports the MAS proposal. Applying a loading on interest rate mismatch and foreign currency mismatch risk requirements to account for the volatility and illiquidity of structured products is inconsistent with the Singapore RBC 2 treatment of other complex and/or illiquid items on an insurer's balance sheet, such as e.g. illiquid investments in private loans or illiquid and complex policyholder liabilities, which do not carry additional loadings for these mismatch risks. Question 4: PineBridge supports the MAS proposal to maintain the 50% loading for market-related risk requirement (excluding interest rate mismatch and foreign currency mismatch risk requirements) on rated tranches of debt-based securitised assets. The stated purpose of the 50% loading is to account for elevated volatility and illiquidity risks of debt securitization tranches. For rated tranches of debt-based securitised assets that carry credit spread risk capital requirements, this is equivalent to a 1.5x increase in credit spread risk adjustment factors. We estimate that the 50% loading is broadly consistent with the ratios of historical volatilities of US securitised product indices (MBS, CMBS, CLO, ABS) to those of comparable (same rating, similar WAL) US corporate bond indices. Thus, the proposed adjustment is supported by historical data. We also estimate that the 50% loading is broadly in line with the post-diversification capital requirements for credit and non-default spread risk derived under the 2024 IAIS ICS data collection Technical Specifications. Thus, the proposed adjustment is in line with international regulatory practice. PineBridge does not agree with the MAS proposal to introduce 300% and 500% loadings for rated tranches of non-debt-based securitised assets. MAS argues that "less predictable cashflows [provide] grounds to differentiate the proposed loading by rated debt-based securitised assets and rated non-debt based securitised assets". We believe these additional loadings will double-count investment risk. The higher risk of non-debt collateral is already reflected in the ECAI credit ratings assigned to tranches of non-debt-based securitised assets. The rating methodologies applied to these securitisation assets are tailored to the nature of the collateral. Structured finance instrument credit ratings are opinions about expected credit loss that an investor may incur on these obligations. These opinions typically consider the predictability of cashflows from the collateral pool (static or dynamic), both in normal and stressed conditions, including forced liquidation scenarios. Tranches backed by assets with less predictable

S/N	Respondent	Response from respondent
		cashflows or more volatile residual values receive lower ratings or require more collateral. Consequently, lower-rated tranches will have higher risk-based capital charges when these charges vary by credit rating. Additional loadings for non-debt-based securitisations will double-count the risk. Moreover, differentiating capital treatment between “non-debt-based securitised assets” and “debt-based securitised assets” will incentivise structurers to create complex structures that obfuscate the true nature of the underlying assets to achieve more favourable regulatory capital treatment and may carry additional complexity, valuation, and liquidity risk. Question 5: PineBridge supports the MAS proposal. The proposal is in line with the international practice of applying prohibitive capital charges to non-rated securitization and/or highly non-standard structured products, as evidenced by the calibration of credit risk capital requirement for non-rated securitizations and re-securitizations under IAIS ICS. Question 6: Nil. Question 7: Nil. Question 8: We note that adding the proposed schedule within the policy document may cause some confusion for customers as there will be multiple schedules within the policy document. If this is to be included, we expect this would require time to incorporate. Question 9: Nil. Question 10: Nil. Question 11: Nil. Question 12: Nil. Question 13: Nil.

S/N	Respondent	Response from respondent
		Question 14: Nil. Question 15: Currently, it is market practice for Group Hospitalisation and Surgical (GHS) policies to include a nominal funeral/death benefit payable upon death due to all causes. This is generally a very small amount of \$20,000 or less, and always within the Maximum Group Sum Assured of \$100,000. Considering this, may we continue to classify such GHS policies as Category 1 instead of Category 4? Question 16: As the benefits offered under each GHS policy is customised for every client, it would be a complex/challenging process to distinguish which policies have the funeral/death benefit. The removal or separation of the funeral/death benefit under a separate rider would need to be individually discussed with each corporate client upon policy renewal. This can be a long/complex process, e.g. some corporate clients are bound by requirements set out in their global HR policy or collective agreements (which may span 2-3 years) and may face challenges in modifying their GHS benefits within a short timeframe. We would also need to implement significant system enhancements in order to operationalise the change. Considering these factors, we would require a transition period of at least 3-4 years to implement the change. Question 17: Currently, we do not create unique ID for individual life assured under voluntary group policies, and we do not map these against the individual business as the unique ID for individual life assureds may not be available for some clients with voluntary group policies. A common example is clients that have a no evidence limit (NEL) that aggregates across both the non-voluntary and voluntary sum assureds. E.g. If the aggregate NEL is \$100,000 and an individual with \$50,000 non-voluntary sum assured chooses to take up \$10,000 voluntary sum assured, they would not be underwritten as their aggregate sum assured of \$60,000 falls below the aggregate NEL of \$100,000. Corporate clients often administer their voluntary top-ups on flex administration systems that are in-house or sourced from external vendors, and these systems are not under the purview of the insurer. Companies may also have data privacy policies that restrict the sharing of personal data. For cases as per the above where the voluntary sum assured is automatically accepted without underwriting, we may not have the identification details of this individual if the flex administration system does not provide details of



S/N	Respondent	Response from respondent
		such individuals, or the company restricts sharing of personal data to insurers unless required for underwriting acceptance. Question 18: We would require further clarification on the approach given the constraints/circumstances highlighted in Q17. In general, considering the potential need for system enhancements to both insurers and corporate clients' HR/flex administration systems, the timeline of 30 Jun 2024 would not be feasible to implement changes. Question 19: Nil. Question 20: Nil. Question 21: Nil. Question 22: Nil. Question 23: Nil. Question 24: Nil. Question 25: Nil. Question 26: Nil. Question 27: Nil. Question 28: PineBridge investments is a global asset manager with a significant focus and specialization in managing assets for insurers, with extensive experience managing and investing in structured products (predominantly CLOs), having issued our first US CLO in 1999 and in Europe in 2006. We have also supported insurance regulators in evaluating these products and calibrating related risk and capital charges.

S/N	Respondent	Response from respondent
		For instance, PineBridge has contributed to the US National Association of Insurance Supervisors (NAIC) review of capital requirements for CLO investments by submitting several comment letters: - PineBridge’s Response to the NAIC regarding Proposed Methodology for Modelling CLOs and CLO Stress Test Methodology. February 17, 2023: https://content.naic.org/sites/default/files/call_materials/VOSTF%20Materials%2002.21.2023%20v6.pdf - Letter to the NAIC regarding its CLO risk assessment framework. July 15, 2022: https://content.naic.org/sites/default/files/national_meeting/VOSTF%20Materials%208.11.2022%20v6.pdf As an insurance investment manager and CLO issuer, we advocate for risk-based capital requirements that are clear and unambiguous, reflect the true economic substance of insurers’ investments and discourage complex structures designed for favourable regulatory capital treatment. We see the MAS proposals as a significant step towards this goal. Structured products play a significant part in insurers’ portfolios worldwide. In the US, structured credit (RMBS, CMBS, ABS, and other structured securities) makes up 25.1% of insurers’ bond investments, second only to corporate bonds at 55.3% (Source: US NAIC (8 May 2024) U.S. Insurance Industry’s Cash and Invested Assets Rise to \$8.5 Trillion at Year-End 2023: https://content.naic.org/sites/default/files/capital-markets-special-reports-asset-mix-ye2023.pdf). US insurance industry plays a key role in the securitization market, providing credit to households and companies and delivering stable returns for policyholders. In the UK, life insurers use internal securitization to create long-dated, high quality debt assets for their matching adjustment portfolios. Across several insurance markets in Asia, there is ongoing interest in securitised credit as a source of yield enhancement and diversification.
4	QIC Limited	Question 1: Nil Question 2: Nil Question 3: Nil Question 4:

S/N	Respondent	Response from respondent
		Nil Question 5: Nil Question 6: QIC considers that the definition of infrastructure in section 4.4 could be further clarified to reflect the range of infrastructure investments that provide essential services and play a critical role in enabling decarbonisation. These assets may be regulated, as already outlined in the proposed definition, however QIC recommends that definition also incorporates Energy and Utility assets that are unregulated for example, partially contracted assets. This is often the case with assets in renewable generation (e.g. under Power Purchase Agreements), distributed energy via smart meters, and electric vehicles and depots used for decarbonisation of public transport infrastructure. QIC believes this expanded definition would better represent current trends and how QIC and other GPs globally are considering investment opportunities in critical infrastructure assets. Question 7: QIC is supportive and has no further amendments to comment on. Question 8: QIC is supportive and has no further amendments to comment on. Question 9: QIC is supportive and has no further amendments to comment on. Question 10: QIC agrees with the inclusion of the proposed criteria of financial resilience under stress, aligning generally with the requirements we are seeing across other jurisdictions that have implemented qualifying infrastructure criteria. Given the differing nature of infrastructure assets globally, we believe that the specific definition of scenarios representing ‘under stress’ should remain somewhat flexible, enabling the insurer in collaboration with the GP, to determine stress scenarios that are appropriate for the underlying asset. Based on QIC’s experience with both Infrastructure Equity and Debt investments, we would recommend that the following factors should be included in testing infrastructure assets under stress: • Interest Rates stressed higher and lower • Cash flows / revenue stressed lower • Operating Expense stressed higher



S/N	Respondent	Response from respondent
		• Inflation stressed higher and lower Question 11: QIC is supportive and has no further amendments to comment on. Question 12: QIC is supportive and has no further amendments to comment on. Question 13: QIC is supportive and has no further amendments to comment on. Question 14: QIC is supportive and has no further amendments to comment on. Question 15: QIC is supportive of the proposed criteria that infrastructure projects should have a reasonable operational phase in place to reduce the risks of assets in their early operational phase. However, in consideration of this proposal, we are concerned that the proposed 5 years may be too restrictive, particularly so for the emergence of new infrastructure assets within the energy transition sector. Further, as per our response to Question 27, QIC's preferred method of structuring debt for infrastructure companies is via loans. Given the nature of the covenants and early warning systems structured into loans versus bonds, loans historically have had higher recovery rates, and for infrastructure, lower default rates. Infrastructure loans may therefore be considered a more conservative instrument than bonds and using the bond data only would not be fully representative. QIC would propose lowering the requirement to a 3-year operational phase, which would align with that of Solvency II regulations and allow for the inclusion of assets within the emerging energy transition sector. Question 16: QIC is supportive and has no further amendments to comment on. Question 17: QIC has considered the proposed phrasing of 4.23 to be unnecessarily restrictive in reference to the term 'committed'. While QIC's general practice is to be a long-term holder of infrastructure assets, the implications of this term in the qualifying conditions for an equity investment may create the requirement to contractually demonstrate commitment, which would be uncommon for unlisted funds. Furthermore, the implications of imposing such restrictions upon GPs would potentially impact the ability to act in the best interests of LPs, including for



S/N	Respondent	Response from respondent
		example the duty to sell an asset before maturity. This could fall under, but is not limited to, the scenarios of either creating higher value for the LPs or avoiding additional or unexpected risk. QIC's preferred amendment in this proposal would be to use the term 'intention' to hold the investment for a long period of time. As for the definition of 'long period', QIC would generally classify investment periods of 5-7 years as being reasonable. Furthermore, within an infrastructure-focused closed fund structure for equity investment, QIC would typically only incorporate a liquidity window after this 5-7 year period. We note that under Solvency II, Long-Term Equity Investments ("LTEI") for listed and unlisted equity investments is defined as 'held for at least 5 years'. Question 18: QIC has considered the proposed phrasing of 4.24 to be unnecessarily restrictive in reference to the term 'committed to hold the investment till maturity'. We do not expect that insurers would want to enter into a new debt investment with the intention to exit early, rather the implications of having to demonstrate commitment may be overly burdensome. QIC's preference would be to follow the example currently in place under Solvency II, where the insurer must be able to demonstrate the ability to hold the investment to maturity. Alternatively, a softening of the term to 'intention to hold the investment to maturity' would be an acceptable amendment. Lastly, it is worth noting that in practice, it is typical for infrastructure debt to be refinanced by the borrower well in advance of maturity dates. There is commonly no ability for the GP/lender to control the borrower's timing of the refinance (QIC would typically aim to have some sort of prepayment protection for part of the tenor of the debt). Question 19: QIC is supportive of this proposal, which is in line with expectations on insurers in other jurisdictions. Guidance we have received as it relates to Solvency II regulations, highlights insurers should verify at least annually that the infrastructure assets (debt or equity) continue to meet the qualifying criteria and therefore can continue to receive the beneficial risk charge. We note and agree that this verification should be independent from the GP. Typically, independent verification would be conducted by specialist legal advisors or consultancy firms. Question 20: QIC does not have any addition comments to raise, however we have included comments on proposal 9 in our response to Question 28.

S/N	Respondent	Response from respondent
		Question 21: QIC is supportive of the proposed correlation factors being applied to infrastructure equities. Question 22: QIC agrees that for investment grade debt, the Moody's research shows that there is little difference between the cumulative default rates for infrastructure debt vs non-infrastructure debt. Further, QIC is supportive of the proposed credit spread risk adjustment factors for unrated infrastructure debt. Question 23: QIC is supportive of this proposal that no further diversification benefit needs to be applied to infrastructure debt securities. Question 24: QIC is supportive of this proposal, highlighting that the diversity of unique infrastructure assets, and the complexity for insurance firms to accurately perform internal credit rating processes in a reliable manner, is likely to be prohibitive. Question 25: QIC is supportive of this proposal. It will allow insurers to partake in the broadest opportunity set of funds and give asset managers the scope they require. Look-through helps provide a realistic assessment of the risk that is borne and aligns with the approach most jurisdictions are either requiring or recommending. Question 26: QIC is supportive of this proposal. Question 27: We have reviewed the RBC 2 framework for loans and agree that it is likely to be more appropriate to treat them as bonds/public debt than as a typical loan investment. Firstly, we would note, that this is a conservative stance as generally infrastructure loans (which typically are not rated), are more highly covenanted with stronger protections as compared to public debt (which is rated) and certainly versus investment grade rated public debt. Such infrastructure private loan protections typically include both cashflow and leverage financial covenants across dividend lock-up and default levels; debt incurrence testing/permitted additional indebtedness regime; change of control regime; mandatory prepayment regime around disposals and receipt of insurance proceeds; restrictions on mergers, acquisitions, disposals and

S/N	Respondent	Response from respondent
		reorganisations; comprehensive suite of information covenants; comprehensive suite of positive and negative undertakings; comprehensive suite of representations; and a comprehensive security package. As a debt structurer, our preference would therefore be that infrastructure loans made to infrastructure businesses (i.e. infrastructure businesses as defined in the Annex to the Consultation Paper) with at least a three-years' operating track record (three years' operating history being our preference rather than 5 years), should obtain regulatory capital relief equivalent to public infrastructure debt. (See response to Q 15) Note that some private infrastructure loans are used for construction purposes. Our preference in this scenario is that where the holdco of the project has at least three years of operating track record, then similar to the above, regulatory capital relief should be given, equivalent to the relief given to public infrastructure debt. Secondly, in our review of the RBC 2 loan treatment we think referring to the counterparty default risk would be inappropriate for a number of reasons: 1) The counterparty may not be explicitly rated. Like the response to question 24 above on internal credit ratings, it would be inappropriate to expect insurance companies to internally rate the counterparties 2) Even if the counterparty was rated, the rating is typically for the senior debt. Infrastructure loans, because of the solid and consistent cashflows generated from the asset, are suitable to other levels of debt as well. Therefore, the senior debt counterparty risk rating would be inappropriate 3) The unsecured rating of the counterparty is a different risk to a loan. In general, the businesses to which corporate loans are provided are typically not real-asset backed; they have significantly lower barriers to entry; more variable cashflows given the absence of a regulatory regime or contracts or monopoly market position; lower EBITDA margins; and they may be unsecured. Such loans are typically covenant lite, with debt incurrence testing only (i.e. there are no maintenance financial covenants). For these reasons we do not recommend that infrastructure private debt loans be measured under the corporate loan regulatory capital measurement methodology. Rather, as highlighted above, infrastructure private loans should be given the same relief as public infrastructure debt instruments. We understand that MAS would like to have further consultation on the valuation methodology. QIC would be eager to respond in more detail at the appropriate time but note here that given many investors intend to hold them to maturity, infrastructure private loans are typically valued at amortised cost (also consistent with IFRS 9) i.e. cost, less any principal repayments, plus any

S/N	Respondent	Response from respondent
		accrued income using the Effective Interest Rate method, adjusted for expected credit losses and any impairment. Question 28: We note that Proposal 9 (section 4.28) regarding the differentiation of capital treatment for infrastructure equity did not specify a question from MAS. • We have reservations about drawing conclusions from the data from EDHEC as we believe its methodology is inappropriate for this purpose. • The EDHEC index attempts to overlay listed market methods onto unlisted assets, and can be more volatile than listed markets. • It provides speculative returns based on implied cashflows as opposed to the actual returns achieved. • Additionally, the frequency of data provided via EDHEC raises some concerns, as private infrastructure assets are not revalued monthly. This likely leads to increased volatility of this index and is not representative of what investors would see in these assets. Alternative data sources and methodology would be an appraisal-based index like that provided by Preqin data, Cambridge or FT Wilshire. If possible, we would recommend using an Index that has been ‘desmoothed’, for more accurate comparison with listed infrastructure indices. However, we do recognise that this can be difficult to source. We have spoken to Preqin who were able to share their unsmoothed data using different methods. [https://www.preqin.com/insights/research/reports/asset-allocation-unsmoothing-private-capital-returns] The approach employed by Preqin is to ‘desmooth’ the data via an autoregression model with either a 1 or 2 period lag, resulting in two ‘desmoothed’ series. Using a calculated Sharpe ratio for comparison, the two unsmoothed data series each demonstrate higher Sharpe ratios compared to EDHEC’s data series (0.71 & 0.91 vs 0.60 respectively). On a volatility comparison, Preqin unsmoothed 1 and unsmoothed 2 annualised volatility was 10.3% and 7.93%, while EDHEC volatility over the comparable timeframes as the Preqin study period (Q4 2007 to Q2 2023 for Preqin study. Q1 2008 to Q2 2023 for EDHEC & MSCI) was 15.79%. For further comparison to Listed equities over the same period, the MSCI ACWI Global Equity Index realised volatility of 18.62%. The period mismatch was simply due to availability of data. The calibration of the proposed capital treatment for infrastructure equity described in 4.30 and summarised by the diagram, does seem to be at odds with the approach QIC was expecting to see from MAS.

S/N	Respondent	Response from respondent
		The primary concerns include the absolute levels of risk charge factors still being applied to Infrastructure Corporate and Infrastructure Projects, and their charges, relative to other equity assets. There is evidence of a concurrence in other jurisdictions that the qualifying requirements of infrastructure assets, provide enough qualitative assurance on improving the quality of the underlying assets and that risk charge factors have been consistently set below that of listed equities in developed markets. Considering listed equities can comprise of everything from the largest cap S&P500 stocks down to the smallest cap companies with accompanying high price volatility, this stress factor treatment makes logical sense. For example, under the EU Solvency II regulations developed market equities attract a risk charge of 39%. This compares with Qualifying Infrastructure Projects with a risk charge of 30% and Qualifying Infrastructure Corporates with a risk charge of 36%. The ICS and Korean adaptation (K-ICS), take a slightly different approach by segmenting qualifying infrastructure investments across developed and emerging markets. For both ICS and K-ICS, developed market infrastructure assets attract a risk charge lower than developed market listed equities - 27% vs 35% for ICS and for K-ICS, the discount is even larger - 20.7% vs 35%. In all examples (except for the MAS proposal), the treatment of Infrastructure Equity (Project or Corporate) has been preferential to risk charges applied to Listed Equities, when the asset is located in a developed market. Under the latest ICS technical specifications, Infrastructure Equity in emerging markets (EM) receives a 25% reduction in treatment vs. Other Equities (Emerging Listed Equities, Hedge Funds, Private Equity etc), which is also only charged 2% higher than Developed Markets Listed Equities. This treatment has also been applied in K-ICS regulations. The current RBC 2 equity investment risk differentiation between a) Listed Equities in Developed Markets, and b) Other Equities, fails to specifically categorise infrastructure assets as being in either Developed or Emerging Markets. We note that part of the proposed qualifying criteria for infrastructure assets includes safeguards for political uncertainty, as part B allows for assets in Emerging Markets to qualify if the appropriate risk mitigants are in place. While QIC is supportive of such safeguards being included for political uncertainty (see above response to question 16), under the Equity Risk charges being applied, we believe this should further isolate infrastructure assets located in Developed Markets vs Emerging, with appropriate levels of risk charge differentiation, as demonstrated by the ICS / K-ICS and Solvency II approaches outlined above. Infrastructure Assets in DM vs EM



S/N	Respondent	Response from respondent
		While data on emerging market infrastructure assets (both listed and unlisted) can be difficult to source, we can look to the Developed Market and Emerging Markets Indexes published within the FT Wilshire GLIO Series to support our recommendation for DM vs EM risk charges. The Global Listed Infrastructure Organisation (GLIO) is the representative body for the \$3 trillion market capitalisation listed infrastructure asset class. The risk and return metrics for the 10yrs to Sept 30 2024, using data sourced from Bloomberg, have been summarised below. FT Wilshire GLIO Developed Listed Infrastructure Index: 8.91% (10yr Total Return annualised); 12.73% (10yr annualised volatility); 0.54 (Sharpe Ratio) FT Wilshire GLIO Emerging Listed Infrastructure Index: 7.21% (10yr Total Return annualised); 21.32% (10yr annualised volatility); 0.24 (Sharpe Ratio) Source: Bloomberg (to 30 Sept 2024, USD). Assumed risk-free rate of 2%. Infrastructure Corporates vs other unlisted assets And finally, we are also concerned that equity risk charges for Infrastructure Corporates, despite being required to meet all of the qualifying standards outlined in this proposal, are still being assessed with a risk charge in line with the other unlisted assets categorisation, which for direct comparison, includes all private equity, hedge funds and listed equities in emerging markets and other unlisted equity investment. We do not believe this is either a logical or quantitatively supported calibration of the risk charges for qualifying Infrastructure Corporate investments.
5	Singapore Life Ltd.	Question 1: Agree with the proposal. Question 2: Agree with the proposal. Question 3: Agree with the proposal. Question 4: Agree with the proposal. Question 5: Agree with the proposal. Question 6: Agree with the proposal. Question 7:



S/N	Respondent	Response from respondent
		Agree with the proposal. Question 8: Agree with the proposal. Question 9: Agree with the proposal. Question 10: Agree with the proposal. Question 11: Agree with the proposal. Question 12: Agree with the proposal. Question 13: Agree with the proposal. Question 14: Agree with the proposal. Question 15: Agree with the proposal. Question 16: Agree with the proposal. Question 17: Agree with the proposal. Question 18: Agree with the proposal. Question 19: Yes, the guidelines to cover the due diligence points in the consultation paper. Question 20: Nil. Question 21: Agree with the proposal. Question 22: Agree with the proposal.



S/N	Respondent	Response from respondent
		Question 23: Agree with the proposal. Question 24: Agree with the proposal. Question 25: Agree with the proposal. Question 26: Agree with the proposal. Question 27: Agree with the proposal. Question 28: Nil.
6	Swiss Re Asia Pte. Ltd., Swiss Re International SE Singapore Branch	Question 1: Nil. Question 2: Nil. Question 3: Nil. Question 4: Nil. Question 5: We ask for MAS to reconsider the current treatment towards investment grade re-securitised products issued by government agencies. For instance, an example that MAS could consider in their assessment would be the US Agency Mortgage-Backed Securities (MBS), where certain collateralised mortgage obligations (CMOs) are structured Agency mortgage-backed securities that are created from underlying pools of Agency mortgage-backed securities (e.g. ISIN:US38384EWV37). Given that these instruments are government-backed and hence less risky, we believe the proposed treatment for such products are too punitive. Given the lower risk involved, we would like to propose for MAS to consider treating these investment grade re-securitised products issued by government agencies the same as rated securitised products.



S/N	Respondent	Response from respondent
		Question 6: Under Paragraph 4.4 (b), we note that MAS has proposed for 'Social infrastructure assets' and 'Urban smart cities' to be an extension of the definition of infrastructure. We would like to highlight that if this is included into the definition for infrastructure (and by extension, infrastructure assets), there would need to be clear definitions on typical safeguards, such as long-term contracts, as with other safeguards provided for other types of infrastructure. Currently, under Paragraph 4.4(b), "communications assets" are defined as "Long-term contracts, mostly "business-to-business". While this definition is generally acceptable for a majority of the asset classes, this is not the case for Fiber networks. We would like to highlight to MAS that there should be consideration for Fiber networks supporting consumer networks. Question 7: Nil. Question 8: Nil. Question 9: Under Paragraph 4.13(d), we would like MAS to provide more clarity on the criteria 'Resilient demand', as it is currently unclear what resilient demand would entail. Question 10: Under Paragraph 4.14, we would like MAS to provide more clarity on "sustained stressed conditions". Specifically, MAS could provide clarity if there are any examples of stressed conditions that would be deemed as relevant for each type of project. Question 11: Nil. Question 12: Under Paragraph 4.17, we would like MAS to provide further details on what "effectively managed" entails. Question 13: Nil. Question 14: Nil. Question 15:



S/N	Respondent	Response from respondent
		Under Paragraph 4.20, we would like for MAS to provide more information on the data sources used to determine the proposed criteria that infrastructure projects are to be in operational phase for at least 5 years. We ask for MAS to align its proposed criteria with IAIS' proposed criteria for infrastructure projects eligible for differentiated capital treatment (see 2024 ICS Technical Specifications, Section 3.1, Para 682 c. (ii)), where the criteria are 5 years in operational phase for equity infrastructure projects, and only 3 years in operational phase for debt projects. Question 16: Nil. Question 17: In line with the current Solvency II requirements where long term equity investments are required to be held for more than 5 years, we would like to propose a timeline for 5 years as a reasonable long period. Question 18: Nil. Question 19: Nil. Question 20: Nil. Question 21: We would like to propose for MAS to consider including a separate category for non-listed infrastructure in developed markets instead of including this under "Other equities" and investigate the correlation factor between infrastructure equities and non-infrastructure equities for non-listed infrastructure equities in developed markets. There are currently a wide range of market analysis and evidence based on historical returns that suggest that non-listed infrastructure in developed markets have lower volatility as compared to listed infrastructure. Question 22: Nil. Question 23: Nil. Question 24: Nil. Question 25:

S/N	Respondent	Response from respondent
		Nil. Question 26: Nil. Question 27: Based on experience with the Swiss Solvency test, we agree it is reasonable to treat infrastructure loans to similar capital treatment as infrastructure debt, rather than a typical loan investment under RBC 2 framework. This is especially so if the infrastructure loan has been held to maturity (based on the qualifying criteria of a "commitment to hold investment to maturity"). Question 28: Overall, Swiss Re has no objections for differentiated capital treatment of structured products and infrastructure investments if it is derived from risk-based approach and supported by evidence. i.e. lower risk of respective assets . Under Paragraph 4.7 we note that MAS is proposing to "differentiate between investments in infrastructure projects and infrastructure corporates, and have variation in the proposed capital treatment for both types under RBC 2, given the different risk profiles". Swiss Re supports a risk-based capital treatment of the entire balance sheet, esp. all asset classes. Both from a solvency and policyholder protection point of view, no asset class should be pro- or demoted by deviating from risk-based capital treatment. We see the following implications when deviating from an objective risk-based treatment of infrastructure investment: 1) An increased demand for these asset classes for the insurance sector may result a) in systemically higher prices – unjustified by the underlying real value, and b) in asset concentration risk in the insurance sector. Both elements trigger systemic risk for the corresponding jurisdiction. 2) Infrastructure investments are commonly materially long term and could be considered critical for the economy, they are located in. This may give rise to significant political risk for the investment. Where infrastructure investments happen on a buy-and-hold basis, and there is little or no liquid market to trade the investments, the political risk is difficult or impossible to manage. This risk must be appropriately reflected to keep policyholders protected and to foster financial stability in the investing insurance sector. On the investment side, there is still a very limited supply of green investment opportunities in the market. Swiss Re believes it is primarily for the private sector to develop more green investment opportunities, but we encourage governments and regulators to create a regulatory environment to unlock more green investment opportunities, by removing complexities to make it easier for the private sector to operate within and across different jurisdictions and by promoting the de-risking role played by re/insurance and

S/N	Respondent	Response from respondent
		having clear definitions of sustainability/ESG to reduce potential "greenwashing".
7	Tokio Marine Insurance Singapore Ltd.	Question 1: While it is possible to obtain the component asset classes of the structured products, it may be operationally onerous to obtain the required information to perform the look through at each reporting period, given that up to date information on asset class split should be used. Hence, not having the option to apply a fixed 50% risk charge on the structured product could result in a substantial increase in operational complexity for RBC2 reporting. Question 2: No concerns with this methodology. Also, may be preferred to have differentiated capital charges for different ratings by the ECAIs. Question 3: No concerns with this methodology. We agree with MAS' assessment that interest rate risk and foreign currency risk will impact structured products similarly to other assets and hence should not be subject to an additional loading. Question 4: a) Securitised assets are typically subject to tight underwriting guidelines, risk retention requirements and various other requirements for investor protection, all of which considerably reduce the risk of investing in securitised assets. In light of the above, would the 50% loading requirement be deemed high? b) Based on MAS' proposition on loading non-debt based securitised assets, it appears that there is a potential for the resultant risk charge to be greater than the market value of the asset itself. For example, in cases where the underlying assets is a basket of private equities (given the risk charge required on Private Equities is 50% based on MAS Notice 133 para 4.3.2.1 - Table 4D), then a 300% loading on the risk charge would be calculated to be a total risk charge of 200% ($50\% + (300\% * 50\%)$) of the asset's market value. This results in a risk charge value that is twice the market value of the non-debt based securitised asset in concern. As such, we would also like to clarify with MAS if the above interpretation of the proposed loading methodology in risk charging is in line with MAS' understanding. Question 5: The proposal to set all structured products not under the Rated Securitised Assets category (i.e: those considered as re-securitised assets/unrated

S/N	Respondent	Response from respondent
		securitised assets/others) as non standard instrutments may seem excessively onerous in terms of risk charging. Currently in MAS Notice 133, there is no differentiation between different types of structured products and as such will all be subject to the same risk charge methodology per Appendix 4G (a maximum of 50% risk requirement). However, by differentiating certain structured products as non-standard instruments, the risk requirement is now increased to 100% for them, and this would limit the options available to insurers for investing in structured products given the onerous risk requirement. In particular for unrated securitised assets, a 100% risk requirement would be required for them under the proposed new classification. Will this be deemed excessive as securitised assets (both rated and unrated) are subject to tight underwriting guidelines, risk retention requirements and various other requirements for investor protection, all of which considerably reduces the risk of investing in securitised assets. In the case of debt-based securitised assets (both rated and unrated), would it be possible for MAS to instead consider an approach similar to how bonds are currently risk charged, i.e: applying a gradual increase in risk charge based on the credit quality class of the bond, with unrated debt-based securitised assets having a credit quality class of between Class D and Class E (akin to the current methodology for unrated bonds under credit spread risk requirement). Question 6: No further comment on the proposed definition of infrastructure and infrastructure assets set out in Para 4.4. Question 7: No further comment on the proposed definition of infrastructure investrtments. Question 8: No further comment on the proposed definition of infrastructure project and infrastructure corporate set out in para 4.8. Question 9: No further comment on the proposed criteria on predictable revenue generation. Question 10: Agree for MAS to propose that the infrastructure project must meet its financial obligations under sustained stressed conditions that are relevant for the risk of the project. Would it be possible to have a more definitive framework for this criteria of financial resilience under sustained conditions.



S/N	Respondent	Response from respondent
		For example, an interest coverage ratio of at least 1 at all times for the project/corporate under stressed scenario. Question 11: No further comment on the proposed criteria on regulatory/contractual framework. Question 12: No further comment on the proposed criteria on ensuring operational risk is effectively managed. Question 13: No further comment on the proposed criteria on financial risk mitigation. Question 14: No further comment on the proposed criteria on project management risk mitigation. Question 15: A minimum 5 years in operational phase may limit infrastructure project eligibility as some projects may be shorter in nature. Will it be possible to remove this criteria or to shorten to 3 years for (investment grade) rated instruments to improve eligibility. Question 16: Agree with the proposal, no further comment on this criteria. Question 17: We would like to propose a 5-year period as a reasonable long term commitment. Question 18: Propose allowance of flexibility to sell such investments, for example, credit deterioration, material change in asset/project sponsor, non-permissible under mandate (for example, fallen angels not permitted in investment grade mandate), change in asset allocation and liquidity management. Question 19: No further comment to the list of due diligence for infrastructure investment. Similar to investors' existing risk management governance for investments, risk management guidelines for infrastructure investments should also correspond the stipulated strict risk management practice and adherence. Question 20:



S/N	Respondent	Response from respondent
		A capital treatment calibrated under risk differentiation, i.e. by seniority of the instruments for example lower risk charge for investment grade senior tranche as compared to junior tranche or equity tranche. Question 21: No further comment on this criteria. Question 22: No further comment on this criteria. Question 23: No further comment on this criteria. Question 24: No further comment on this criteria. Question 25: No further comment on this criteria. Question 26: No further comment on this criteria. Question 27: No further comment on this criteria. Question 28: No further comments.
8	Respondent 1	Question 1: We do not have any comments as we do not invest in structured products. Question 2: We do not have any comments as we do not invest in structured products. Question 3: We do not have any comments as we do not invest in structured products. Question 4: We do not have any comments as we do not invest in structured products. Question 5: We do not have any comments as we do not invest in structured products. Question 6: We are agreeable to the definition.



S/N	Respondent	Response from respondent
		Question 7: We are agreeable to the definition. Question 8: We are agreeable to the definition. Question 9: We are of the view that the criteria on predictable revenue generation is more applicable to infrastructure projects than infrastructure corporates. We would suggest that clarification on the applicability of the criteria be provided. Question 10: We are of the view that the criteria on predictable revenue generation is more applicable to infrastructure projects than infrastructure corporates. We would suggest that clarification on the applicability of the criteria be provided. Question 11: We do not have any comments as we do not invest in structured products. Question 12: We are agreeable to the proposed criteria. Question 13: We do not have any comments as we do not invest in structured products. Question 14: We do not have any comments as we do not invest in structured products. Question 15: We do not have any comments as we do not invest in structured products. Question 16: We are agreeable to the proposed criteria. Question 17: We do not have any comments as we do not hold equities investment for long periods. Question 18: We are agreeable to the proposed criteria. Question 19: We are of the view that the criteria on predictable revenue generation is more applicable to infrastructure projects than infrastructure corporates. We would suggest that clarification on the applicability of the criteria be provided.



S/N	Respondent	Response from respondent
		Question 20: We are of the view that the criteria on predictable revenue generation is more applicable to infrastructure projects than infrastructure corporates. We would suggest that clarification on the applicability of the criteria be provided. Question 21: We do not have any comments. Question 22: We do not have any comments. Question 23: We do not have any comments. Question 24: We do not have any comments. Question 25: We do not have any comments. Question 26: We are agreeable to the proposed. Question 27: We do not have any comment as we do not invest in infrastructure loans. Question 28: An Exchange Traded Fund (ETF) is a form of Collective Investment Scheme (CIS). If there are CIS equities i.e. REITS within the ETF portfolio, would it be sufficient for an insurer to conduct a look-through of the ETF by applying 35% risk charge on developed market equities and 50% on CIS without performing a further look-through on the CIS within the ETF?
9	Respondent 2	Question 1: Nil. Question 2: Nil. Question 3: Nil. Question 4: Nil.



S/N	Respondent	Response from respondent
		Question 5: Nil. Question 6: Nil. Question 7: Regarding the definition of infrastructure investments, can we confirm that it will specifically exclude infrastructure investments in the form of securitised assets, such as collateralised loan obligations? These investments would instead be classified as "structured products" and be subject to the capital treatment outlined under the structured products section. Question 6: Nil. Question 7: Nil. Question 8: Nil. Question 9: Nil. Question 10: Nil. Question 11: Nil. Question 12: Nil. Question 13: Nil. Question 14: Nil. Question 15: Nil. Question 16: Nil.



S/N	Respondent	Response from respondent
		Question 17: Nil. Question 18: Nil. Question 19: Nil. Question 20: Nil. Question 21: Nil. Question 22: Nil. Question 23: Nil. Question 24: Nil. Question 25: Nil. Question 26: Nil. Question 27: Nil. Question 28: Nil.
10	Respondent 3	Question 1: No Comments Question 2: No Comments Question 3: No Comments



S/N	Respondent	Response from respondent
		Question 4: No Comments
		Question 5: No Comments
		Question 6: No Comments
		Question 7: No Comments
		Question 8: No Comments
		Question 9: No Comments
		Question 10: No Comments
		Question 11: No Comments
		Question 12: No Comments
		Question 13: No Comments
		Question 14: No Comments
		Question 15: No Comments
		Question 16: No Comments
		Question 17: No Comments
		Question 18: No Comments
		Question 19:



S/N	Respondent	Response from respondent
		No Comments Question 20: No Comments Question 21: No Comments Question 22: No Comments Question 23: No Comments Question 24: No Comments Question 25: No Comments Question 26: No Comments Question 27: No Comments Question 28: No Comments
11	Respondent 4	Question 1: It may be onerous to require the look through analysis for relatively small exposures. We would recommend keeping the 50% risk charge for small size exposure. We recommend the removal the counterparty default risk charge for securitised assets as: - securitised assets are set up within a special purpose vehicle and the association with the sponsor is secondary. - We believe the counterparty default risk is only relative for a structured product with embedded exposure to the issuer while in most cases this is not the case for securitised asset as the performance of the securitised asset is depending on the underlying portfolio of assets.

S/N	Respondent	Response from respondent
		- There are no additional counterparty default charges for securitised assets under other solvency regimes. Question 2: The following entities are recognised as ECAIs by the Authority: a) Moody's Investor Services; b) Standard and Poor's Corporation; c) Fitch, Inc; d) A. M. Best Company, Inc. - We support MAS proposal to recognise external credit rating agencies rating in calculating the credit risk requirement of the tranche of a securitised asset. - In addition to the four external credit rating agencies listed above we would also propose the inclusion of Morningstar/ DBRS and Kroll bond rating agency to be included as recognised EC AI. - In addition to the four previously listed, these two credit agencies have been active in rating securitised assets and they also are recognised under Solvency II for their rating of securitised assets. Question 3: We support the MAS proposal to remove a loading charge on your interest rate mismatch and foreign currency mismatch. We also strongly support removing the loading charge in its entirety as securitised assets are subject to underwriting guidelines for risk requirements other requirements for investment protection. Question 4: We strongly recommend and the removal of the 50% loading for rated debt based securitised assets as previously mentioned. For rated non-debt based securitised assets, we strongly disagree with the additional loading charge of 300% for investment grade and 500% for non-investment grade. - We would like also like to highlight that securitised assets are often backed by non-debt based assets and still provide ample credit protection to the investor. - When securitised asset is backed by non-debt based assets it means the underlying collateral for the security consists of assets that are not a financial debt instrument like loans or bonds instead the securitization is based on other types of assets that generate cash flow. - Key features of non-debt backed assets include strong cash flow debt generation, diverse asset classes and often include risk profiles that may be more conservative than traditional loan backed securitizations. - Examples of non-debt-based assets include lease payments with the asset being the collateral at the end of the lease terms, royalty streams either



S/N	Respondent	Response from respondent
		music or intellectual property utility payments such as toll road fees, water totality payments, future sales, or revenue sharing. - While the cash flow predictability of the underlying assets may differ from that of debt, a rated securitization is considered by the rating agencies and as such should not be additionally penalised for the varying structures. Question 5: Nil. Question 6: Nil. Question 7: Nil. Question 8: Nil. Question 9: Nil. Question 10: Nil. Question 11: Nil. Question 12: Nil. Question 13: Nil. Question 14: Nil. Question 15: Nil. Question 16: Nil. Question 17: Nil



S/N	Respondent	Response from respondent
		Question 18: The commitment to hold infra debt investments to maturity should be kept separate from accounting designation like “Hold-to-Maturity” or “FVOCI” classification. Question 19: Nil. Question 20: Nil. Question 21: We would recommend allowing for diversification across developed market infrastructure and other equities. Question 22: Nil. Question 23: Nil. Question 24: Nil. Question 25: Nil. Question 26: Nil. Question 27: Nil. Question 28: Nil.
12	Respondent 5	Question 1: We welcome MAS' proposal to remove the option in paragraph 3.7(b), which states that “an insurers must apply a fixed 50% risk charge on the entire marked-to-market value of the investment”. At the same time, we would like to clarify what is MAS' definition for look-through in the case of structured products. Structured assets pool can contain thousands of assets (in case of auto loans, student loans and RMBS). Since there are different tranches within the pool, the cashflow of the tranches

S/N	Respondent	Response from respondent
		might not be the same as underlying (look through assets). Therefore, we suggest using the cashflow of the specific security tranche to be used for the assessment. It would be very helpful if MAS provides more guidance on the look-through approach for structured products and example, given that look-through must be applied following the removal of the option not to perform look-through. Question 2: We agree with MAS' proposal to recognise the credit rating assigned by recognised ECAIs to the tranche of the securitised assets. Question 3: We welcome MAS' proposal to remove the loading on interest rate mismatch and foreign currency mismatch risk requirements. Question 4: 4(a). We disagree with MAS' proposal to maintain the 50% loading for rated debt-based securitised asset. This is because securitised assets are subject to tight underwriting guidelines, risk retention requirements and various other requirements for investor protection, all of which considerably reduce the risk of investing in securitised assets. Besides, structured products are not subject to additional loading in other solvency regimes such as ICS and HKRBC. Therefore, we propose no or lower loading for rated debt-based securitised asset. On top of that, we also disagree to treat the unrated debt-based securitised asset as non-standard instrument which subject to 100% risk charge, for the same reason. Moreover, the debt-based securitised assets may not always be rated by ECAIs but will have credit rating from the asset managers as part of their assessment. Therefore, we propose to subject unrated debt-based securitised asset to similar capital treatment as rated debt-based securitised asset, instead of treating it as non-standard instrument and subject to 100% risk charge. Question 5: We disagree to treat all unrated securitised assets, in particular the unrated debt-based securitised asset, as non-standard instrument which is subject to 100% risk charge. This is because securitised assets are subject to tight underwriting guidelines, risk retention requirements and various other requirements for investor protection. This has significantly reduced the risk of investing in these products. Therefore, we propose to apply the same treatment for both rated and unrated securitised assets. Question 6: We disagree to group infrastructure assets related to water utilities, waste management utilities and energy (including electricity and gas utilities) under



S/N	Respondent	Response from respondent
		'regulated assets' type of infrastructure in paragraph 4.4(b) table. This is because these infrastructures may not be regulated in other markets. Therefore, we suggest to align with ICS' classification of type of infrastructure. Question 7: We agree with MAS' proposed definition of infrastructure investments. Question 8: We agree with MAS' proposed definitions for infrastructure project and infrastructure corporate set out in paragraph 4.8. Question 9: We agree with MAS' proposed criteria on predictable revenue generation. Question 10: The financial resilience seems to be quite broad as different infrastructure projects may be exposed to different stress factors. Does this mean insurers or asset managers are allowed to define the stress factors and demonstrate the resilience under the selected stress factors? Question 11: We would like to clarify if all the criteria set forth in paragraph 4.15(For Equity) and 4.16(For Debt) are required to be satisfied or either one is sufficient. Question 12: We would like to clarify if MAS will set the materiality standard or it can be based on insurers and/or investment managers risk management guidelines. Question 13: We agree with MAS' proposed criteria on financial risk mitigation. Question 14: The proposed criterion under paragraph 4.19(d) to establish safeguards "to ensure completion of the project" implies that new project that yet in operational phase is allowed. This is contradicted to the proposed criterion under paragraph 4.20 that the infrastructure project is to be in operational phase for at least 5 years. Therefore, we propose to remove the criteria proposed in 4.20 (reason is provided in the response for question 15) and to make clear that the criteria under 4.19 are only applied to project in construction phase. Question 15: We disagree with MAS' proposed criteria that the infrastructure project is to be in operational phase for at least 5 years. According to asset manager, most infrastructure debt in the market is raised to finance construction, or to



S/N	Respondent	Response from respondent
		refinance a project soon after construction is complete. This means that limited or no infrastructure assets would qualify under this criterion. Question 16: We agree with MAS' proposed criteria. Question 17: We are in view that 5 years period is a reasonable period. Question 18: With the commitment to hold the infrastructure debt investment to maturity, will it make infrastructure asset as an eligible asset class for MA cashflow matching? We suggest MAS to add conditions that allowing insurers to dispose the infrastructure assets, for example, in the case of credit risk deterioration. Question 19: We would like to check if MAS has any concern or comment if due diligence is performed by 3rd party investment managers, but insurers will have oversight to ensure the process and control are in place and insurers will receive the due diligence assurance/report that the infrastructure investments continue to meet the qualifying criteria. Question 20: As MAS pointed out in paragraph 2.3 that not all the qualifying criteria can be met fully for some infrastructure projects, particularly in Asia, do all the qualifying criteria need to be met before the equity/debt can be categorised as infrastructure investment? Question 21: We do not have comment on the proposed correlation factors for equity sub-asset class, but we have other comments: a) Based on paragraph 4.11 (Proposal 8), equity investments in infrastructure corporates are eligible for diversification benefit. Therefore, we would like to suggest MAS to make clear in the guidelines that infrastructure equities listed in developed markets include both infrastructure corporate and infrastructure project. b) We would like to clarify if 4.35 (i) e) should be "Private infrastructure project equities" instead of "Private infrastructure corporate equities" as the sample calculation in page 27 shows that 40% risk charge is applied. Question 22: Nil. Question 23:

S/N	Respondent	Response from respondent
		Nil. Question 24: Infrastructure debt securities are usually not rated by ECAs while asset managers will have their own ratings as part of their assessment. Therefore, we would like MAS to consider extending the use of ICRP for unrated infrastructure debt securities. Otherwise, most infrastructure debt securities will be treated as unrated, which make it unattractive for insurers investing in the senior debt (Investment grade quality) infrastructure assets. Question 25: Nil. Question 26: We would like MAS to consider allowing insurers to perform the look-through using data at an earlier point, up to one quarter prior to the valuation date, instead of one month. According to our asset manager, the current market practice is that valuations for illiquid assets are carried out quarterly or even semiannually. Question 27: We agree with MAS' proposal to subject infrastructure loans to similar capital treatment as infrastructure debt, rather than as a typical loan investment under RBC2 framework, because as MAS pointed out that the risk profile of infrastructure loans resemble more like infrastructure debt securities. Question 28: 1) We would like MAS to revisit the counterparty risk requirement for structured products. We propose to remove counterparty risk requirement for securitised assets, especially debt-based securities assets issued by Special Purpose Vehicle ("SPV"), which is a bankruptcy remote entity. The primary risk of securitised assets is linked to the underlying pooled assets, i.e. credit risk, which has already been captured in credit spread risk requirement. Securitised assets are not subject to counterparty default risk requirement in other solvency regimes such as ICS, Solvency II, HKRBC and Bermuda Solvency Capital regimes. 2) We would like MAS to consider expanding the list of recognised ECAs. We propose to include Dominion Bond Rating Service (DBRS) and Kroll Bond Rating Agency as recognised ECAs. These two credit rating agencies have been active in rating securitised assets, and they are also recognised ECAs under Solvency II and Bermuda Solvency Capital regime for bonds and securitised assets. 3) We would like to clarify with MAS whether the credit spread risk adjustments of 50% of that specified for Credit Quality Class A (as stated in MAS Notice 133 paragraph 4.3.3.3 (e) for debt securities issue by a Statutory



S/N	Respondent	Response from respondent
		Board and recognised multilateral agencies as listed in MAS Notice 133 Appendix 4C) can be applied to the infrastructure assets issued by a Statutory Board in Singapore or recognised multilateral agencies.

Annex C

Revised Finalised Definitions and Qualifying Criteria for Infrastructure Investments

Note: Changes made to the definition/criteria are in underlined/ strikethrough red fonts.

1. Definition of infrastructure and infrastructure assets

a) Infrastructure (and by extension, infrastructure assets) means the physical structures, facilities, systems and networks that provide or support essential public services that bring economic and social benefits to the society. For example:

- ~~i. Regulated assets, including electricity transmission lines, gas and oil pipelines, water supply and distribution systems, and wastewater collection and treatment systems;~~
- i. Water and waste, including water supply and distribution systems, and wastewater collection and treatment systems;
- ii. Energy, including electricity generation, transmission, distribution and storage, oil and gas pipelines, production, distribution and storage of gas (including hydrogen);
- iii. Transportation assets, including roads, bridges, tunnels, railroads, rapid transit links, seaports, airports, rolling stock (train or bus fleets or other means of transportation if they are used to service public transportation), ground transportation equipment, and facilities for alternative transportation (e.g. charging and refuelling stations);
- iv. ~~Communication-Digital~~ assets, including telecommunication towers, cable systems, satellite networks, and data centres; ~~and~~
- v. Social infrastructure assets, including schools, hospitals, courthouses, other government buildings, social housing, and privately run social infrastructure assets serving a public purpose; ~~and~~
- ~~vi. Urban Smart Cities, including technology enabled solutions ranging from urban mobility (driverless vehicles) to smart street lighting (energy saving, multi-purpose lamp posts) to smart city planning.~~

b) Table below illustrates the different classes of infrastructure assets

Types of Infrastructure	What is infrastructure	What is not infrastructure	What typically makes the infrastructure investment safer
Regulated assets <u>Water utilities</u>	Water supply/distribution, Waste water collection / treatment	Fixing water pipe leakages (unless as part of maintenance and repair of water	Regulation relating to long-term concessions or pricing or return-on-



Types of Infrastructure	What is infrastructure	What is not infrastructure	What typically makes the infrastructure investment safer
		supply/distribution systems)	assets or profit margin
Waste management utilities	Facilities dedicated to waste management, treatment and recycling	Using spare parts from scrapped vehicles for other vehicles	Long-term concessions usually with the involvement of a local government or council
Energy (including electricity and gas utilities)	Generation / transmission / distribution / storage / district heating	Batteries used in electric cars Insulation of houses	Regulation relating to long-term concessions, or pricing, or return-on-assets or profit margin
Transportation assets	Airports/ports/roadways/railway network, rolling stock used to service public transportation, ground transportation equipment, facilities for alternative transportation (charging and refuelling stations)	Car, aircraft, boat manufacture Spare parts for aircrafts, repairs, etc.	Long-term concessions or agreements usually with the involvement of a local government or council. Demand for such services
Communications Digital assets (including telecommunication)	Core digital and telecom infrastructure such as broadband equipment, optical fibres, telecommunication towers, data centres	Production and selling of telephones Internet Service Provider	Long-term contracts, mostly business-to-business
Social infrastructure	Infrastructure that provides a service for the public that is regulated or governed by a government or a similar authority (e.g. courts, prisons, juvenile facilities, schools, universities, libraries, refugee camps, subsidised/social housing, hospitals, etc.); or privately run social welfare institutions serving a public purpose.		The infrastructure facility is consistent with the social policies of the relevant government or public needs of the society

Types of Infrastructure	What is infrastructure	What is not infrastructure	What typically makes the infrastructure investment safer
Urban Smart Cities assets	Smart infrastructure includes but not limited to the abovementioned infrastructures which utilises smart/ intelligence technology to ensure optimal use of resources and improve the quality of life for the citizens. For example—Smart street lightings, smart waste management systems, electric vehicles charging facilities in residential areas, including housing estates	Production and selling of electric vehicles	

2. Definition of infrastructure project and infrastructure corporates

- An infrastructure project entity is an entity which was created specifically to support, own, finance, develop or operate one or several infrastructure assets;
- An infrastructure corporate is an entity or a group that derives the substantial majority¹⁹ of its revenue from owning, financing, developing or operating infrastructure assets.

3. Definition of infrastructure investments

An infrastructure investment refers to a debt or equity investment in entities that own, finance, develop or operate infrastructure assets.

4. Qualifying Criteria for Infrastructure Investment

4.1. Equity investments in infrastructure projects are eligible to the specific risk charges for infrastructure equity when the investor can demonstrate all of the following:

- Revenues generated by the infrastructure assets are predictable, evidenced by:
 - Availability-based revenues;

¹⁹ As a guideline, a substantial majority should be interpreted as representing at least 75% level.



- (ii) Arrangements that are subject to rate-of-return regulations;
 - (iii) Arrangements that provide a high degree of contractual or regulatory certainty of payments from future revenues by mitigating demand and/or price risk through concessions;
 - (iv) Offtake contracts, such as take-or-pay contracts, or similar; or
 - (v) Resilient demand;
- (b) The infrastructure project can meet its financial obligations under sustained stressed conditions that are relevant for the risk of the project;
- (c) The infrastructure project is governed by a regulatory or contractual framework that provides equity investors with a high degree of protection, including the following:
 - (i) Where the revenues of the infrastructure project are not funded by payments from a large number of users **nor subject to resilient demand**, the contractual framework includes provisions that effectively protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services, and require the contracted purchaser to be of good credit standing or replaceable without a significant loss to equity investors; and
 - (ii) The infrastructure project has sufficient reserve funds or other financial arrangements to cover its contingency funding and working capital requirements;
- (d) The insurer is committed to holding the investment for a long period;
- (e) Risks linked to the management of the project are significantly mitigated, resulting from:
 - (i) A good expertise and a track record of the sponsor of successfully overseeing infrastructure projects;
 - (ii) Established incentives for the sponsor to protect the interests of other investors;
 - (iii) A limited exposure of investors to the default of the sponsor;
 - ~~(iv) Established safeguards to ensure completion of the project according to the agreed specifications, budget and completion date (including for example completion guarantees or the involvement of an experienced constructor and adequate contract provisions for liquidated damages);~~ and
 - (iv) The use of tested technology and design;
- (f) The project has been in operational phase for at least 5 years;
- (g) The financial risks faced by the infrastructure project are significantly mitigated, resulting from:
 - (i) The capital structure of the infrastructure project allows it to service its debt under conservative assumptions based on an analysis of the relevant financial ratios;
 - (ii) The refinancing risk for the infrastructure project is low; and

- (iii) The infrastructure project uses derivatives only for risk mitigation purposes;
- (h) Where operating risks are material, they are effectively managed;
- (i) To protect insurer against the exposure of political uncertainty affecting investment performance,
 - (i) The infrastructure assets and infrastructure entity are located in country with at least sovereign rating of ~~“BBB-”~~ **Investment Grade**; or
 - (ii) ~~The investor must have in place risk mitigants such as financial guarantee or insurance solutions provided by insurance companies, export credit agencies or multilateral financial institutions or a combination of the above with an entity credit rating of at least “BBB-”, for at least [90] percent of the investment amount (equity investment) or principal amount (debt investment). As a minimum, political risk insurance should cover currency inconvertibility and transfer restriction cover, expropriation cover, war and civil disturbance cover and breach of contract. If (i) is not met, the insurer must establish and maintain effective systems and controls to identify, assess and manage political risks in their infrastructure investments, taking into account factors such as geographical location, regulatory environment, and economic stability.~~

4.2. Debt investments in infrastructure projects are eligible to the specific risk charges for infrastructure debt when the investor can demonstrate all of the following:

- (a) Revenues generated by the infrastructure assets are predictable, evidenced by:
 - (i) Availability-based revenues or arrangements that are subject to rate-of-return regulations;
 - (ii) Arrangements that provide a high degree of contractual or regulatory certainty of payments from future revenues by mitigating demand and/or price risk through concessions;
 - (iii) Offtake contracts, such as take-or-pay contracts, or similar; or
 - (iv) Resilient demand;
- (b) The infrastructure project can meet its financial obligations under sustained stressed conditions that are relevant for the risk of the project;
- (c) The infrastructure project is governed by a regulatory or contractual framework that provides equity investors with a high degree of protection, including the following:
 - (i) Where the revenues of the infrastructure project are not funded by payments from a large number of users **nor subject to resilient demand**, the contractual framework includes provisions that effectively protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services, and require the contracted purchaser to be of good credit standing or replaceable without a significant loss to equity investors;



- (ii) The infrastructure project has sufficient reserve funds or other financial arrangements to cover its contingency funding and working capital requirements; and
 - (iii) The contractual framework provides a strong security package, which includes security in project assets and contracts, restrictions on the use of net operating cash flows, restrictions on permitted investments and activities, and on the issuance of new debt. Where the insurer can demonstrate that the security in project assets and contracts is not essential for effective protection or recovery of the vast majority of its investment, a different security package may be relied upon. In that case, the security package includes at least one of the following: equity pledges, step in rights, lien over bank accounts, control over cash flows, provisions for assignment of contracts;
- (d) The insurer is committed to holding the investment to maturity;
- (e) Risks linked to the management of the project are significantly mitigated, resulting from:
- (i) A good expertise and a track record of the sponsor of successfully overseeing infrastructure projects;
 - (ii) Established incentives for the sponsor to protect the interests of other investors;
 - (iii) A limited exposure of investors to the default of the sponsor;
 - (iv) ~~Established safeguards to ensure completion of the project according to the agreed specifications, budget and completion date (including for example completion guarantees or the involvement of an experienced constructor and adequate contract provisions for liquidated damages);~~ and
 - (iv) The use of tested technology and design;
- (f) The project has been in operational phase for at least ~~5~~ 3 years;
- (g) The financial risks faced by the infrastructure project are significantly mitigated, resulting from:
- (i) The capital structure of the infrastructure project allows it to service its debt under conservative assumptions based on an analysis of the relevant financial ratios;
 - (v) The refinancing risk for the infrastructure project is low; and
 - (vi) The infrastructure project uses derivatives only for risk mitigation purposes;
- (h) Where operating risks are material, they are effectively managed; and
- (i) To protect insurer against the exposure of political uncertainty affecting investment performance,
- (i) The infrastructure assets and infrastructure entity are located in country with at least sovereign rating of ~~“BBB-”~~ Investment Grade; or
 - (ii) ~~The investor must have in place risk mitigants such as financial guarantee or insurance solutions provided by insurance companies, export credit agencies or multilateral financial institutions or a~~



~~combination of the above with an entity credit rating of at least “BBB-”, for at least [90] percent of the investment amount (equity investment) or principal amount (debt investment). As a minimum, political risk insurance should cover currency inconvertibility and transfer restriction cover, expropriation cover, war and civil disturbance cover and breach of contract. If (i) is not met, the insurer must establish and maintain effective systems and controls to identify, assess and manage political risks in their infrastructure investments, taking into account factors such as geographical location, regulatory environment, and economic stability.~~

~~4.3. Equity investments in infrastructure corporates are eligible to the specific risk charges for infrastructure equity when the investor can demonstrate all of the following:~~

- ~~(a) Revenues generated by the infrastructure assets are predictable, evidenced by:
 - ~~(i) Availability-based revenues;~~
 - ~~(ii) Arrangements that are subject to rate-of-return regulations;~~
 - ~~(iii) Arrangements that provide a high degree of contractual or regulatory certainty of payments from future revenues by mitigating demand and/or price risk through concessions;~~
 - ~~(iv) Offtake contracts, such as take-or-pay contracts, or similar; or~~
 - ~~(v) Resilient demand;~~~~
- ~~(b) Revenues generated by the infrastructure assets are diversified in terms of activities, location, or payers unless the revenues are subject to rate-of-return regulations or a take-or-pay contract or the revenues are availability-based;~~
- ~~(c) The equity issuer is of investment grade credit quality, or:
 - ~~(i) The infrastructure corporate is of strong credit quality;~~
 - ~~(ii) The capital structure of the infrastructure corporate allows debt service under conservative assumptions based on an analysis of the relevant financial ratios; and~~
 - ~~(iii) The infrastructure corporate has been active in its lines of business for at least five years, or in the case of an acquired business it has been in operations for at least five years. Where operating risks are material, they are effectively managed;~~~~
- ~~(d) The insurer is committed to holding the investment for a long period;~~
- ~~(e) Where the revenues of the infrastructure corporate are not funded by payments from a large number of users nor subject to resilient demand, the contractual or regulatory framework includes provisions that effectively protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services, and require the contracted purchaser to be of good credit standing or replaceable without a significant loss to equity investors; and~~



- (f) To protect insurer against the exposure of political uncertainty affecting investment performance,
 - (i) The infrastructure assets and infrastructure entity are located in country with at least sovereign rating of Investment Grade; or
 - (ii) If (i) is not met, the insurer must establish and maintain effective systems and controls to identify, assess and manage political risks in their infrastructure investments, taking into account factors such as geographical location, regulatory environment, and economic stability.

4.4. Debt investments in infrastructure corporates are eligible to the specific risk charges for infrastructure debt when the investor can demonstrate all of the following:

- (a) Revenues generated by the infrastructure assets are predictable, evidenced by:
 - (i) Availability-based revenues;
 - (ii) Arrangements that are subject to rate-of-return regulations;
 - (iii) Arrangements that provide a high degree of contractual or regulatory certainty of payments from future revenues by mitigating demand and/or price risk through concessions;
 - (iv) Offtake contracts, such as take-or-pay contracts, or similar; or
 - (v) Resilient demand;
- (b) Revenues generated by the infrastructure assets are diversified in terms of activities, location, or payers unless the revenues are subject to rate-of-return regulations or a take-or-pay contract or the revenues are availability-based;
- (c) The infrastructure corporate is of strong credit quality, evidenced by:
 - (i) The capital structure of the infrastructure corporate allows debt service under conservative assumptions based on an analysis of the relevant financial ratios; and
 - (ii) The infrastructure corporate has been active in its lines of business for at least three years, or in the case of an acquired business it has been in operations for at least 3 years;
- (d) The insurer is committed to holding the investment to maturity;
- (e) Where the revenues of the infrastructure corporate are not funded by payments from a large number of users nor subject to resilient demand, the contractual or regulatory framework includes provisions that effectively protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services, and require the contracted purchaser to be of good credit standing or replaceable without a significant loss to equity investors; and
- (f) To protect insurer against the exposure of political uncertainty affecting investment performance,



- (i) The infrastructure assets and infrastructure entity are located in country with at least sovereign rating of Investment Grade; or
- (ii) If (i) is not met, the insurer must establish and maintain effective systems and controls to identify, assess and manage political risks in their infrastructure investments, taking into account factors such as geographical location, regulatory environment, and economic stability.

Annex D

Qualifying Criteria that Differ Between Infrastructure Projects and Infrastructure Corporates

a) For Equity investment

In Infrastructure Projects	In Infrastructure Corporates
The infrastructure project is governed by a regulatory or contractual framework that provides equity investors with a high degree of protection, including the following: - Where the revenues of the infrastructure project are not funded by payments from a large number of users nor subject to resilient demand, the contractual framework includes provisions that effectively protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services, and require the contracted purchaser to be of good credit standing or replaceable without a significant loss to equity investors; and - The infrastructure project has sufficient reserve funds or other financial arrangements to cover its contingency funding and working capital requirements.	Where the revenues of the infrastructure corporate are not funded by payments from a large number of users nor subject to resilient demand, the contractual or regulatory framework includes provisions that effectively protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services, and require the contracted purchaser to be of good credit standing or replaceable without a significant loss to equity investors.
The financial risks faced by the infrastructure project are significantly mitigated, resulting from: The capital structure of the infrastructure project allows it to service its debt under conservative assumptions based on an analysis of the relevant financial ratios;	The equity issuer is of investment grade credit quality, or: - The infrastructure corporate is of strong credit quality; - The capital structure of the infrastructure corporate allows debt service under

In Infrastructure Projects	In Infrastructure Corporates
ii. The refinancing risk for the infrastructure project is low; and iii. The infrastructure project uses derivatives only for risk mitigation purposes. The project has been in operational phase for at least 5 years.	conservative assumptions based on an analysis of the relevant financial ratios; and iii. The infrastructure corporate has been active in its lines of business for at least five years, or in the case of an acquired business it has been in operations for at least 5 years.
The infrastructure project can meet its financial obligations under sustained stressed conditions that are relevant for the risk of the project.	Revenues generated by the infrastructure assets are diversified in terms of activities, location, or payers unless the revenues are subject to rate-of-return regulations or a take-or-pay contract or the revenues are availability-based.
Where operating risks are material, they are effectively managed.	-
Risks linked to the management of the project are significantly mitigated, resulting from: i. A good expertise and a track record of the sponsor of successfully overseeing infrastructure projects; ii. Established incentives for the sponsor to protect the interests of other investors; iii. A limited exposure of investors to the default of the sponsor; and iv. The use of tested technology and design.	-

b) For Debt investment

In Infrastructure Projects	In Infrastructure Corporates
The infrastructure project is governed by a regulatory or contractual framework that provides equity investors with a high degree of protection, including the following: - Where the revenues of the infrastructure project are not funded by payments from a large number of users nor subject to resilient demand, the contractual framework includes provisions that effectively protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services, and require the contracted purchaser to be of good credit standing or replaceable without a significant loss to equity investors; and - The infrastructure project has sufficient reserve funds or other financial arrangements to cover its contingency funding and working capital requirements. - The contractual framework provides a strong security package, which includes security in project assets and contracts, restrictions on the use of net operating cash flows, restrictions on permitted investments and activities, and on the issuance of new debt. Where the insurer can demonstrate that the security in project assets and contracts is not essential for effective protection or recovery of the vast majority of its investment, a different security package may be relied upon. In that case, the security package includes at least one of the following: equity pledges, step in rights, lien over bank accounts, control over cash flows, provisions for assignment of contracts.	Where the revenues of the infrastructure corporate are not funded by payments from a large number of users nor subject to resilient demand, the contractual or regulatory framework includes provisions that effectively protect investors against losses resulting from the termination of the project by the contracted purchaser of the goods or services, and require the contracted purchaser to be of good credit standing or replaceable without a significant loss to equity investors.

In Infrastructure Projects	In Infrastructure Corporates
The financial risks faced by the infrastructure project are significantly mitigated, resulting from: i. The capital structure of the infrastructure project allows it to service its debt under conservative assumptions based on an analysis of the relevant financial ratios; ii. The refinancing risk for the infrastructure project is low; and iii. The infrastructure project uses derivatives only for risk mitigation purposes. The project has been in operational phase for at least 3 years.	The infrastructure corporate is of strong credit quality, evidenced by: i. The capital structure of the infrastructure corporate allows debt service under conservative assumptions based on an analysis of the relevant financial ratios; and ii. The infrastructure corporate has been active in its lines of business for at least three years, or in the case of an acquired business it has been in operations for at least 3 years.
The infrastructure project can meet its financial obligations under sustained stressed conditions that are relevant for the risk of the project.	Revenues generated by the infrastructure assets are diversified in terms of activities, location, or payers unless the revenues are subject to rate-of-return regulations or a take-or-pay contract or the revenues are availability-based.
Where operating risks are material, they are effectively managed.	-
Risks linked to the management of the project are significantly mitigated, resulting from: i. A good expertise and a track record of the sponsor of successfully overseeing infrastructure projects; ii. Established incentives for the sponsor to protect the interests of other investors; iii. A limited exposure of investors to the default of the sponsor; and iv. The use of tested technology and design.	-