

## ISDA response to the ESMA call for evidence

### An approach to Climate Risk Stress Testing of Central Counterparties

#### Executive Summary

The International Swaps and Derivatives Association (ISDA) welcomes ESMA's work on developing an approach on climate risk stress testing of central counterparties (CCPs) and that ESMA has chosen to consult with the market on its views how to incorporate climate risk into such stress tests.

We agree that climate stress testing for CCPs is different from climate stress testing for banks due to the different time horizon and other idiosyncrasies between these entities, one difference for instance being that CCPs will always have a balanced book.

While ISDA is broadly supportive of ESMA's planned approach, we make targeted comments to hopefully contribute to ESMA's thinking on this topic in a constructive manner. For example, ISDA believes that operational and financial risks should be more clearly delineated in ESMA's framework. While we agree that climate change can and will pose both financial and operational risks, the two should be considered separately. Operational events should be taken into account in CCPs' business continuity planning (BCP), while financial impacts should be incorporated into their stress scenarios.

We welcome that ESMA has performed extensive research of literature and other sources on the topic and that ESMA is also member of the Central Banks and Supervisors Network for Greening the Financial System (NGFS). We believe that international cooperation is important to develop globally consistent approaches to climate risk stress testing. We appreciate that stress tests used for other types of financial institutions cannot be easily applied due to the much shorter risk horizon applying to CCPs, but propose that the CCP climate risk stress tests should leverage off scenarios that have been developed for other constituencies.

We would also request that ESMA considers how the components of the stress scenario are actually relevant for short term shocks to a CCP's financial viability rather than components that should be addressed through business planning/strategy review and risk management practices. In setting scenarios for CCPs, there also needs to be a focus on relevancy for the products which EU CCPs offer and EU CCPs' business models.

## Questions

### Question 1

Do you agree with this classification of relevant climate risks for CCPs in these four pillars? Do you see one or several other climate risks that need to be added to this mapping (if so, please provide a definition, relevant time horizon, an approach to its measurement approach)?

We do agree with the four pillars as defined by ESMA, especially as these are categories used elsewhere in the climate stress testing context. However, we believe that some are more relevant than others. For example, collateral replacement risk is likely to have a smaller impact on a CCP's risk profile than physical or transition risk.

We do not see any other categories outside of those identified by ESMA. ESMA already introduced an "other" bucket that currently includes legal risk. We do not see any other category of climate risks that materially affect stress testing for CCPs.

The timeline of physical risk and the effect it may have on a wider spectrum of entities involved in the clearing process than only CCPs is very relevant as it can be sudden and can create stress on clearing members, other service providers in the clearing space and market stability. Examples of physical risk affecting a CCP are:

- Texas Freeze: Severe winter storms in February 2021 significantly affected power production in Texas. Energy prices spiked to levels far above what has been seen before. Wholesale prices were set to a maximum of \$9,000 per megawatt hour, compared to the average price in 2020 of \$25.73 per megawatt hour.<sup>1</sup>
- Nasdaq default: A clearing member of Nasdaq Clearing had large contracts that bet on the correlation (spread) between Nordic power and German power, which increased considerably due to extreme rainfalls.
- Impact of temperature levels on energy prices (cold snaps that require more energy for heating, but also hot periods with higher demand for air conditioning and potential energy production bottlenecks, for instance due to a lack of cooling water).
- Other possible weather events, for instance monsoons in India and typhoons in Asia causing failures of and the need for rebuilding infrastructures.

Rapid transition risk is also very relevant, and we have seen the impact on markets of sudden unexpected disasters such as the Fukushima Daiichi nuclear power plant disaster. In this case, a physical risk event triggered an immediate policy response and change in sentiment with respect to nuclear power. Examples for transition risks are:

- Impact of the announcement of caps in emission contracts on energy products – a reduction of the emissions cap would affect the price of emission allowances and affect the price of other energy assets like coal and oil.
- Fukushima<sup>2</sup> - A nuclear accident triggered by a tsunami changed the sentiment towards nuclear power in many countries.
- Impact of new extraction methods on Nickel prices (see paragraph 74 of the consultation).

<sup>1</sup> <https://www.texasmonthly.com/news-politics/texas-electric-grid-failure-warm-up/>

<sup>2</sup> One could argue that the Fukushima Daiichi nuclear accident triggered by a tsunami could also have been classified as a physical risk. We classified this scenario as a transition risk as the long-term effect of this disaster (other than significant direct cost which would have made this a physical risk scenario) was the change in public and government sentiment to nuclear power in some countries.

- Coal exits as political reaction to climate change.
- Impact of energy crisis on emission contract levels: CCPs have seen large price movements in emission contracts because the market anticipated less focus on climate change in light of the energy crisis.
- Another example could be a sovereign wealth fund (and large investors in general) that avoids corporate or sovereign debt of entities that are deemed to lack credible carbon plans or are contributing to continued pollution, albeit this will manifest itself mostly on a longer time scale.
- Whilst not strictly a climate risk, we think that reputational damage is another significant trigger of transition risk, as ESG controversies in the press can have an immediate impact on underlying contracts and are particularly relevant to clients with an ESG mandate, but also more generally as the world becomes more ESG conscious. Examples past and potential:
  - Deforestation claims applicable to palm oil, triggering a reaction to exit related futures contracts.
  - Allegations of human rights violations in mining practices impacting metals trading.
  - Backlash post war in Ukraine around ESG investments not meeting ESG social principles, triggering exits from certain indices or products.
  - General reputational risk incurred by offering a cleared derivative product on an instrument that receives negative ESG press or has been the target of “green washing” allegations.

With respect to business risk and collateral replacement risk, we agree that these are likely to play out over longer periods of time, with regulatory trajectory likely to be set with ample notification to avoid any immediate risk on market stability. We do however agree that the long-term viability of CCPs that do not adjust their activities to changes in regulation will be impacted and could result in CCPs lowering risk standards (for instance IM requirements and membership criteria) to gain or maintain market share.

Many of the risks identified under rapid transition risks should also be considered as business risks and are valid considerations that we would strongly encourage CCPs to consider when assessing the impacts of climate risk. We agree that these may be of longer duration and therefore not applicable in a stress test scenario but believe these should nevertheless be considered by CCPs and their supervisors.

In particular, we encourage CCPs to consider whether they have an additional role to play in supporting climate transition, through any of the following measures: stricter audit standards on products deemed ESG, ways of auditing against green washing, publishing information on the carbon footprint of the products they offer, encouraging good investments by providing favorable pricing on the posting of green bonds as collateral. While not as relevant for climate stress testing, this potential responsibility and opportunity to prepare and support climate transition should not be ignored.

In considering the possible scenarios to be used, consideration should be given to assumptions around future business mixes and having consistent sets of scenarios and assumptions to be utilized by EU CCPs. Inconsistent assumptions around CCP business models and transmission of risks from climate change to CCPs could result in differing results across EU CCPs, unrelated to their business model or underlying financial stability.

Overall, we propose to also analyse potential climate related wrong-way risks, i.e. negative correlation between climate related stresses to the CCP and the credit risk of clearing members, large clients or service providers. We consider that wrong-way risk could be an issue for physical risk, transition risk and collateral replacement risk.

For physical risk, the same climate event that could affect a CCP's operations could also affect its members or large clients' operations. These risks are covered by the consultation. Physical risks could however also affect asset prices, leaving open the risk that these asset prices are also correlated with the credit risk of some clearing members or clients.

Similar effects with correlation between asset prices and clearing participants (clearing members and their clients) could be possible for transition risk.

We believe that the effect is less strong for collateral replacement risk. It could be that the same effects that affect collateral prices could also impact the credit quality of some clearing participants, which might lead to the CCP to asking for even more collateral. We however believe this scenario is not as likely as physical or transition risk.

**Question 2a. Is there a way to avoid having to specify the weather event (be agnostic on whether this is a flood or a landslide or a wildfire...)? Please describe.**

For operational risk, we propose to use generic scenarios. Instead of a scenario "a flood of 2 meters in the xyz area" we propose to use a generic scenario "a flood or other weather event that will render one or more data centres unusable". There could also be a distinction between a direct impact on the data centre, i.e. the data centre becomes inoperable or damaged due to the flood on the one hand and blocked access due to the flood on the other. Teleworking practices that have been honed during the COVID crisis might be able to widely mitigate access issues, as long as the IT infrastructure remains operable.

While we would caution against too many granular scenarios, a possible approach could be to look at combinations of timing, location and severity (see paragraph 80 of the consultation) to ensure that scenarios cover a variety of the following:

- *Timing/Warning*: an earthquake with no advance warning would not provide any time to make preparations, like moving staff, transferring data or handing off to another data centre, compared to a hurricane where there is some warning before the storm hits.
- *Location*: whether the scenario covers only a small area (a tsunami that only affects low-lying areas) or impacts a wider geographical area like floods.
- *Impact*: there could be different outcomes in terms of operational disruptions (which could be an impact on data centres, but also affect physical delivery of commodities), or in terms of financial costs resulting from the climate event.

In terms of the exact physical weather event, we would also note that the transmission of the weather event into the financial system represents the most material aspect of financial resiliency of the CCP (beyond immediate physical risks). The underlying assumptions behind pricing, counterparty

resiliency and flow through to capital and liquidity positions of CCPs is most relevant for the industry and will be the most challenging modelling ask.

**Question 2b. Which past events would you point out as relevant, and how relevant is empirical evidence in general in building a relevant scenario?**

For operational risk, there have been a lot of extreme weather events over the last years that could inform scenario generation. Please see under question 1 for a list of physical risk scenarios.

Most of these scenarios/events should already be part of credit stress test scenarios of affected CCPs.

The trajectory of climate change in the future (with the expectation of things likely to get worse) will likely mean that there are not many historical precedents other than the events listed above. It is also unclear whether the known historical events' impact can be used as a source to make projections for the future. However, in the absence of other data, there is no other way of extrapolating future events from historical events, potentially assisted by climate change research. Regulatory guidance could be helpful in this regard, in the sense of application of a widely agreed expected trajectory of future events to standardize expectations around climate stresses.

Another approach could be to analyse risk factors cleared by a CCP and consider how these could be affected by climate events over time. Given that there is limited historical data, a "scenario analysis" on what potentially could happen to risk factors and asset classes might be more helpful.

As a market-based approach, we also propose to analyse the catastrophe bond market: events in relation to which insurance and re-insurance companies issued hedges in the form of catastrophe bonds might also be helpful in identifying potential stress scenarios.

Another proposal could be to review how systematic analysis firms like rating agencies are incorporating climate and ESG factors into their analysis.

We also propose for ESMA to review insurance/re-insurance climate stress models or scenarios by other organisations or businesses. A good starting point could be the "Realistic Disaster Scenarios"<sup>3</sup> used by the insurance and re-insurance industry.

**Question 2c. To your knowledge, what are the available data resources to identify past or potential events (such as geographical maps of flood-paths or historical databases of past extreme weather events)?**

We are not sure if such resources are required, other than for analysis of risk factors (see above under question 2b). Generally, it is more important to look at generic climate events and how these could impact financial and operational risks.

When it comes to physical risk events, various resources already exist and have been used in the context of climate stress tests in other sectors. For example, the publicly available European

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<sup>3</sup> See for instance <https://www.lloyds.com/conducting-business/underwriting/realistic-disaster-scenarios> or [https://www.actuaries.org/IAA/Documents/Publications/Papers/CRTF\\_Application\\_Climate\\_Scenarios.pdf](https://www.actuaries.org/IAA/Documents/Publications/Papers/CRTF_Application_Climate_Scenarios.pdf)

Commission's Joint Research Centre Risk Data Hub provides detailed information on river and coastal floods in Europe (see [9]). Similarly, the NGFS lists on its website physical datasets such as the Inter-Sectoral Impact Model Intercomparison Project for cross-sectoral modelling of the impacts of climate change (also mentioned in the consultation). However, other resources could be relevant in the specific context of CCPs. As covered under question 2b, other data sources like catastrophe bonds and the insurance/re-insurance sector could be helpful.

**Question 3a. How should the assessment of the impact of physical risk on entities to which the CCP is exposed be conducted? (e.g. a questionnaire sent by the CCP to these entities? Any other approach?)**

The assessment depends on whether the analysed impact is operational or financial. Generally, we welcome the proposal of collaborative work and propose to also complement questionnaires with workshops that allow for ideas to flow freely. In terms of climate impact, we note that CCPs for good reasons do not share the location of their BCP sites. Their clearing members will not do so either, for the same reasons. This means that a lot of this analysis needs to be done generically.

For operational impacts, as proposed above under question 2a, we believe that a generic event approach would be the best, even though we appreciate that data coming out of this approach cannot easily be aggregated. For instance, the same flood will not affect all or many CCPs or clearing participants that are part of the analysis. We would also think that impacted firms should integrate these risks into their BCP, instead of reporting them under a stress test.

We also propose to not only focus on availability of data centres, but also on physical settlements, which could have knock-on effects should these processes be impaired.

The impact of physical risk on CCPs, like asset price changes due to climate events (see examples listed under question 1, with one prominent example being the Texas Freeze from early 2021) is easier to model centrally and lends itself better to a classic stress test.

As mentioned above, a risk factor audit could be helpful. Another indicator of risk could be the margin models themselves: risk factors that are highly correlated to climate factors are likely to attract higher margin rates in the future.

**Question 3b. How would you calibrate market moves corresponding to a given scenario of physical risk? In particular, would you use past events that had an impact on financial markets?**

We propose generally to use the same processes that are currently used for generation of hypothetical scenarios.

Climate stresses cover a wide range of shocks: some are already part of history (from seasonality data for certain agricultural assets to stresses we have seen – the Nasdaq Clearing default and the Texas power price increase). It is however unclear how extreme such stresses will become in the future.

The Texas Freeze has shown how huge these spikes could become. From current knowledge, it is unclear whether this was an outlier, driven by extreme weather in conjunction with a jurisdiction

that uses minimal regulation and had no links to the rest of the US power grid and therefore no backup, or if this was an example of extreme events that will appear more regularly in the future. Ultimately there is not enough data for modelling.

Stresses from physical risk can also affect several market participants at the same time. For instance, a flood or tsunami might not only affect CCP operations but will also affect clearing participants at the same time, both operationally and financially. Therefore, climate risk scenarios should assume that there is a higher and stronger correlation between loss scenarios and that both operational and financial risks can be triggered at the same time.

We encourage CCPs to not only use such scenarios for stress testing, but also consider whether there could be the need for climate shock related margin add-ons.

As mentioned under question 2b, regulatory guidance could be helpful in this regard, in the sense of application of an expected trajectory of future events.

**Question 3c. Would this only affect energy/commodity prices, or would other asset classes be impacted? Please elaborate.**

We believe that the main drivers are likely energy and commodity prices, but there could also be second order effects, like rising oil prices affecting costs in other industries. Also, a power outage caused by a weather event could affect trading in all products.

Extreme weather events might affect physical resources (commodities) directly, but also the government bonds of affected countries. While focus is on climate, wars over scarce resources (including water – an indirect climate event) will also affect government bonds and local equity markets.

It will also likely impact real estate which is also used as security for mortgage lending for banks and potentially require payout by insurers. Factories and supply chains could also be impacted in a similar way to what we saw with the COVID pandemic.

There could probably also be longer term economic impacts that will affect and impact the commercial economics of trading across asset classes.

**Question 4a. Do you agree that the process presented above would address the confidentiality issue related to the location of CCP facilities?**

We agree with the confidentiality issue identified in the report, both in general and also for collecting indirect data from clearing members and other FMIs.

We refer to our proposal to use generic stresses. The assumptions in step i) are similar to this proposal, albeit they include more geographical information.

Step ii) makes sense, but only covers operational risk outcomes, which should be covered by the CCP's BCP and not financial risks. Financial risks can however be more easily covered like in normal ST.

The concept of a common map makes sense but in keeping with the agnostic approach discussed in Q2, rather than specifying the type of event in an area, it would make more sense to categorise areas into timing, location, and impact (see question 2a). For example, areas on a known tectonic fault plane could be categorised as “Immediate, Large Scale, Long”, and a low-lying area that could be at risk of a Tsunami could be “Medium, Localised, and Long”.

**Question 4b. In particular, what challenges would you expect for step iii.?**

Step iii) will not solve the confidentiality issue between CCPs and clearing members: neither will typically share locations of backup sites. It will also be difficult to find an independent third party that has cyber defences sufficiently strong so participants to the exercise are comfortable sharing such critical information.

The most useful output would be to see if there were some geographical areas which the CCP assessed as a different risk level, however the confidentiality challenges would mean that information could not be captured and assessed independently to be used for other climate stress assessments, unless ESMA will centrally request and collect this data.

**Question 4c. Would you include in step iii a question from the CCP to the participants of how the market moves of the scenario would affect them, or would the question focus on the operational disruption? (please justify)**

Operational and financial scenarios are very different. Financial scenarios could be treated like any other financial stress, unless there are outcomes where these scenarios would inflict material losses to members that could trigger default or at least significant credit downgrades. Therefore, both questions are relevant.

This could be an area where CCP climate stress testing and bank stress testing interact, which could warrant more analysis.

**Question 4d. Is there an alternative process that would avoid disclosing sensitive proprietary information? Please describe.**

See our proposal above under question 2b to use generic scenarios, although we acknowledge that these are difficult to aggregate.

Another solution to the confidentiality issue could be that clearing members provide information anonymously.

Question 4e. How would the market moves associated with the physical event be reported in this framework (while ensuring anonymity and confidentiality needs)?

We propose a clear distinction between operational and financial stresses in reporting of the climate stress testing. Operational and financial stresses will ultimately have different outcomes: strengthening of the CCP's BCP versus an increase in CCP resources. Depending on the risk, this could be the default fund (if the loss is in conjunction with a member's default), insurance or additional CCP equity.

Question 5a. What is your view on the plausibility of sharp market moves materialising in a time frame commensurate with the liquidation horizon of a CCP, as the sole result of transition risk? (if needed, please distinguish between types of market moves, e.g. first order price move affecting a large set of contracts vs. specific changes in a basis risk between two related contracts).

We agree with ESMA's expectation (see table on page 20 including the example of Nickel price shocks due to a new extraction method) that transition risk can emerge during the timescales relevant for CCP stress testing. While the underlying process might likely be slow (regulatory rulemaking or developing of new engineering processes), the publication could affect the awareness in the market from one day to the other. In the area of regulation, we would expect regulators to manage this process to avoid cliff edges though. Please find a full list of examples for transitions risk under question 1.

We agree that these events can affect both individual assets (like Nickel in the example on page 20 of the consultation), but also correlations between assets that were thought to be stable but are changed due to new technologies and other developments.

CCPs should be careful when developing scenarios to ensure that no overlapping capital and liquidity requirement are created. Some historical events for instance could be already in the lookback period for margin model.

Question 5b. Should the stress test use scenarios with a narrative on a possible change of policy and/or technology in order to identify the root cause for the transition risk?

This is similar to our thoughts on physical risks as there is likely not too much data available. If for instance nuclear fusion becomes feasible and affordable, the impact on gas, oil and coal might be significant. But there is no data on how such a scenario would develop. Potentially the best benchmark would be to use historical scenarios of transition risk, but for regulators also to provide guidance how such scenarios should be built. Ideally this guidance would be applied globally. As there is no history, there should be a wide agreement in society on what kind of events we want to plan with.

Question 5c. If so, how would these be crafted? Please provide one or a few examples.

Given that there is not a large body of historical scenarios available, we propose scenario analysis, i.e. the identification what event could affect a certain risk factor. For products like oil this could be quite obvious, for other product classes not so much.

This could be complemented by an analysis that looks at technologies (see the example of cold fusion under the question above) and an analysis how these technologies could affect past prices.

Question 5d. If not, should the analysis consist of a list of potential areas of vulnerability? How would this be done? (e.g. should there be a list of assets exposed to a given technology, should this be based on a survey of all technologies currently under development and the assessment of what they could replace if they suddenly became viable?). Please elaborate.

These proposals should be explored more, even though they do not solve for quantitative impact. Also, many technologies that will make a difference might not be public, or public technologies might be overhyped (start-ups' incentives are to paint their product in very rosy pictures).

In cases where the timeframe is longer than the margin period of risk (MPOR) or the stress period of risk (SPOR, which could be longer than the MPOR due to stressed markets) of a CCP, for instance due to lead time to scale up production/expansion of any new technology, such an event could be captured as a business risk rather than a rapid transitory risk. In this case a survey could be a viable approach to this.

Question 5e. If no explicit root cause is modelled, how would you select and calibrate the market moves resulting from transition risk?

See above under 5b.

Question 6a. Which sectors should be considered: only energy, all commodities, or all asset classes (for example by considering that some securities are issued with an ESG rating different from others)?

While we agree with ESMA that business risk is a crucial and generic risk for CCPs that will be closely watched by CCPs, we believe that business risk is not a risk that will develop within the time horizon relevant for CCP stress tests.

Should ESMA want to explore business risk further in relation to climate stress testing, we agree that energy and commodities would be most affected. Even though there could be knock-on effects that impact interest products and equities, most CCPs clearing these products clear a wide range of products and this diversification will likely mitigate the business risk that some of their products cleared might not be sought after by investors.

There might be business risk linked to rapid transition risk: Should there for instance be a breakthrough in terms of clean energy like nuclear fusion, business risk for CCPs clearing brown energy could crystallise very quickly, even though still in a longer timeframe than the MPOR.

We also note that business risk of a CCP is unlikely to be a systemic risk, as long as CCPs have credible wind-down plans.

While we acknowledge that the scope of this consultation is limited to climate risk, for identification of assets that could be affected over time, other areas of climate change research, for instance the impact on biodiversity in an approach similar to that outlined by Banque de France paper “Banque de France, Biodiversity loss and financial stability: a new frontier for central banks and financial supervisors”<sup>4</sup> could be utilised.

We also note that reputational risk related to climate could have an impact, also for business risk.

**Question 6b. Should the business risk be assessed across CCPs by using a common scenario for the reduction in activity for a given type of asset (e.g. a decrease in the use of oil futures contracts)?**

While we generally agree with the same risk to be assessed across CCPs, we do not think business risk is applicable in the short timeframe relevant for CCPs (please see above under question 6a).

It would make sense to maintain consistency in order to be able to compare across CCPs however, even if this will be very difficult given the diverse product set cleared by EU CCPs.

**Question 6c. If so, how would the scenario be calibrated (e.g. if a given path is assumed for the consumption of a commodity, how would this be turned into a decrease in the activity for the future contracts referencing this commodity)?**

See above under question 6a, we do not think business risk is applicable in the short timeframe relevant for CCPs.

**Question 6d. What should the time horizon of this analysis be?**

As set out above under question 6a, we do not think business risk is applicable in the short timeframe which is relevant for CCPs.

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<sup>4</sup> [https://publications.banque-france.fr/sites/default/files/medias/documents/bdf237-7\\_en\\_biodiversity\\_vf.pdf](https://publications.banque-france.fr/sites/default/files/medias/documents/bdf237-7_en_biodiversity_vf.pdf)

**Question 6e. What confidentiality constraints would you see for the publication of results?**

Assuming this is a risk that needs to be covered at all, we do not see confidentiality being an issue as the products cleared by CCPs are public and the size of each market is also well known. Therefore, if the both the products cleared by a CCP and the assumptions which product are expected to be less valuable or more volatile are public, the analysis should not require significant confidential data.

**Question 7a. In your view, are there any other climate-related events that could force clearing members to post new collateral to a CCP?**

We believe that it will be very likely that there might be climate related events that could lead to clearing members to have to post new collateral to a CCP but believe that these events will likely develop over a longer time horizon than the margin period of risk of a CCP. We also expect for CCPs to manage such a situation proactively by reviewing eligibility of assets that might be affected by climate events on a regular basis and to either reduce eligibility or increase haircuts in a controlled manner instead of contributing to procyclicality.

Collateral replacement risk could be mitigated by either a wide, diversified list of eligible assets for collateral or a very restricted list of eligible assets that consists exclusively of local high quality liquid government securities or cash. A CCP could also enact concentration limits, not just by the usual categories, but also by explicitly including ESG categories. For instance, similar to current concentration limits where a CCP does not accept more than x% of assets from a certain country, it could also restrict the aggregate amount of assets sensitive to coal.

As mentioned in relation to business risk (see question 6a), there could however be rapid transition risks that could affect a particular asset, e.g. an equity or bond of a company that is involved in brown energy) if there is a technological breakthrough that renders the technology used by the company in question obsolete. Should this happen, this equity might lose value within a very short space of time and would force clearing participants to post more collateral. While this is a risk, we note that CCPs generally mitigate this risk by having sensible concentration limits. There might however be a requirement to add climate considerations into this concentration limit framework, for instance by limiting collateral linked to brown energy, or to a certain technology.

Another potential event could be a significant negative reputational impact relating to the use of a specific type of collateral.

Over time, climate events and the impact on certain collateral could lead to changes in CCP policies, for instance increased haircuts, reduced eligibility or smaller concentration limits.

**Question 7b. Should this type of climate risk only be applied to collateral or would the CCP's investments be subject to the same type of risk?**

In principle this risk would be applicable to both, but we note that requirements for CCP investments under EMIR are very restrictive - mostly government bonds. These assets are likely not sensitive to climate shocks, unless there would be an (so far unseen) climate event that would reduce the credit worthiness of a large country. This would have to be a very large event. The floods in 2021 in

Germany did not affect the value of government bonds materially. The COVID crisis (admittedly not a climate shock) however caused finances of many economies to become stressed.

**Question 7c. Should the loss of value and/or the increased market volatility of the securities be taken into account? If not, please justify.**

We believe that CCPs should generally take all risks into account that might affect the value or volatility of any asset the CCP accepts as collateral or invests in. While well managed CCPs do this already, there could be scope to extend this framework by explicitly including ESG related risks. A risk factor audit as proposed under the other climate risk types could be helpful here too.

We note, however, that the timeline for collateral replacement risk would likely be longer than the margin period of risk of a CCP.

**Question 7d. What would be relevant climate-related information to use in order to identify which assets may need to be replaced?**

Our responses above focus mostly on day-to-day risk management of a CCP. For a stress test, ESMA could identify groups of assets that are likely sensitive to the same climate shocks, for instance by grouping similar assets (e.g. oil producers) together and define potential short-term shocks, which then could be used by CCPs to estimate, based on the collateral of this type it is holding, how much of this collateral would have to be replaced, or how much additional collateral would be required. As mentioned above under question 7c, the timeline for collateral replacement risk is likely longer than the margin period of risk of a CCP.

The drivers for business risk are similar as the drivers for collateral replacement risk: in both cases assets that used to be valuable, traded and cleared frequently will no longer be valuable to market participants, which could lead to both reduced volumes (business risk) and reduced value or higher volatility (collateral replacement risk). With this in mind, the comments made under question 6a will mostly apply here as well.

**Question 7e. What types of assets would be concerned and how would you identify an asset as being potentially affected by climate-related changes in investor preferences in the future?**

Please see above under question 7d: ESMA could identify assets that are likely sensitive to climate shocks, for instance by grouping similar assets (e.g. oil producers) together and define potential short-term shocks, which then could be used by CCPs to estimate, based on the collateral of this type it is holding, how much of this collateral would have to be replaced, or how much additional collateral would be required.

In terms of which assets would be concerned, a lot of the thoughts in this consultation apply – each asset might be affected by physical risk (direct climate impact on the issuer of an asset), any

potential wrong way risk between underlying clients & the asset provided as collateral or transition risk (the asset no longer sought after by the market due to regulatory or technological change).

As per question 7d, assets with a large quantum of negative impact on biodiversity would be the likely assets to be affected by climate related changes in investor preference.

**Question 7f. Should the outcome be just a disclosure of the concerned assets by CCP; or is there a quantitative impact (e.g. “XX bn of bonds and YY bn of equities would need to be replaced in the next ZZ years”)?**

We remark that the time horizon of “ZZ years” is not consistent with the time horizon used elsewhere in this consultation, which is linked to the MPOR of a CCP. While it is not unreasonable to look at what collateral needs to be replaced over the next years, potentially as a separate exercise, it will be important to be very clear which risk is linked to which time horizon and how these risks and impacts are aggregated if different time horizons are used.

**Question 7g. What should be the time horizon of this analysis?**

See under question 7f: we propose for the time horizon to be consistent across the stress test, i.e. in line with the MPOR or the SPOR of a CCP. It might be helpful to identify longer-dated developments, but these would have to be aggregated and reported on separately.

**Questions 8 to 15 on existing and planned CCP practices**

We refer to the submissions of our CCP members.

## **About ISDA**

Since 1985, ISDA has worked to make the global derivatives markets safer and more efficient. Today, ISDA has over 980 member institutions from 78 countries. These members comprise a broad range of derivatives market participants, including corporations, investment managers, government and supranational entities, insurance companies, energy and commodities firms, and international and regional banks. In addition to market participants, members also include key components of the derivatives market infrastructure, such as exchanges, intermediaries, clearing houses and repositories, as well as law firms, accounting firms and other service providers. Information about ISDA and its activities is available on the Association's website: [www.isda.org](http://www.isda.org). Follow us on Twitter, LinkedIn, Facebook and YouTube.

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