GREEN
CLIMATE
FUND

**Meeting of the Board**
17 – 20 July 2022
Incheon, Republic of Korea
Agenda item 6

**GCF/B.33/Inf.16**

18 July 2022

# Matters relating to risk management


**Summary**

At the request of the Co-Chairs, this document sets out information relating to:

(a) The status of accreditation master agreements which cannot be signed as a consequence of the lack of RMC;

(b) The draft policy to minimize the effect of currency fluctuation on the commitment authority of the Fund (the "Policy") – the draft Policy is contained in Annex I; and

(c) Matters relating to the foreign exchange commitment risk buffer in light of the requirements set out in the Funding Risk Policy adopted by the Board in decision B.19/04.

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# I. Introduction

1. To date in 2022, the Risk Management Committee of the Board ("RMC") has not been constituted. This has created certain bottlenecks with respect to GCF's programming efforts and increased risks resulting from fluctuations in foreign change rates.

2. At the request of the Co-Chairs, this document sets out information relating to:

(a) The status of accreditation master agreements which cannot be signed as a consequence of the lack of RMC;

(b) The draft policy to minimize the effect of currency fluctuation on the commitment authority of the Fund (the "Policy") – the draft Policy is contained in Annex I; and

(c) Matters relating to the foreign exchange commitment risk buffer in light of the requirements set out in the Funding Risk Policy adopted by the Board in decision B.19/04.

# II. Accreditation Master Agreements

3. In order to complete the accreditation or re-accreditation process by having a signed and effective accreditation master agreement ("AMA"), decision B.12/31 provides that "the Executive Director will determine, in consultation with the risk and legal teams, and the [RMC], whether or not a change is considered substantive on a case-by-case basis and would require Board approval."

4. Prior to B.32, the Secretariat had reached agreement on AMAs with 6 accredited entities (4 new and 2 re-accredited) at the working level. The AMAs were ready to be submitted to the RMC for its no-objection review. However, as the RMC had not been constituted, the AMAs are unable to proceed with the requisite RMC reviews, therefore delaying the GCF and accredited entities from concluding the accreditation process and fully engaging with GCF for programming.

5. With certain GCF policies[1] coming into effect in May 2022, the 6 AMAs that have been agreed on a working-level, but which are yet to be signed and made effective, need to be re-opened in order to reflect the relevant newly effective GCF policies. The Secretariat expects that it will be able to reach a working level agreement on the AMAs, which will incorporate these policies, in July and August 2022.

6. In addition to these 6 AMAs, the Secretariat expects it will be able to reach a working-level agreement on a further 5 accredited entities (2 new and 3 re-accredited) in the third quarter of 2022, some of which have funding proposals that could be presented at B.34. These AMAs similarly cannot be concluded without RMC constitution per the current AMA approval process, also hindering the AEs from fully engaging with GCF and programming.

# III. Policy to minimize the effect of currency fluctuations on the commitment authority of the GCF

7. The purpose of the Policy is to define how the GCF manages the risk to which its commitment authority is exposed because of fluctuations in foreign currency exchange ("FX") rates.

8. The commitment authority, or the level of resources currently available for funding decisions, refers to the total amount of actual cash in the GCF Trust Fund plus the promissory

[1] Revised Environmental and Social Policy, Integrated Results Management Framework and the Evaluation Policy.

notes deposited in a designated custody account, minus net funding commitments (cumulative funding approvals minus cash disbursed).

9. As part of its Funding Risk Policy (Decision B.19/04, paragraph (a) (iii) and annex VI) GCF recognizes FX risk as the risk of incurring losses in the value of contributions due to FX rate fluctuations.

10. This policy document has been developed pursuant to decision B.BM-2021/03, which requested that:

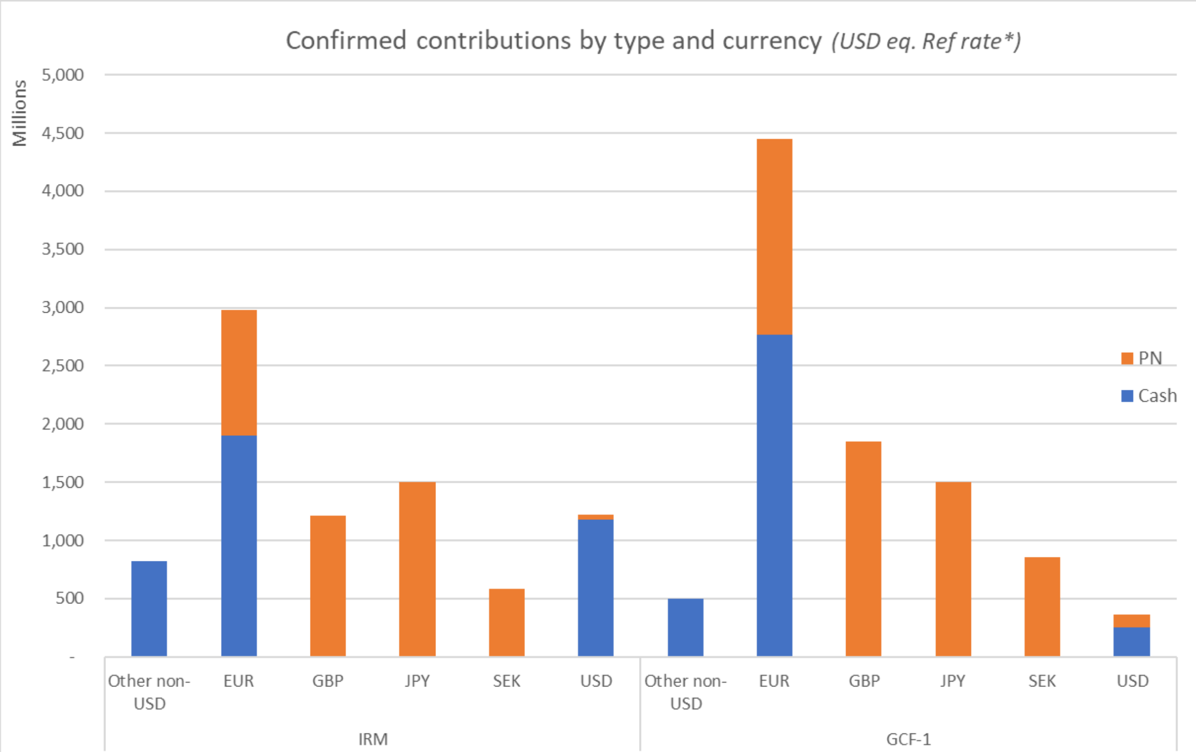
(a) The Secretariat, under the guidance of the Budget Committee, and the Risk Management Committee, to develop a policy to minimise the effect of currency fluctuations on the commitment authority of the Fund and to present it for the consideration by the Board at its thirtieth meeting; and

(b) The above policy recommendations should carefully consider that the resources used for hedging should be justified by the benefits of hedging.

## 3.1 Policy Rationale

11. Due to the constantly changing nature of FX rates and the schedule of payments/encashments over several years, the USD equivalent value of the non-USD denominated contributions of the commitment authority will vary over time, resulting in increases or decreases in the USD equivalent of the commitment authority, to which the Fund is exposed. These variations may be substantial especially in periods of high FX rate variability and affect negatively or positively the amount of funds available that can be invested in the Fund's projects and programmes. Therefore, leaving foreign exchange risk unhedged could adversely affect GCF financial resources and confidence in its corporate planning.

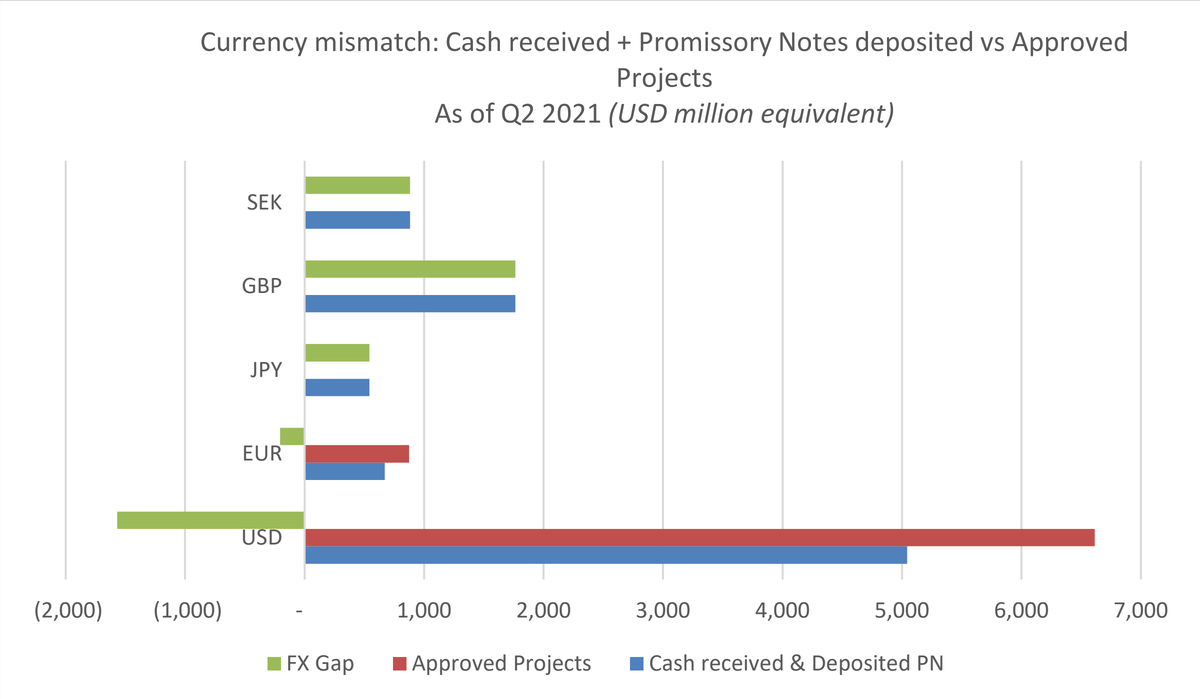
12. The absence of a formal FX management policy leaves the GCF exposed to potential adverse effects of currency movements particularly because a substantial portion of the contributions from the Fund's first replenishment is in the form of non-USD promissory notes ("PNs"), - as it was the case for the Fund's initial resource mobilization. As a matter of fact, due to their specific terms and conditions, promissory notes are subject to currency fluctuations (see paragraph 11).




**Based on the reference exchange rates established for the Pledging Conference (IRM) and the First Replenishment (GCF-1)*

13. GCF functional[2] and presentation currency is USD. GCF expenditures and projects financing are mostly USD, with some in EUR. On the other hand, as per the GCF Policy for Contributions (decision B.24/02), contributors may make contributions in major freely convertible currencies including the GCF holding currencies (USD, Euros, Yen, GBP). Although GCF receives some contributions in USD, a substantial proportion of the total contributions are denominated in non-USD currencies. The main currencies are EUR, GBP, JPY and SEK. As a result, the USD equivalent value of the contributions denominated in non-USD currencies may vary over time, resulting in increases or decreases in the overall USD equivalent value of the commitment authority, to which the Fund is exposed.

[2] International Accounting Standard 21 (IAS 21) defines functional currency as "the currency of the primary economic environment in which the entity operates". The same Standard defines presentation currency as "the currency in which the financial statements are presented".




14. The objective of this Policy is to set out the approaches by which the GCF will seek to manage its FX risk exposure to minimize the effect of currency fluctuations on the commitment authority of the Fund.

15. The commitment authority, or the level of resources currently available for funding decisions, refers to the total amount of actual cash in the GCF Trust Fund plus the promissory notes deposited in a designated custody account, minus net funding commitments[3] (cumulative funding approvals minus cash disbursed).

16. This Policy does not address the FX risk associated with the following exposures since they are not recognized in the commitment authority i.e., (a) pledges, (b) contributions through cash not yet received and promissory notes not yet deposited under the signed agreements/arrangements.

17. The Secretariat can decide whether the non-USD contributions received should be converted to USD. In practice, upon receipt, a portion of non-USD cash may be held in holding currencies to maximize natural hedging. The remaining exposure is usually immediately converted into USD (to match the currency of approved projects) at the prevailing daily rate using FX spot transactions, thus neutralizing the effect of unwanted movements in exchange rates after the conversion date. The Secretariat recommends maintaining this FX hedging approach.

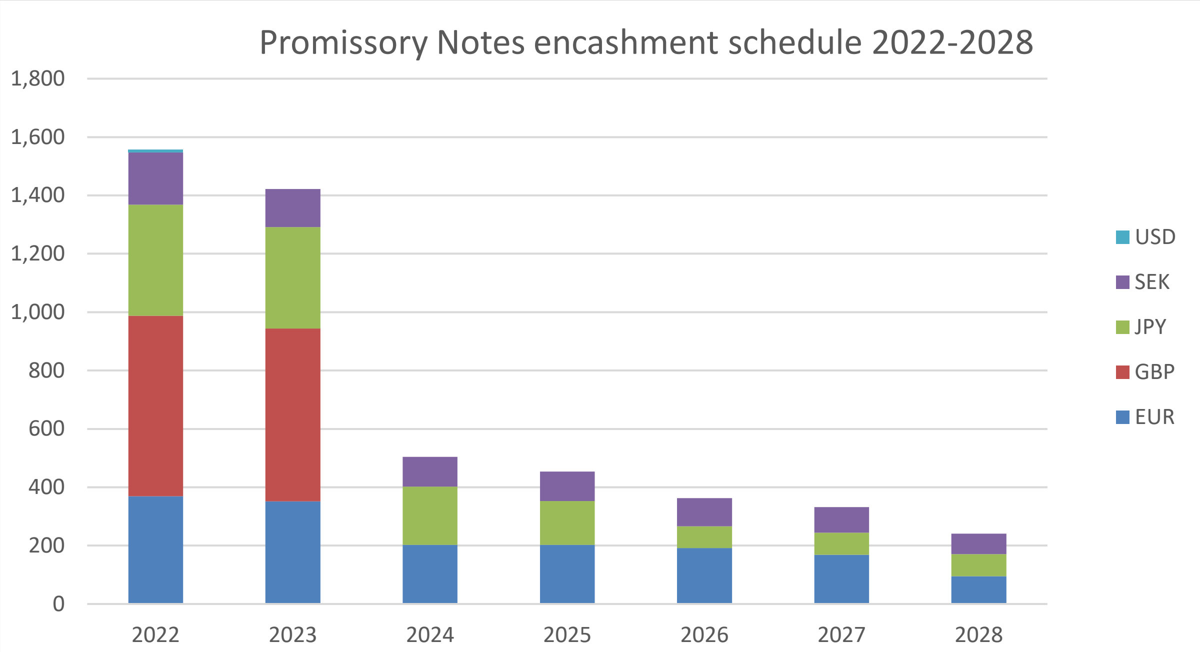
18. Non-USD promissory notes deposited are the main FX risk driver of the commitment authority of the Fund because:

(a) They are exposed to FX risk until they are encashed and converted into USD.

(b) Their encashment schedule usually runs over 9 years which may lead to significant swings in the actual value of each encashment.

[3] Funding decisions include Board decisions on funding proposals, the Readiness and Preparatory Support Programme, the Project Preparation Facility, accredited entity fees, the administrative budget (including for the Board, independent units, and Trustee) and the foreign exchange commitment risk buffer, minus the disbursed amounts.

(c) As of November 2021, the outstanding amount (IRM + GCF-1) of promissory notes to be encashed (excluding promissory notes not yet deposited) from 2022 until 2028 is USD (equivalent) 4,872 million[4] of which 99.8% is in non-USD denominated currencies. This does not include promissory notes to be deposited.




19. To reduce the risk associated with exchange rate fluctuations on its commitment authority, GCF may perform hedging activities using financial instruments.

20. In formulating this Policy, the following key objectives were considered:

(a) Minimizing the effect of currency fluctuations on the commitment authority: By adopting an effective Policy, GCF can expect to maintain greater consistency and predictability and reduce the impact of unfavourable foreign exchange rates.

(b) Identification and Effective Management of Financial Risks: As per the Component II of its Risk Management framework, "overall risk appetite for FX risk is moderate". Effective risk management within the Policy requires all risks to be identified, quantified, assessed, and actively managed in accordance with prudent risk management policies and limits.

(c) Compliance with the Fund's financial risk governance:

(i) The Board will approve the Policy and authorise its implementation within the controls, authorisation and reporting structures laid down in the Policy.

(ii) The Risk Management Committee shall also monitor and review the FX risk management and internal control systems and the Secretariat's process of reviewing.

(iii) The Secretariat shall manage all implementation aspects of FX risk management. The Secretariat will be responsible for ensuring that clear objective measures of performance leverage off the Policy, and that appropriate hedging strategies, consistent with the Policy, and transparent mechanisms for accountability and reporting are adopted. KPIs could also be used to ensure that the Policy is being implemented as planned. For example, the relevant KPIs could include the gross

[4] Of which 986 million of PN deposited by the UK not yet encashed and due by end of 2023 theoretically

FX exposure, net FX exposure (i.e., after hedging), cumulative FX revaluation impact to date, etc.

21. This Policy shall be a practical tool to meet actions set out in the Updated Strategic Plan for the Green Climate Fund: 2020-2023 (endorsed pursuant to Decision B.27/06) to "Ensure predictable management of commitment authority" (paragraph 32(b) of the Updated Strategic Plan).

22. Pursuant to the Board mandate set out in decision B.BM-2021/03, the scope of this Policy is limited to minimizing the effect of currency fluctuations on the commitment authority of the GCF. Nonetheless, as the future operations of the GCF are expected to become more and more diversified and sophisticated e.g., local currency financing, mismatches between the financial profile of assets and liabilities in terms of currencies denomination, maturities and interest rates, the potential financial risks, to which the GCF will be exposed, will also increase. Therefore, the Secretariat, under the guidance of the Risk Management Committee, may pre-emptively consider potential options for managing and mitigating such emerging financial risks, including supplementary hedging approaches and policies to address foreign exchange and interest rate risks.

## 3.2 Analysis of policy proposal

### 3.2.1. Policy proposal

23. As set out in document GCF/B.BM-2021/02 titled "Initial analysis of options to minimize the effect of currency fluctuations on the commitment authority of the GCF", four available options detailed below have been considered:

(a) Option 1: Natural hedge;

(b) Option 2: FX commitment risk buffer;

(c) Option 3: Hedge in the FX market; and

(d) Option 4: Using Euro as accounting base currency.

24. GCF's approach to managing FX risk shall first consider natural hedging to achieve the most cost-efficient hedging strategy. A natural hedge is when the currency of cash inflows can match with cash outflows to limit foreign exchange exposure. In principle, the Fund may disburse in its four holding currencies (USD, GBP, EUR, JPY) and is already applying this option, using EUR and USD denominated contributions to respectively finance EUR and USD projects approved by the Board. Nevertheless, natural hedging remains limited because the anticipated disbursements under GCF projects/programmes and other GCF expenditures are mainly denominated in USD.

25. Using EUR as the accounting base currency instead of USD is not a sustainable option to minimize the effect of currency fluctuations on the commitment authority of the GCF because:

(a) GCF uses IFRS as its accounting standard. As per the IAS 21 the functional currency is the currency of the primary economic environment in which the entity operates. Normally, it's the currency in which the entity makes and spends money. In the case of GCF, 37% of the IRM and GCF 1 pledges were made in EUR. On the other hand, about 90% and 10% of the GCF approved funding till date is in USD and EUR respectively. Given the balance is tilted towards the USD, under the IFRS GCF need to maintain USD as an accounting currency. This matter could be revisited if the currency mix of the contributions and/or portfolio changes significantly during the GCF-2.

(b) Converting all the receipts into Euro before making the disbursements would also lead to increasing operational costs and constraints, particularly with regards to unbalancing the natural hedge. The Euro investments currently generate negative interest and hence keeping the Euro will also negatively impact the investment income.

(c) GCF cash outflows are primarily and structurally in USD i.e., for projects and business plan expenditures. Moreover, the Fund does not anticipate the USD demand for programme funding to markedly decrease soon.

(d) It would not address the FX risk arising from non-EUR currencies.

26. In compliance with the Funding Risk Policy, GCF also currently holds a FX commitment risk buffer (Q1 2022: USD 170 million) to act as:

(a) A reserve to cover currency mismatch between the matched source of funds and the underlying committed investment.

(b) A mitigant against the Fund solvency risk. Solvency risk refers to the Fund's inability to meet its financial commitments due to a shortfall in its available funds relative to its commitments.

27. Therefore, the purpose of this buffer is to address solvency risk and not to cover FX risk exposure on the commitment authority of the Fund. However, the FX commitment risk buffer will continue to be used, particularly to address the FX risk relating to the remaining currency exposures after implementing other recommended options referred to in the Policy.

28. Recognising the shortcomings of the above options, the proposed solution to minimize the effect of currency fluctuations on the commitment authority of the GCF, after applying natural hedging, is to make use of derivative financial instruments to hedge a portion of the net remaining exposure in non-USD currencies. At the time of hedging, FX derivatives will enable the GCF to "lock-in" the USD equivalent value of future PN encashments (usually up to three years forward), therefore ensuring greater stability and predictability of the value of the commitment authority, while retaining as much exposure to the FX rates as is compatible with the protection required. The Policy sets out the principles, roles and responsibilities applied to GCF hedging activity.

29. The proposed Policy addresses the following matters:

(a) The Secretariat's approach to managing FX risk is to first try to offset sources and uses of funds for a given currency to achieve the most cost-efficient hedging strategy (natural hedging). Only after optimizing the natural hedge will the resulting net position for a given currency be categorized as an FX exposure to be actively managed, including through the authorized FX hedging instruments in accordance with the Policy.

(b) The resultant net exposure due under contributions agreement shall be hedged as follows:

(i) Cash contributions received: up to 100% of the exposure arising upon receipt using FX spot contracts.

(ii) Deposited promissory notes: up to 75% of the exposure arising in the next 3 years, having considered track record and expectations in the realisation of contribution agreements, using FX forward and swaps contracts. The Secretariat may start with a 50% hedge ratio (ratio of the value of the proportion of a position that is hedged to the value of the entire position) to limit potential contingent costs and build up experience.

(c) The FX hedging instruments authorized are:

(i) FX Spot contracts – the purchase or sale of a foreign currency for immediate delivery. This instrument is often used by the Secretariat to immediately convert one currency into another at the prevailing daily rate.

(ii) FX Forward contracts - the purchase or sale of a foreign currency at a set date in the future. This instrument will be used when the Secretariat knows that they will need to convert one currency into another at a future date.

(iii) FX Swap contracts - the exchange of one currency for another now, with the exact opposite transaction defined in the future. This instrument may be used by the Secretariat for liquidity and bridging the gap when the GCF has received funds earlier or later than the date of maturity of the foreign exchange forward contract.

30. The following guidelines will apply to the GCF's hedging activities:

(a) No speculative trading. Speculative trading refers to the act of conducting a financial transaction that has a high potential of gaining value but also a high risk of losing value. GCF does not undertake speculative positions on movements in foreign currency exchange rates. A hedging contract must only be executed to hedge a foreign exchange risk.

(b) Delegation of Authority – The Secretariat will have the authority to execute and approve foreign exchange hedging within the constraints of the proposed Policy. The Secretariat may decide to outsource some or all parts of the execution and management of FX hedges (see Section IV).

(c) Derivatives instruments are not designated for hedge accounting treatment and their fair value changes are not offset against fair value changes on the contributions' receivables. They are recorded on the balance sheet at the current mark-to-market, and monitored on a regular basis, and at least once a month. Mark-to-market is a method of measuring the fair value of a financial instrument based on current market price.

(d) By entering into FX hedging transactions, GCF becomes exposed to counterparty credit risk, which is the risk that the counterparty of a derivatives transaction defaults before the final settlement of the transaction's cash flows and the counterparty will not be able to fulfil present and future payment obligations. To manage counterparty credit risk, GCF may use several mechanisms, including netting agreements, diversification of counterparties, counterparty credit reviews, collateralisation.

(i) Counterparty credit risk shall be primarily mitigated by restricting GCF trading activities to counterparties with credit ratings that are at least investment grade. Credit assessment and evaluation for companies and governments is generally performed by a credit rating agency such as S&P Global, Moody's, or Fitch Ratings.

(ii) Netting is another effective tool to reduce this risk. GCF may undertake multiple trades with a counterparty, some will have a positive value (MTM gain), and some will have a negative value (MTM loss). By netting such positions, the loss can be reduced considerably, and counterparty risk can be reduced significantly. GCF must always enter into such netting agreement e.g., on standard ISDA terms.

(iii) Collateralisation also helps to reduce counterparty credit risk and involves posting high-quality collateral such as cash or liquid securities, reducing net exposure. Posting collateral may also facilitate dealing with counterparties and is usually established two-ways and beneficial to both parties involved. However, it needs complex operational and contractual arrangements to be put in place and would decrease the commitment authority. Considering the pros and cons of collateralisation as well as the accessibility of other tools to mitigate counterparty credit risk, the Secretariat recommends making hedging arrangements with the banks that provide favourable conditions. Should prospective counterparties request collateral, the GCF shall try to establish a pledge right on the cash owned by the GCF instead of collateral delivery.

(iv) Diversification is another practical tool to reduce if not necessarily to eliminate the risk. By trading with multiple counterparties, there won't be a single counterparty with significant exposure, which will imply a single counterparty. To ensure adequate diversification, GCF shall establish counterparty limits.

(e) As stated in sub-paragraph (d) (iii) above, the Secretariat will reasonably try to avoid collateral posting when making FX hedging arrangement with counterparties. Nevertheless, the Secretariat advises that GCF always keep this option available as a risk-mitigation tool and to enable unrestricted hedging capability. Therefore, to address the issue of sourcing collateral, the Secretariat has evaluated the following possibilities:

(i) Using the FX commitment risk buffer is not suitable considering the policy and operational impediments e.g., modification of the purpose of the FX commitment risk buffer, no tangible consistency between the FX commitment risk buffer methodology and potential collateral needs, significant amendments to the Funding Risk Policy…

(ii) Setting up a specific collateral pool consisting of cash and directly sourced from the commitment authority. These segregated funds would provide the necessary flexibility associated with collateral management. On one hand, having collateral posted will decrease the financial resources available for projects financing but on the other hand the FX commitment risk buffer will also decrease simultaneously in a greater proportion since the collateral requirements are deemed to be much lower than the FX commitment risk buffer requirements. The size of the collateral will depend on the characteristics of the hedges undertaken (size, maturity etc.), the volatility of the currencies being hedged and the terms of the ISDA Master Agreement. The trades subject to the collateral agreement are regularly marked-to-market (MTM) and their net valuation is then agreed. The party with the negative MTM on the trade portfolio delivers collateral to the party with the positive MTM. As prices move and new deals are added, the valuation of the trade portfolio will change. Depending on what is agreed, the valuation is repeated at frequent intervals – typically daily under market practice. The collateral position is then adjusted to reflect the new valuation. The process continues unless one of the parties defaults. In terms of potential magnitudes for collateral movements the MTM exposure is typically 1% to 3% of notional principal amounts. Moreover, based on historical data (including the financial crisis of 2008) and the type of GCF transactions, a Value at Risk (VaR)[5] analysis shows that collateral requirement would be highly unlikely to exceed 20% of the notional hedged amount. For example, if one considers that the maximum virtual hedge notional for GCF is around $1.0 billion (based upon the simulation detailed in Appendix 3), the maximum collateral requirement may be between $150,000,000 and $200,000,000. This is an indicative estimation of what GCF could experience in extreme situations i.e., worst 2.5% of cases.

(f) Therefore, to address collateral requirements associated with derivative contracts, which, again, depend upon both parties willing to collateralise their exposure, the Secretariat proposes to create a specific collateral reserve consisting of cash. As long as GCF enters into hedging agreement without collateral calls, the amount of this reserve will remain zero. To cover any collateral contingencies associated with the launch of the

[5] VaR is used as a measure of risk and aims to quantify the worst loss that might be expected over a given period of time, given a specified level of probability (known as a confidence level).

hedging program, the Secretariat recommends setting aside and maintain a collateral reserve amount of $50 million. This amount is deemed appropriate and commensurate with the factors described in paragraph 24. (e)(ii) and the regular and normal changes in the MTM of the projected derivatives portfolio. The collateral reserve will not be replenished each time funds from the reserve are used for the purposes of posting collateral. The Secretariat will monitor the adequacy of the collateral reserve against the collateral needs at regular intervals. The Secretariat can review and modify the collateral reserve amount over time, particularly when markets volatility escalates and/or negative MTM deepens. Any required increase of the level of the collateral reserve (i.e., above $ 50 million) will be submitted to the Risk Management Committee for approval. The cash held within the reserve will be transferred to the receiving party, as when required under the collateral agreement. The funds may be withdrawn from the reserve once the transactions have terminated, or as when the total amount is considered no longer appropriate by the Secretariat First Level (Chief Financial Officer) in agreement with the Second Level (Office of Risk Management and Compliance), or if GCF no longer holds any contracts with collateral calls. The Secretariat will monitor regularly and report quarterly the level of the collateral reserve to the RMC, the Board etc. The Secretariat will closely monitor the risk of large negative MTM of GCF derivative positions and may close out some of the derivative positions, as necessary. The Secretariat may develop internal collateral management guidelines including the collateral reserve requirements.

(g) Since the FX hedging instruments purchased to implement the hedges will be aligned with the payment schedules of promissory notes, occurrences of non-payment, may result in hedging transactions being terminated early. There may be a “breakage cost”, or gain, for GCF which depends on how the prevailing forward rate has changed. At the time of entry into an FX transaction, the size of these breakage costs, or gains, on early termination cannot be predicted, as forward rates can increase as well as decrease, by an unpredictable amount. As an estimate based on historical volatility, the breakage loss/gain to GCF could be anywhere between +/-$5,000,000 and +/-$10,000,000 for a USD equivalent 100 million contract.

(h) To cover the potential losses or gains of early termination of hedging transactions, the investment income earned on undisbursed cash balance of the GCF held with the Trustee will be used. In a highly unlikely scenario where investment income earned is not sufficient to cover potential loss, the Liquid asset portfolio[6] may be used.

(i) The intention is for the FX hedging transactions to be documented using standard form agreements published by the International Swaps and Derivatives Association (ISDA). The 2002 ISDA Master Agreement provides for the waiver of immunities by allowing each party to agree to waive any immunity held by it to the extent permitted under applicable laws. In this regard, paragraph 8 of the Fund’s Governing Instrument states that “The Fund will enjoy such privileges and immunities as are necessary for the fulfilment of its purposes”.

(j) In addition, Article 9(1) of the Headquarters Agreement states that “The Fund and the Property of the Fund, wherever located and by whomsoever held, shall enjoy immunity from any form of legal process, including search, requisition, confiscation, foreclosure, seizure, all forms of attachment, injunction and expropriation whether by executive, administrative, judicial or legislative action, except as provided in this Article and insofar as in any particular case the Fund expressly has waived its immunity in writing.

[6] The liquid asset portfolio is defined as securities, cash or cash equivalents held in Trust or in the GCF’s bank accounts.

It is, however, understood that no such waiver of immunity shall extend to any measure of execution."

(k) If the Fund agrees to the waiver provisions in the ISDA Master Agreement, this would constitute a "particular case [where] the Fund expressly has waived its immunity in writing" under Article 9(1) of the Headquarters Agreement, whereby the Fund would waive all immunity. However, pursuant to Article 9(1) of the Headquarters Agreement and the laws of the Republic of Korea, such waiver would not be effective in respect of any measure of execution. Since the Fund would still have immunity in respect of any measure of execution under the laws of the Republic of Korea, the national authorities, including the national courts, could not force GCF to use its assets in Korea to satisfy the debts of the Fund owed to a hedge counterparty. Consequently, the limited practical value of this waiver may affect the counterparty's assessment of the risks relating to hedging transactions with the Fund and, as a consequence of the risk outlined above, a counterparty may pursue alternative methods of mitigating this risk when entering into FX hedging transactions with the Fund, which may involve higher pricing for the Fund and/or require the Fund to post collateral outside of Korea.

(l) The Risk Management Committee (RMC) will receive a quarterly Hedge Report from the Secretariat. The Hedge Report shall summarise the total hedging in place by counterparty (including the expiry date profile of the hedge book), the mark to market position of that hedging, any new hedging undertaken since the last report. The Board will receive the Hedge Report to be included in the quarterly Risk Dashboard.

### 3.2.2. Policy impact

31. To improve GCF predictability of funding when it approves a project, GCF shall apply FX hedging to reduce the impact of unfavourable foreign exchange movements.

32. Currently, not hedging the deposited promissory notes involves accumulating reserves via the FX commitment risk buffer which has substantial opportunity costs by depleting resources available for projects' funding and limiting GCF's support to developing countries ambitions towards low-emissions, climate-resilient pathways. For a USD equivalent 100 million hedge, the FX commitment risk buffer requirement would decrease by 20 million (as set per the current Funding Risk Policy).

33. On the other hand, hedging may result in an opportunity cost or gain for the GCF in terms of the level of resources currently available for funding decisions. The opportunity cost of hedging with forward can be measured as the foreign exchange gains foregone by locking in the exchange rate in advance. For a USD equivalent 100 million hedge, the sensitivity to ±100bps fluctuation of the FX rate between the FX forward rate and the spot rate at the time of encashment is ±1 million.

34. A backtesting[7] of hedging trades in line with the proposed Policy has shown that GCF's available resources would have been USD 51 million higher for an estimated transaction costs of USD 1.5 million. Over the same period, the actual FX buffer reached USD 170 million (whereas the required risk buffer amount increased to USD 327.5 million).

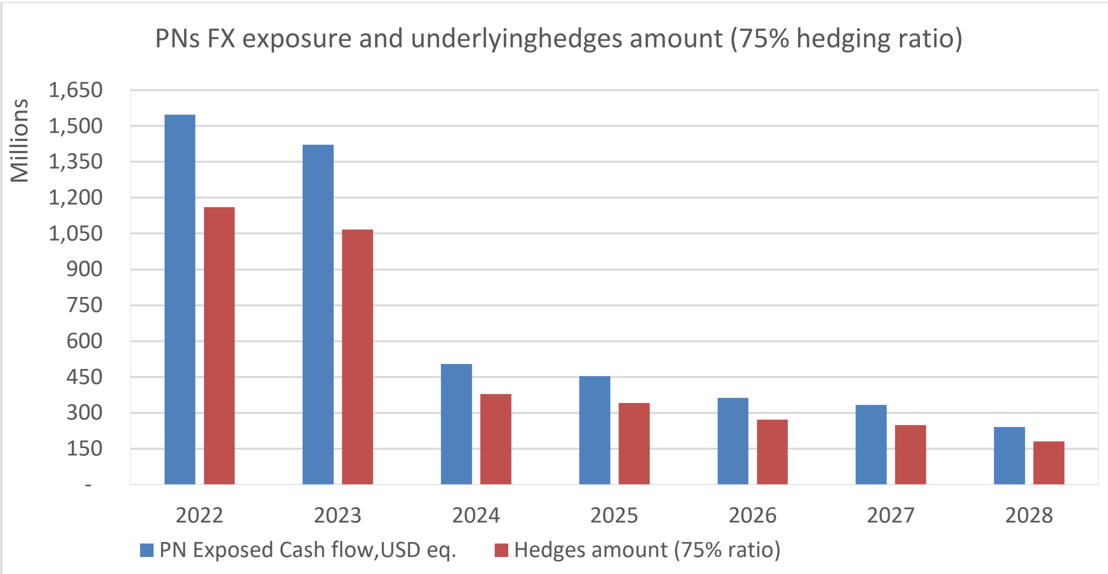
[7] Excluding GBP contributions as they have not been encashed to date

| Hedged Currencies | Number of trades | Average Trade Size USD equiv. Million | % of hedged amount |
|---|---|---|---|
| EUR | 12 | 90 | 37% |
| JPY | 7 | 173 | 42% |
| SEK | 9 | 67 | 21% |
| Total/Average | 28 | 110 | 100% |

| *USD equiv. million* | Value at FX ref. rate | Value at FX encashment date | Locked-in value with hedge |
|---|---|---|---|
| Total | 3,151 | 2,847 | 2,898 |
| EUR | 1,182 | 1,053 | 1,084 |
| JPY | 1,301 | 1,239 | 1,209 |
| SEK | 667 | 553 | 604 |

- Period considered: PN schedule 2015- Q1 2021
- A forward contract is executed 2 years before the encashment date by selling the currency PN and buying USD.
- Assumptions: all PN to be received during a quarter are assumed to be received at the end of the quarter.
- Under this hedging strategy, the total value of PN encashed (2.898M) would have been USD equiv. 51 million higher than the realized encashment value (2.847M)
- Transaction costs and cash collateral requirements may vary depending on the structure of the hedge and counterparty

35. As a theoretical simulation exercise based on 1st of November 2021, the potential exposure[8] from PNs to be hedged from 2022 until 2028 would be between USD 1,547 Million and USD 241 million each year. Should a 75% hedging ratio be applied (before applying any adjustment such as natural hedging or contributors' track record), then the hedged amounts would be between USD 1,161 million and USD 180 million each year. It is worth noting that these USD equivalent amounts may vary over time due to currency fluctuations and replenishment efforts. Moreover, the Secretariat does not expect to be able to hedge any of the 2022 exposure due to the time required for implementing the Policy.




36. As a result of this Policy, GCF shall benefit from:

(a) Reducing volatility of the actual value of the commitment authority

(b) Controlling FX exposures consistent with the GCF's risk appetite statement i.e., "the overall FX risk appetite for FX risk is moderate"

(c) Reducing exposure to potential decreases in the value of future promissory notes encashment due to exchange rate fluctuations

[8] If the UK PN of GBP 447,360 million not yet encashed are equally encashed in 2022 and 2023

(d) Lowering the amount of the FX commitment risk buffer because the hedged portion of non-USD promissory notes encashments will no longer be subject to foreign exchange risk and match the currency of the investment commitments (see paragraph 25).

37. The potential risks associated with this Policy are:

(a) The exposure to risks associated with derivatives contracts such as counterparty credit risk, market risk, and operational risk;

(b) The risk of non-encashment of promissory notes by contributors causing the premature termination of a derivative contract, resulting in a loss.

(c) If GCF is required to post collaterals as part of hedging arrangements, some savings made on the FX commitment risk buffer maybe partially offset by the collateral reserve.

38. Although the purpose of the proposed Policy is to only address the FX risk associated with the commitment authority of the GCF, it is also recommended to authorise the Secretariat to explore further opportunities for managing and mitigating other emerging financial risks such as foreign exchange risk and interest rate risk on all other transactions (such as reflows of funds) in relation to the mix of GCF assets and liabilities.

## 3.3 Operational impact assessment and implementation arrangements

39. This Policy has real or prospective linkages with the following items:

(a) Initial Risk Management Framework and adoption of a risk register (decision B.12/34);

(b) GCF Risk Management Framework (decision B.17/11);

(c) GCF Risk Management Framework (decision B.19/04);

(d) Policy for contributions (decision B.24/02)

40. Effectiveness of this policy requires that FX risk and exposure can be identified, quantified, assessed and actively managed in accordance with prudent risk management policies and limits in a timely manner.

41. Effective execution and management of FX hedging transactions necessitates many steps and appropriate systems including negotiation of hedging agreements, trade execution/confirmation/settlement, regular MtM and reporting as well as a trading platform and a treasury management system.

42. The Secretariat has examined how best to implement the GCF FX hedging program, including best execution, price discovery, operational efficiency (see comparative analysis in Appendix 2).

43. There are 2 approaches for running a FX hedging program:

(a) Direct: all Front/Middle/Back-office activities associated with FX hedging are performed internally by the Secretariat.

(b) Indirect: all or part of Front/Middle/Back-office activities associated with FX hedging are delegated to a third-party. As third-party, the Secretariat has identified 2 alternatives:

(i) Outsourcing to the GCF Trustee

(ii) Outsourcing to an external partner

44. It is expected that the Secretariat will have very little (half a dozen trades per year but potentially substantial size) and plain vanilla FX hedging activity. A simple in-house operation might suffice without a large amount of overheads, staff, and fixed costs. However, for now, the

Secretariat is of the opinion that it is not equipped for an effective and compliant direct FX hedging program, particularly considering the resources, IT infrastructure, and governance required.

45. In an outsourced arrangement, tasks and systems (as described in paragraph #29) are assumed by the provider which in consultation with GCF can build a customised solution across the lifecycle. By outsourcing its FX hedging operations, the Secretariat would particularly benefit from mitigation of operational risk, increased efficiency, and specialist tools.

46. The preferred outsourcing solution would be to work together with the Trustee. Now the Trustee only uses and offers FX Spot to convert non-USD denominated cash payment as they are received. However, the Trustee has confirmed not being able to offer any derivatives products (FX forward, FX swaps) or services (Front/Middle/Back Office) for now. The Trustee could not yet confirm whether it would offer FX outsourcing solutions in the near future and what could be their level of services and requirements.

47. Therefore, the Secretariat advises that FX hedging be executed and managed through an external third-party provider. The choice of the strategic partner will be done be through a selective screening process, including the best execution model for GCF i.e., Agency-based[9], or Principal-based (see comparative analysis in Appendix 2). A dozen commercial banks and FX solution providers (US, Asian, European) have already expressed their interest to become counterparties to GCF, in a capacity or another, and presented their services, requirements, and indicative pricing. Given the liability risks associated with agency contracts, any decision to enter into such contracts is subject to a detailed review of the legal structure and documents proposed to give effect to the structure.

48. Subject to the outcome of the selective screening process, the Secretariat intends to appoint at least one hedging bank / hedging counterparty which must, amongst other things:

(a) have a strong investment grade credit rating from a recognised credit ratings agency (S&P or Moody's); and

(b) strong execution capacity

49. To strengthen financial governance, the Secretariat shall establish appropriate structures, which will include a committee (e.g., Asset & Liability committee) to identify, manage and control GCF FX hedging activity as well as other related financial risks.

50. As a Second Level, the Office of Risk Management and Compliance ("ORMC") may make recommendations in accordance with the Risk Management Framework. The Office of the General Counsel ("OGC") will review the relevant legal documents including ISDA agreements and collateral agreements when applicable. The Secretariat may engage external counsel to advise the GCF on the terms of the relevant legal documentation.

## 3.4 Budgetary implications

51. The aggregated cost of FX hedging using derivatives instruments is determined by the following components:

(a) Direct costs (i.e., measuring transaction costs relative to market prices) which are driven by many factors, including size (notional), tenor, currency pairs, payment frequency, company credit quality, regulatory requirements.

[9] Agency model: the bank acts as a broker for GCF, finding another market participant or multiple participants to take the other side of the trade but, without taking on principal risk themselves.
Principal model: the bank acts as a principal counterparty executing the trade with GCF itself, taking on the risk, which it could then warehouse or lay off via another trade

(b) Indirect costs associated with staffing, tools, external legal expertise

52. The Secretariat has evaluated and compared the indirect cost of each option as follows (only includes tasks and systems that could be in-housed, hence excluding legal fees which in both options need to be outsourced - see paragraph 46 for details):

(a) In-house: Fixed annual cost between $50,000 and $70,000

(b) Outsourced: between 7 and 10 basis points[10] of the total hedged amount e.g., per $ 100 million hedged between $ 70,000 and $100,000

53. The estimated costs of outsourcing FX hedging are substantially higher than the in-house alternative (see Appendix 3 for a detailed comparison). As a matter of fact, as the hedges' portfolio grows, it is expected that the cost difference will increase. As a guide, a $ 500 million trade would cost:

(a) In-house: between $50,000 and $70,000

(b) Outsourced: between $350,000 and $500,000

54. Whether FX hedging is in-house or outsourced, some activities will still need to be performed by the Secretariat e.g., Pre-trade preparation, Exposure management, Accounting and Limits monitoring (to some extent). As a rough estimate, the cost to the GCF of engaging external counsel for pre-trade preparation and documentation with one counterparty and for reviewing and negotiating the services agreement with an external FX provider is estimated between $40,000 and $60,000. These amounts are only rough estimates and are subject to change depending on the exact services provided by external counsel.

55. As the Secretariat will be looking to enter into hedging contracts with at least one counterparty, once a negotiation with one counterparty has been completed, the costs are expected to be lower for any new negotiation with another counterparty in relation to the preparation of the initial drafts of the documents to be entered into with subsequent counterparties.

56. Direct costs are expected to be between 2 and 10 basis points based on a preliminary survey conducted with commercial banks. These costs may also vary depending on a) the execution is outsourced or not and, b) the outsourced execution model is Agency or Principal dealing.

57. The Secretariat anticipates that over the next 5 years the average cost of hedging[11] per year will be as follows (see Appendix 3 for more details):

| *Hedged amount (Average / Year)* | *Legal costs (One-off)*[12] | *Direct transaction costs (Average / Year)* | *Outsourcing services costs (Average / Year)* |
|---|---|---|---|
| *$ 300,000,000* | $ 40,000 - $60,000 | $ 60,000 - $300,000 | $200,000 - $300,000 |

58. The above projected costs may substantially vary from one year to another considering the scheduled encashments and depending on the total amount hedged. They also only include existing contributions agreements.

[10] Basis points also known as "bps" are simplified units of measure that express percentages in finance. One basis point is equivalent to 0.01%. For instance, 7 bps applied to $100,000,000 equal $70,000

[11] Based on data collected with potential suppliers and counterparties, current financial market conditions, primary assessment of GCF as a counterparty, hedging ratio of 66% and assuming no collateral posting.

[12] Only if GCF trades all contracts with the same counterparty. Should the GCF deal with more than one counterparty then additional legal costs will incur as described in paragraph V.49

59. The outsourcing services and legal costs (both indirect costs as defined in V.45(b)) will be funded from the Secretariat's administrative budget. As described in paragraph V.45(a), FX forward transaction costs are driven by many factors and usually implicit and included in the final price of each trade i.e., markup the GCF will pay above the market price of the derivative itself. Direct transaction costs (as defined in V.45(a)) won't generate expenses per se and there is no required budget. The delivery of this Policy will be covered from the existing headcount approval.

60. For 2022, the Secretariat has assessed that a budget of USD 150,000 is needed to cover the legal fees (negotiation of hedging agreements) and outsourced services fees. It's assumed that the first hedges will be initiated during the last quarter of 2022 for approximately $300-400 million notional to cover exposure arising in 2023. Therefore, the costs of outsourcing services will be borne for one quarter only in 2022. For 2023, the Secretariat anticipates a budget of USD 500,000. Considering the prerequisite steps (e.g., selection of hedging counterparty, negotiation of legal agreements…) and due timeframe before executing hedging transactions, the Secretariat proposes that an overall budget of USD 650,000 covering both 2022 and 2023 be approved, thereby ensuring a flexible and best implementation of the Policy.

## 3.5 Monitoring and review

61. The Secretariat will perform on-going monitoring of the implementation of this Policy and inform the Risk Management Committee of any emerging challenges.

62. The Risk Management Committee may make recommendations on this Policy and report to the Board if a review is needed based on operating experience.

63. In addition to the annual monitoring and reporting, the Policy may also be assessed as part of the overall policy review to be conducted by the Board in the Board Work Plan under each Replenishment cycle.

64. The Secretariat will prepare a quarterly FX report including the total hedging in place by counterparty, the mark to market position of that hedging, any new hedging undertaken since the last report, actual hedging ratio by currency.

# IV. Foreign exchange commitment risk buffer

65. A review of the amount to be set aside for the foreign exchange commitment risk buffer is set out in Annex III.

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# Annex I: Draft Policy to minimize the effect of currency fluctuations on the commitment authority of the Green Climate Fund ("The Policy")

## I. Objective

1. The objective of this Policy is to set out the approaches by which the Green Climate Fund (the "GCF" or the Fund) will seek to manage its foreign exchange ("FX") risk exposure to minimize the effect of currency fluctuations on the commitment authority of the Fund.

## II. Scope

2. This Policy shall apply to non-USD denominated contributions of the commitment authority of the GCF as directly deposited cash and deposited promissory notes which are not yet encashed.

## III. Definitions

3. For this Policy, the next terms are defined as follows:

(a) **FX** means Foreign Exchange.

(b) **ISDA Agreement** means International Swaps and Derivatives Association (ISDA) Master Agreement.

(c) **MtM** means Mark-to-Market.

(d) **NPV** means Net Present Value.

## IV. Hedging principles and application

4. **Exposures to be hedged**

(a) Currency hedges may be used to protect the U.S. Dollar (USD) value of both non-USD denominated contributions paid in cash and deposited as promissory notes not yet encashed.

(b) Natural hedges resulting from the existence of inflows and outflows in the same currency that reduces net exposure shall be considered before using FX hedging instruments.

(c) The resultant net exposure due under contributions agreements will be hedged as follows:

(i) Cash contributions received: up to 100% of the exposure arising upon receipt using FX spot contracts.

(ii) Deposited promissory notes: up to 75% of the exposure arising in the next 3 years, having considered track record and expectations in the realisation of contributions agreements, using FX forward and swaps contracts.

(d) The Secretariat will evaluate at least once a month the GCF commitment authority exposure to foreign exchange fluctuations. Hedges shall be executed as soon as is practicable and within one month of the evaluation, having regard to short-term FX market conditions.

(e) GCF expressly prohibits the use of derivative instruments for speculative purposes and hedging contracts will only be executed to hedge the foreign exchange risk of an underlying foreign currency transaction.

5. **FX hedging instruments**

(a) The Secretariat is authorized to use to the following FX hedging instruments only:

- (i) FX spot contract - purchase or sale of a foreign currency for immediate delivery. This instrument is often used by the Secretariat to immediately convert one currency into another at the prevailing daily rate.
- (ii) FX forward contract - commitment to purchase or deliver a specified quantity of currency on a designated date in the future for a price determined when the contract is transacted. This instrument will be used when the Secretariat knows that they will need to convert one currency into another at a future date.
- (iii) FX swap contract - agreement to simultaneously borrow one currency and lend another at an initial date, then exchanging the amounts at maturity. This instrument may be used by the Secretariat for liquidity and bridging the gap when the GCF has received funds earlier or later than the date of maturity of the foreign exchange forward contract.

6. **Counterparties**

(a) Counterparties suitable for selection by GCF shall have:

- (i) For longer term hedge exposures, a long-term unsecured credit rating of BBB- or above from at least two credit rating agencies (Standards & Poors or equivalent Fitch or Moody's rating)
- (ii) For short term (less than one year), hedge exposures, a short-term unsecured credit rating of A3 or above from at least two credit rating agencies (Standards & Poors or equivalent Fitch or Moody's rating).

(b) Counterparty limits to mitigate the credit risk will be developed in collaboration between the First Level ("CFO") and the Second level ("ORMC")[1] and approved by the Risk Management Committee.

(c) All hedges will be transacted under a mutually acceptable ISDA agreement or other market standard FX hedging agreement which should provide for disputes to be resolved through arbitration only.

(d) Should the GCF require to post collateral, it shall try to establish a pledge of collateral[2] instead of collateral delivered as an outright transfer of title.

7. **Collateral posting and early termination**

(a) A collateral reserve will be set aside to provide for posting collateral as and when needed.

(b) The collateral reserve amount will be $ 50 million.

(c) The collateral reserve will be funded out of the GCF's commitment authority.

(d) The collateral reserve will not be replenished each time funds from the reserve are used for the purposes of posting collateral.

(e) Any increase of the level of the collateral reserve will be submitted to the Risk Management Committee for approval.

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[1] Funding Risk Policy (Decision B.19/04, paragraph (a) (iii) and annex VI)
[2] A pledge of collateral ensures that the pledgor does not lose ownership or possession of the pledged collateral.

(f) Funds held within the reserve will be transferred to the receiving party, as when required under the collateral agreement.

(g) Funds returned to the GCF account will be kept within the collateral reserve.

(h) The funds allocated to the collateral reserve may be withdrawn:

(i) Once the transactions have terminated or,

(ii) When the total reserve amount is considered no longer appropriate by the Secretariat First Level (Chief Finance Officer) in agreement with the Second Level (Office of Risk Management and Compliance) or,

(iii) If GCF no longer holds any contracts with collateral calls.

(i) The Secretariat will monitor regularly and report quarterly the level of the collateral reserve to the RMC, the Board etc.

(j) If supplementary funds must be paid into the collateral reserve, , the Secretariat will replenish it after approval from the Risk Management Committee.

(k) The investment income earned on GCF undisbursed cash balance held with Trustee will cover potential breakage loss/gain associated with early termination of contracts. In case of shortfall, the Liquid asset portfolio[3] will be used.

8. **Roles and Responsibilities**

(l) In accordance with the GCF Risk Management Framework (decision B.19/04), the Chief Financial Officer (CFO), is the primary owner and manager FX risk.

9. **Hedging Reporting**

(a) The Secretariat shall implement the appropriate internal controls and reporting for ensuring the safe and sound conduct of currency hedging activities. A quarterly Treasury Dashboard must be implemented, which includes portfolio information such as exposures, FX rates, counterparty exposures, pledges and contributions for monitoring purposes. The Board will receive a Hedge Report to be included in the current Risk Dashboard.

## V. Implementation arrangements

10. The Secretariat will review FX exposures monthly and is authorised to carry out currency conversions and hedges in accordance with the provisions of the Policy. The Executive Director or his designee is authorised to negotiate and enter into legal agreements on behalf of the GCF to give effect to this Policy.

11. The Secretariat will prepare a quarterly FX report for the RMC and Board review.

12. The Policy is effective from the date of the Board decision adopting the Policy.

13. The Secretariat is authorised to implement this Policy and decide upon the best execution model for entering into FX hedging transactions, which may include outsourcing certain functions relating to trade execution and administration.

## VI. Monitoring and Review

[3] The liquid asset portfolio is defined as securities, cash or cash equivalents held in Trust or in the GCF's bank accounts.

14. The Secretariat will perform on-going monitoring of the implementation of this Policy and inform the Risk Management Committee of any emerging challenges.

15. The Risk Management Committee may make recommendations on this Policy and report to the Board if a review is needed based on operating experience.

16. In addition to the annual monitoring and reporting, the policy may also be assessed as part of the overall policy review to be conducted by the Board in the Board Work Plan under each Replenishment cycle.

# Annex II: Background documents

(a) Appendix 1: Comparative analysis of FX hedging practices by other institutions.

(b) Appendix 2: Comparative analysis of FX hedging execution models.

(c) Appendix 3: Comparative analysis of estimated all-in cost of FX hedging with one counterparty.

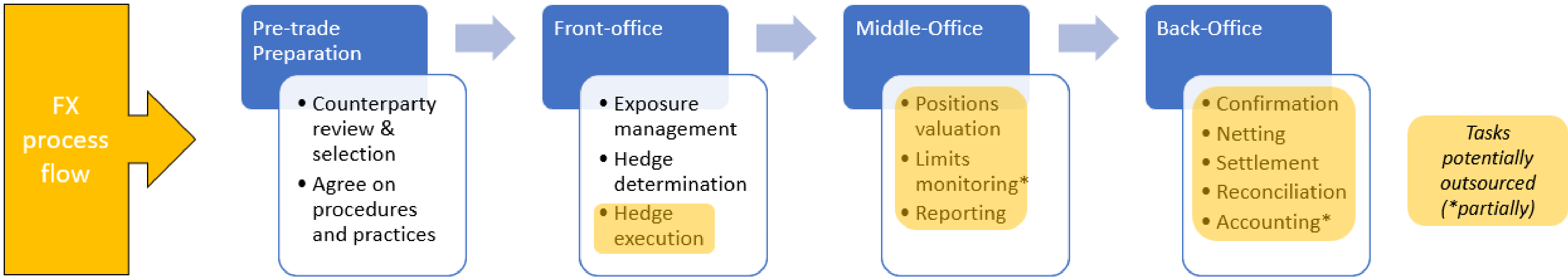
## Appendix 1: Comparative analysis of FX hedging practices by other institutions

| | GAVI | GLOBAL FUND | IFAD |
|---|---|---|---|
| **EXPOSURES TO BE HEDGED** | • Inflows due under contribution agreements: Between 75% and 100% of the exposure arising in the two years following the evaluation, having regard to prior experience and where such certainty does exist in the conversion of contribution agreements to cash.<br>• Inflows expected from announced pledges: Between 50% and 100% of the exposure arising in the year following the evaluation and between 50% and 100% in the following year, subject to visibility on the amount and timing of inflows and having regard to prior experience and expectations in the conversion of pledges to contribution agreements.<br>• Programme expenditure (non-US dollar): Between 50% and 100% of the exposure arising in the two years following the evaluation, having regarded to the degree of confidence with which the cash flow amounts can be estimated.<br>• PEF/Secretariat: Between 50% and 100% of the exposure from expenditure | • Active hedging with levels of 50 to 100 through approved financial instruments<br>• A minimum of 75% of on balance sheet exposures (contributions and commitments) should be hedged<br>• A minimum of 50% of off-balance sheet exposures to reduce the economic risk upon the receipt of a pledge, allocation of available sources of funds, and signature of grant agreements. These exposures include uncommitted pledges, allocated amounts, contingent liabilities, and operational budget over a three-year allocation period in currencies other than US Dollars giving risk to economic risk overall.<br>• Discount factor on donor contributions / on grants and other uses of funds / any other uncertainty factor | IFAD manages the currency risk that results from any mismatch between the currency composition of its assets and the currency composition of its future commitments. The risk is managed by monitoring any mismatches and implementing a realignment strategy if any deviations become significant. The Fund’s Investment Guidelines authorize the use of the following types of derivative instruments, primarily to ensure alignment to the currency composition of IFAD's commitments. |

| | | | |
|---|---|---|---|
| | budgeted for the current calendar year, and for the next calendar year once budget estimates have been compiled for that year | | |
| **HEDGING INSTRUMENTS** | • Foreign exchange forward contracts<br>• Foreign exchange option contracts | • FX forward contracts - often used when the Secretariat know that they will need to convert one currency into another at a future date.<br>• Foreign exchange swap contracts - often used by the Secretariat for liquidity and bridging the gap when the Global Fund has received funds earlier or later than the date of maturity of the foreign exchange forward contract | • Currency forwards<br>• Exchange-traded futures and options<br>• Cross currency swaps |
| **COUNTERPARTIES** | • Not less than A or A2 as measured by at least two major credit rating agencies.<br>• The maximum exposure with any single bank shall be 10% of the short-term portfolio or US$ 250 million (or equivalent in other currencies), whichever is higher. | • Minimum rating of A-<br>• Counterparty limit framework including concentration l | Counterparty must have a minimum credit rating of A- (S&P) or A-(Fitch) or A3 (Moody's |
| **CURRENT POSITION** | As of May 2020, Gavi had hedged 75% of the non-US$ direct contributions (GBP, EUR, NOK... that it expects to receive in 2020. Gavi is exposed to several currencies including. | As of December 2020, hedged currencies included EUR, GBP, SEK, CFH... and the underlying hedging ratio was between 76% and 97% for each currency. | |

# Appendix 2: Comparative analysis of FX hedging execution models In-house vs. Outsourced

1. Overview of the FX hedging workflow




2. Comparative analysis of each execution model (Agency/Principal/In-house) by risk type (counterparty, market, operational) and other factors Overview of the risk types and other key factors

✓ *Pros* / ✗ *Cons*

| | Outsourcing to the Trustee | Outsourcing to an external partner | | Direct execution (in-house) |
|---|---|---|---|---|
| | | Principal execution model[1] | Agency execution model[2] | |
| **Counterparty Credit Risk** | ✓ Very low considering the strong credit rating AAA | ✗ Single counterparty trading<br>✗ Concentration risk as: “all eggs in one basket”. If the credit worthiness of the FX provider deteriorates or the | ✓ Single and multi-counterparty trading. GCF may direct Agent to trade with the F/X | ✓ Single and multi-counterparty trading. GCF select the F/X counterparty(ies) of its choice |

[1] Principal model: the bank acts as a principal counterparty executing the trade with GCF itself, taking on the risk, which it could then warehouse or lay off via another trade

[2] Agency model: the bank acts as a broker for GCF, finding another market participant or multiple participants to take the other side of the trade but, without taking on principal risk themselves.

| | | | | |
|---|---|---|---|---|
| | | relationship terminates, GCF may be faced with credit, liquidity and/or operational risk. Can be mitigated by using more than one provider but then the Agency model would probably be more effective.<br>✗ As the hedge's portfolio grows, GCF may hit the credit limit granted by the counterparty | counterparty(ies) of its choice<br>✓ GCF sets limits against each counterparty and the Agent monitors the exposure | ✓ GCF sets limits against each counterparty<br>✓ GCF monitors its exposure |
| **Operational Risk** | ✓ "Derisk" part of the hedging process including hedge execution, positions valuation, reporting, netting, settlement, reconciliation<br>✗ Pre-trade preparation, Exposure management, Deal determination, Accounting, Limits' monitoring remain under the Secretariat's responsibility | | | ✗ All tasks and inherent operational risk fall to the Secretariat |
| **Market Risk** | Whatever the execution model, the price or value of OTC derivatives contracts held by GCF will rise or fall in response to changes in market factors such as foreign exchange and interest rates. | | | |
| **Pricing** | Not available | ✗ Reliance with one bank on a bilateral (and fundamentally uncompetitive) basis | ✓ Can offer the best price among a "panel" of banks | ✓ Access to a selection of eligible banks |
| **Implementation** | ✗ Not available yet<br>✗ Low visibility on the potential date/level of services/requirements | ✓ Simpler set-up and relationships management as only one counterparty is involved in the trade | ✓ The currency managed solution from the Agent is governed by a single document – e. g. the Currency Management Agreement. This is a bilateral agreement between the GCF and the Agent.<br>✓ The F/X trading relationship is governed by either: | ✓ Allows for more flexibility and autonomy<br>✓ Transaction cost transparency<br>✓ Develop & strengthen in-house Treasury capabilities and operations<br>✗ The whole set-up could be a lengthy process<br>✗ Additional management oversight needed |

| | | | | |
|---|---|---|---|---|
| | | | 1. Agency ISDA[3] –bilateral ISDA agreement signed between the Agent as currency manager and each of the F/X counterparties, for which GCF is added to the schedule of eligible funds.<br>2.Bilateral ISDA[4] –ISDA agreement negotiated between GCF and the F/X counterpartie(s) of choice. GCF will have the ability to directly negotiate specific terms. | |
| | | ✓ Streamlines the credit and documentation process<br>✓ Enables a small GCF operations staff and still executes complex and high-volume trading<br>× Additional contracts necessary e.g., overlay agreement | | |
| **Cost** | Not available | × Estimated supplementary costs of 7 to 10 bps to be apply to nominal hedges portfolio | | × Required investment in system infrastructure, Front/Back-office, transactional, execution venue (estimated cost $50-70K)<br>✓ Economy of scale achieved as the hedges' portfolio grows |

NB: Some FX providers may propose a hybrid model i.e., principal model with access to pricing from a small panel of market participants

[3] The Currency Manager/Agent has negotiated ISDAs with a panel of banks, where the Currency Manager acts as agent on behalf of a list of underlying clients (i.e., the "eligible funds"). The Currency Manager is not a party to the ISDA. Rather, the Currency Manager is entering into the ISDA as agent on behalf of the client. The client (GCF) and the FX counterparty are themselves parties to the ISDA. The FX counterparty will have full recourse to the GCF, but the Currency Manager does not have recourse to GCF via the ISDA.

[4] GCF contracts directly with the hedge counterparty. If GCF choose this option, the Currency Manager would need to be informed of whom GCF is considering ISDA negotiations to ensure the Currency Manager is able to trade with them (in other words on the approved counterparty list of the Currency Manager). If GCF chooses a counterparty not currently in the Currency Manager line-up, then GCF will have certain compliance and monitoring responsibilities. The Currency Manager will not perform those responsibilities.

# Appendix 3: Comparative analysis of estimated all-in cost of FX hedging with one counterparty

**This table below is based on data collected with potential suppliers and counterparties, current financial market conditions and primary assessment of GCF as a counterparty. It is assumed that the above hedges do not require any collateral posting. It is an estimate for information only.**

1. Hedgeable exposure is determined by the total encashment of promissory notes denominated in non-USD currencies (EUR, JPY, SEK) for each year. Does not include any netting from natural hedges but include adjustments from donors' track-record and expectations in the realisation of contributions agreements (except for the encashment of promissory notes denominated in GBP which have been removed). The Secretariat does not expect to be able to hedge any of 2022 exposure.
2. Hedges amount determined by the proportion of hedgeable exposure (in our example 66%) that is hedged back to the USD.
3. Legal cost associated with reviewing and negotiating appropriate agreements with one counterparty. No cost in 2024 and onwards as the agreements are already established since 2023. If these agreements are finalized by the end of 2022 (as per the budget request), then there should be no legal cost in 2023. However, should the GCF deal with more than one counterparty over time, the GCF may bear recurring legal costs (see paragraph V.49)
4. Transaction cost i.e., market price determined by the size (notional), tenor, payment frequency, currency...
5. Outsourcing services fees associated with operational functions (confirmations, settlement and payments, reporting requirements...)
6. As a comparison, the "in-house fixed" cost should the Secretariat directly perform the execution and other operational fonctions.

| Year | Hedgeable Exposure *(USD eq. ref rate)* | Hedges amount (hedging ratio = 66%) | Legal cost | | Transaction cost | | Outsourcing services fees | | Total cost | | In-house fixed cost | | Total cost | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estimated range | | Estimated range | | Estimated range | | Estimated range | | Estimated range | | Estimated range | |
| **2023** | 829,582,567 | 553,055,044 | 40,000 | 60,000 | 110,000 | 550,000 | 390,000 | 550,000 | 540,000 | 1,160,000 | 50,000 | 70,000 | 200,000 | 680,000 |
| **2024** | 504,171,850 | 336,114,567 | | | 70,000 | 340,000 | 240,000 | 340,000 | 310,000 | 680,000 | 50,000 | 70,000 | 120,000 | 410,000 |
| **2025** | 454,171,850 | 302,781,233 | | | 60,000 | 300,000 | 210,000 | 300,000 | 270,000 | 600,000 | 50,000 | 70,000 | 110,000 | 370,000 |
| **2026** | 362,794,415 | 241,862,943 | | | 50,000 | 240,000 | 170,000 | 240,000 | 220,000 | 480,000 | 50,000 | 70,000 | 100,000 | 310,000 |
| **2027** | 332,597,189 | 221,731,459 | | | 40,000 | 220,000 | 160,000 | 220,000 | 200,000 | 440,000 | 50,000 | 70,000 | 90,000 | 290,000 |
| **2028** | 240,551,917 | 160,367,945 | | | 30,000 | 160,000 | 110,000 | 160,000 | 140,000 | 320,000 | 50,000 | 70,000 | 80,000 | 230,000 |
| **Total** | **2,723,869,788** | **1,815,913,192** | **40,000** | **60,000** | **360,000** | **1,810,000** | **1,280,000** | **1,810,000** | **1,680,000** | **3,680,000** | **300,000** | **420,000** | **700,000** | **2,290,000** |
| **Average/year** | **453,978,298** | **302,652,199** | **6,667** | **10,000** | **60,000** | **301,667** | **213,333** | **301,667** | **280,000** | **613,333** | **50,000** | **70,000** | **116,667** | **381,667** |

# Annex III: Review of the amount to be set aside for the foreign exchange commitment risk buffer for solvency risks of the Green Climate Fund

## I. Introduction

1. The "commitment authority" refers to the level of resources available for funding decisions, which typically refers to the total amount of actual cash in the GCF Trust Fund plus the promissory notes deposited in a designated custody account, minus net funding commitments (cumulative funding approvals minus cash disbursed) at any given point in time.

2. Solvency risk refers to inability of GCF to meet its financial commitments due to a shortfall in its available funds relative to its commitments. GCF will take all necessary measures to avoid any solvency events during its operations.

3. As per the GCF Policy for Contributions (decision B.24/02), contributors may make contributions in major freely convertible currencies including the GCF holding currencies (USD, Euros, Yen, GBP). Until the thirtieth meeting of the Board (B.30), GCF made its financial commitments in United States dollars and Euros. Due to the changes in the foreign exchange rates the value of contributions fluctuate compared to the currencies in which the funds financial commitments are made. These variations may be substantial, especially in periods of high foreign exchange rate volatility. To ensure that GCF can meet its financial commitments, the Board, via decision B.19/04, required the fund to maintain a risk buffer. The foreign exchange commitment risk buffer will mitigate the solvency risks related to the fluctuations in the exchange rates.

## II. Linkages with other documents

4. This document has actual or potential linkages with the following items:

(a) "Initial Risk Management Framework and adoption of a risk register" (decision B.12/34);

(b) "GCF risk management framework" (decision B.17/11);

(c) "GCF risk management framework" (decision B.19/04);

(d) "Analysis of options for the financial planning of the commitment authority of the Green Climate Fund for the remainder of the initial resource mobilization period, 2019, and 2020" (document GCF/B.21/33/Rev.01);

(e) "Review of the amounts to be set aside for the operating costs of the Green Climate Fund and the foreign exchange commitment risk buffer for solvency risks" (document GCF/B.22/15/Rev.01); and

(f) "Initial analysis of options to minimize the effects of currency fluctuations on the commitment authority of the GCF" (document GCF/B.27/18).

## III. Analysis of foreign exchange commitment risk buffer

### 3.1 Current trend and forecast

5. The need for the foreign exchange commitment risk buffer for the solvency risk was recognized through decision B.19/04, wherein the Board adopted the risk management framework component and the funding risk policy, which was set out in annex VI to the decision.

6. As per the above decision, in order to meet its financial commitments, GCF will take all necessary measures to mitigate solvency risk during its operations.

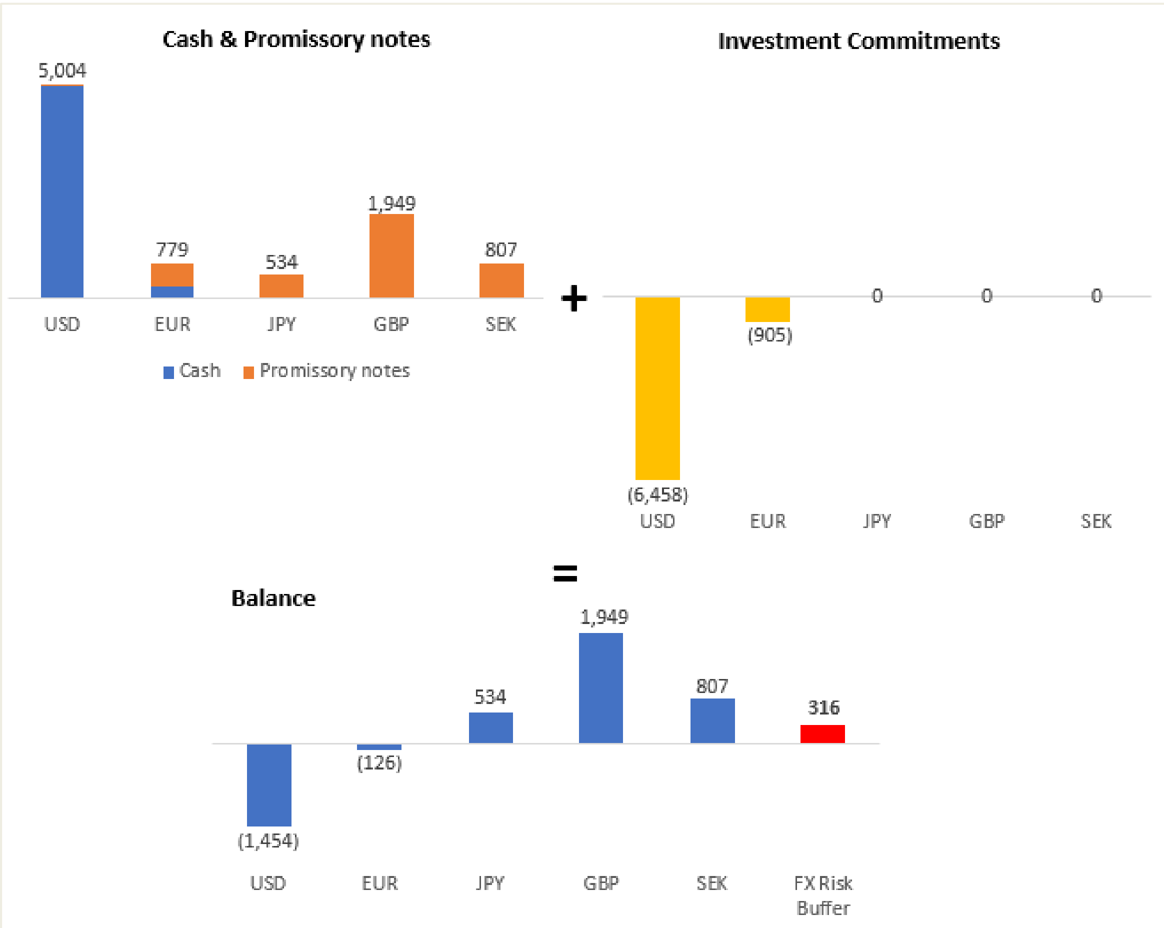
7. The foreign exchange commitment risk buffer ("FX buffer") is used to address the structural currency mismatch between the Cash received and Promissory Notes deposited (EUR, JPY, GBP, SEK) and the Investment Commitments (mostly US$ and some in Euros) resulting in foreign exchange risk. Foreign exchange risk remains until contributions, in currency other than the one in which investment commitments are made, are received in cash or promissory notes are encashed and converted into the required currencies.

8. The risk management framework states that GCF "will set aside a foreign exchange commitment risk buffer at an initial target amount of 20 per cent of the nominal investment commitment amount of GCF for which the matched source of funds is not in the investment currency".

9. All other things being equal, as GCF receives cash contributions and encashes promissory notes and converts them into the required currencies, realized foreign exchange gains and losses are posted and therefore the amount required for the foreign exchange risk buffer progressively decreases.

10. As of September 2021, the gap between 'Cash and Promissory notes' minus 'Investments commitments' is US$ equivalent -1,454 mio for the US$ and US$ eq. -126 mio for the Euro, which implied a FX buffer requirement of $316 mio. It's worth noting that funding proposals approved at B30 are not included as they were approved during Q4. As a comparison, the required amount in Q1 and Q2 2021 was respectively US$ 327 mio and 355 mio.

**Figure 1 : Cash and promissory notes available and Investment commitments by currencies – Sept 2021 (US$ eq.)**




11. Anticipating the adequate level of FX buffer required is challenging as it relies on unknown parameters such as the volatility of the foreign exchange market, the amount of new

funding proposals and the underlying split by currency, the income generated by the GCF investment portfolio. Nonetheless, the forecast of the gap between the Cash & Promissory Notes and the Investment Commitments has been calculated using the following assumptions from October 2021 until December 2022:

(a) Actual amount of new funding approved at B30: US$ 1,206 mio of which US$ eq. 35 mio in Euro

(b) Amount of new funding commitments made by the Board: B.31 US$ 300 mio, B.32 US$ 500 mio, B.33 and B.34 US$ 800 mio each i.e., total equivalent US$ 2.4 billion as per the high scenario of the 2022 programming goals. It is assumed that the currency split will be 90% US$ and 10% Euro as per the current portfolio.

(c) Cash and Promissory notes paid and deposited as per contributions agreements.

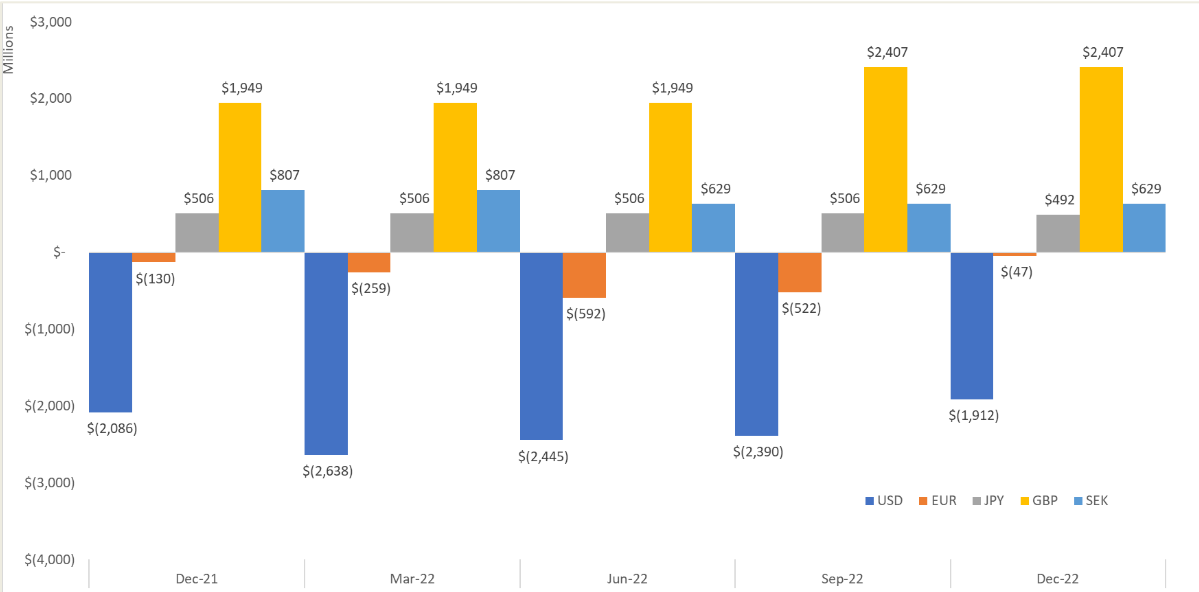
(d) Encashment of Promissory notes as per the agreed encashment schedules,

(e) No FX hedging transactions in 2022

12. In such scenario, the gap between the Cash & Promissory notes and the Investment Commitments in US$ and Euro would widen over the next quarters until September 2022, particularly driven by $2.4 billion of additional funding approved largely in US$ denominated currency which is not compensated enough by inflows of cash and promissory notes denominated in US$ and Euro.

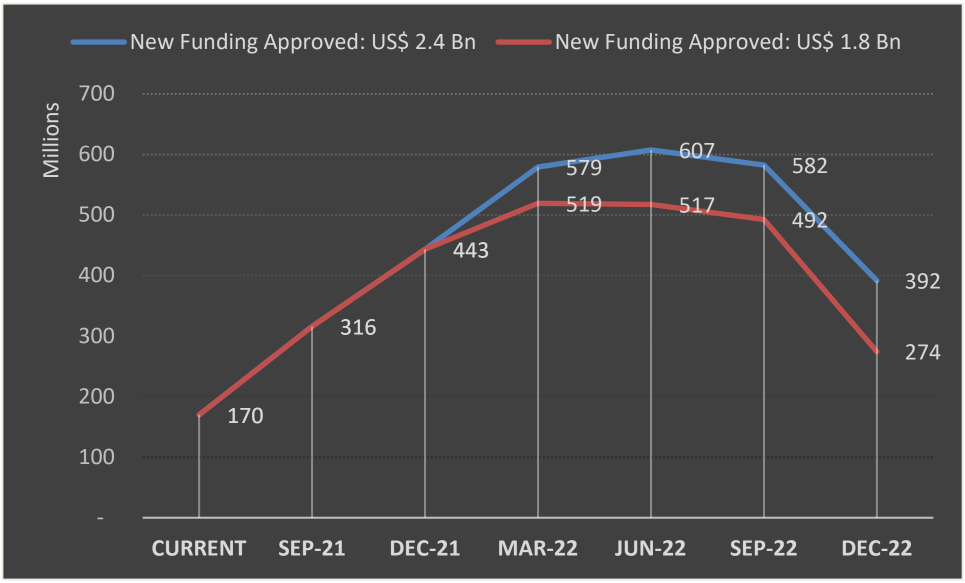
13. Nevertheless, by December 2022, despite new funding approvals, the overall gap US$ + Euro is significantly reduced because of (i) US$ eq. 551 mio of promissory notes deposited in Euro which naturally close the gap in Euro, (ii) US$ eq. 769 mio of cash received in Euro and encashment of JPY PN US$ eq. 381 mio that can be both converted in US$ to fill the US$ gap.

**Figure 2 : Forecast: Gap = Cash & Promissory Notes *minus* Investment Commitments**




14. As a result, and applying the initial target of 20%, the FX buffer requirement would be US$ 443 mio in December 2021 and US$ 590 mio on average over the first 3 quarters of 2022, before reducing to US$ 392 mio at year-end 2022. The graph below also shows what the buffer requirement would be if the amount of funding approved is lower (total US$1.8 billion as per the low scenario of the 2022 programming goals).

**Figure 3 : FX buffer requirement @ 20% target**




## 3.2 Considerations for adjusting the FX buffer

15. The current FX risk buffer is $170 million, being significantly below the prescribed level by the Funding Risk Policy as of September 2021.

16. However, strict compliance with the initial target amount of 20%, as per the Funding Risk Policy, may need to be re-evaluated due to several factors:

(a) The forecast is based on assumptions, particularly new funding proposals for 2022, that may not materialize,

(b) GCF may receive additional US$ contributions during 2022 which will automatically reduce the forecast US$-denominated mismatch between Cash & Promissory Notes and Investments commitments,

(c) The FX buffer requirement is very cyclical and directional, and its initial target model does not include any updated currency volatility,

(d) Both historical and current implied volatility of the EUR, JPY, GBP, SEK against USD fall short of 20% (see Appendix III),

(e) Should the Board approve the Policy to minimize the impact of currency fluctuations on the Commitment Authority in 2022, then the FX buffer requirement would become lower as soon as GCF starts hedging the encashment of non-USD denominated promissory notes,

(f) The current FX buffer methodology is due to be reviewed in 2022 and may lead to a review (most likely downwards) of the initial 20% target,

(g) The Funding Risk Policy enables the Secretariat to review and modify the FX buffer amount over time as necessary,

(h) During 2022, as the Secretariat gets better visibility on the realization of the assumptions, the calculation shall be refined, and the buffer amount required adjusted more precisely.

17. Having considered all the above caveats, the Secretariat recommends that the FX buffer be increased by US$ 150 mio so that the total amount set aside becomes US$ 320 mio. This replenishment, developed in compliance with the Funding Risk policy, is consistent with the plan presented at B.29 and would provide for the latest trend and forecast.

18. As a matter of fact, the forecast buffer requirement for December 2022 is between US$ 274 and 392 mio (mid-point circa $330 mio) depending on the level of funding approvals. Thereby the proposed level of US$ 320 mio is aligned with the actual requirement for September 2021 as well as the forecast requirement for December 2022. Such level would also enable further gradual adjustments, as needed, without unnecessarily depleting resources available for projects' funding.

19. Finally, despite recent currency volatility, the current implied volatility forecasts for the pairs EUR/USD, GBP/USD and USD/JPY (3 main currencies to be deposited or cashed-in in 2022) remain below 10% (i.e., half the buffer target), which means that starting 2022 with a buffer of US$ 320 mio should provide enough cushion for the rest of the year.

20. By the half of 2022, the calculation shall be updated. Like in past, the Secretariat will report the risk buffer in the risk dashboard and will continue to work with the Risk management committee on another adjustment, as and when needed.

21. As of December 2021, the FX buffer requirement was US$ 440 mio, in line with our projections (US$ 443 mio). The Secretariat still recommends a US$ 150 mio top-up resulting in a total FX commitment risk buffer of US$ 320 mio while acknowledging that such amount does not meet the targeted level set by the Funding Risk Policy (FRP). The Secretariat estimates that both analysis and explanations herewith remain valid and still justify an amount of US$ 320 mio. The Secretariat proposes to manage the FX commitment risk buffer and shall periodically make appropriate adjustments to the buffer amount with a view to complying with the target level set out in the FRP (or any replacement target level set by the Board) over time.