

# Greening the Bank of England's Collateral Framework

Ending the Bank of England's support for harmful assets

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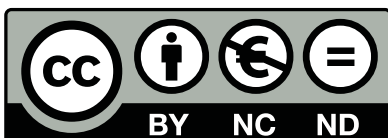
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# Summary

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This paper outlines the critical role the Bank of England's collateral framework plays in shaping the financial system to achieve a rapid transition to a green economy. The Bank's collateral framework is a key part of its monetary policy operations, as the means by which the Bank provides support to commercial banks and, increasingly, financial markets more widely.

The UK government has given the Bank's key policy making committees a mandate to support the net zero transition, however the Bank's progress on operationalising its green remit has stalled.

The collateral framework has an important impact on the green transition, as it shapes financial markets and the real economy. It has a significant impact on financial asset prices, composition of collateral in markets, bond yields and the availability and cost of financing for non-financial companies.

The Bank's failure to integrate environmental risks into its collateral framework advantages environmentally harmful assets, which are able to be used by financial firms to access liquidity on more favourable terms. As a result, environmentally destructive sectors disproportionately benefit from better financing conditions than more sustainable sectors. This crucially undermines the Bank of England's primary mandates for financial and price stability, as well as its secondary mandate to support the UK government's economic strategy including the transition to net zero.

## Policy proposals

1. Develop a science-based framework to assess the environmental footprints of assets and their issuers, and define the most harmful activities
2. Negatively screen for and exclude assets from issuers whose main economic activity is incompatible with climate and environmental goals
3. Introduce higher haircuts to assets based on the environmental footprint
4. Increase transparency over the Bank of England's current collateral operations, including disclosing the environmental footprint of holdings

# Introduction

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## Why the collateral framework matters

The Bank of England's ('the Bank's') collateral framework is a powerful tool that shapes the UK and international financial system. It specifies the assets eligible for financial institutions to use as collateral to access liquidity from the Bank, and the terms on which they can borrow. The framework thus sets the rules by which the Bank accommodates private lending activities, by enabling banks to trade their assets for publicly-issued central bank reserves which are essential for banks to settle transactions. By setting the terms on which privately held assets can be exchanged for central bank money, the collateral framework creates a hierarchy among assets, which has significant impacts on borrowing and lending activities across the broader economy. Assets that are accepted as collateral by central banks receive an implicit subsidy, as greater demand for such assets raises their prices and lowers yields, an impact that reverberates through the financial sector.<sup>1</sup> In the case of the Eurosystem, collateral framework eligibility was found to translate into a 7 basis point reduction in yields for issuers' new loans in 2014.<sup>2</sup>

As explored in section 2, as the overall level of reserves held by banks continues to fall as a result of tighter monetary policy, the Bank's lending facilities, and therefore the collateral framework, will likely play a greater role in injecting liquidity into the financial system. Beyond this, changes to the structure of the financial system, such as the growth of the non-bank sector in facilitating payments and investment, as well as regulatory reforms, could further increase the importance of collateral.

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1. Dafermos et al. (2022). Greening collateral frameworks. Read [online](#). 2. Mésonnier et al. (2021). The Interest of Being Eligible. Read [online](#).

## Why the Bank of England needs to green its collateral framework

### 1. The urgent threat to financial and price stability from fossil fuel reliance and environmental degradation

Central banks are increasingly recognising the urgent threat that climate change and nature loss poses to their core mandates for price and financial stability.

High headline inflation figures across the globe have been driven primarily by high energy prices, which were already inflated in late 2021, and were exacerbated by Russia's invasion of Ukraine. Over-reliance on fossil fuels subject to extremely volatile prices, which passes through to other goods due to their use in production processes, has demonstrably threatened price stability in what has been termed 'fossilflation'.<sup>3</sup> The Bank of England itself has said non-domestic factors, such as the war in Ukraine raising global energy and food prices, accounted for over 70% of inflation in 2022.<sup>4</sup> The physical impacts of climate change such as extreme weather, droughts, and flooding are also materialising across the globe, disrupting the price of food products and other essentials, termed 'climateflation'.<sup>5</sup> The Energy and Climate Intelligence Unit, for instance, estimates that climate change induced extreme weather is likely the biggest driver of rising grocery bills, accounting for up to one-third of UK food inflation in 2023, adding an extra 5.3 percentage points to food inflation figures. Put another way, the impacts of climate change are estimated to have increased the average household food bill by £361 per month in 2023 in contrast to 2001 figures.<sup>6</sup>

Environmental degradation also poses a threat to financial stability through both transition and physical risks.<sup>7</sup> Research estimates that half of the world's fossil fuel assets could become worthless by 2036, leaving stranded assets worth between £8.1 and £10.3 trillion, whilst over 46% of global assets are estimated to be at risk of flooding by 2100.<sup>8,9</sup> Whilst much research to date has focused on the risks associated with climate change, awareness is increasing of the severe financial and monetary stability risks posed by biodiversity loss and broader nature degradation, and crucially, the interlinkages with climate change, which warrants financial supervisors taking a holistic approach to environmental degradation.<sup>10</sup>

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3. Schnabel, I. (2022). 'A new age of energy inflation: climateflation, fossilflation and greenflation.' Read [online](#). 4. Dhingra, S. (2023). 'A cost-of-living crisis: Inflation during an unprecedented terms of trade shock'. Read [online](#). 5. See 3. 6. ECIU (2023). Climate, Fossil Fuels and UK Food Prices. Read [online](#). 7. *Physical risks* describe the damage that climate change impacts cause to firms' physical assets, operating environments or consumer demands, that translate to increase credit risks of banks. *Transition risks* describe losses to firms' caused by actions taken to transition to a climate-safe economy, including shifts in policy and regulation, technology and consumer preferences. 8. Mercure et al. (2021). Reframing incentives for climate policy action. Read [online](#). 9. Kirezci et al. (2020). Projections of global-scale extreme sea levels and resulting episodic coastal flooding over the 21st century. Read [online](#). 10. Kedward et al. (2022). Biodiversity loss and climate change interactions: financial stability implications for central banks and financial supervisors. Read [online](#).

In the context of increasing financial instability and price volatility driven by environmental breakdown, alongside the need for large amounts of investment to deliver a just, green transition, central banks will increasingly need to turn to new tools and approaches to maintain economic stability. Conventional monetary policy tools are not well equipped to tackle inflationary pressures resulting from acute supply-side constraints. As well as exacerbating cost of living pressures for households and businesses, sharp rate rises threaten to curb investment in green energy and infrastructure, which tend to involve higher upfront costs and be more sensitive to interest rate changes.<sup>11</sup> Central bank tools could therefore be calibrated to help ensure price stability in the medium term by insulating green investments against the impact of higher interest rates. For instance, green targeted refinancing operations could enable banks to use appropriate assets as collateral to obtain funding at lower interest rates to support decarbonising investment.

## 2. Greening the collateral framework falls within the Bank of England's mandate

The Treasury updated the Bank's monetary policy remit in March 2021 to include supporting the transition to an environmentally sustainable and net zero economy.<sup>12,13</sup> This has since been reaffirmed, including in the November 2023 update which stated that the economic policy the Monetary Policy Committee (MPC) should support includes, *"increasing long-term energy security and delivering Net Zero"*.<sup>14</sup>

In November 2021, the Bank announced that it would act on its green remit by greening its Corporate Bond Purchase Scheme (CBPS). It would exclude issuers engaged in any coal mining activities, and firms would need to satisfy climate criteria in order for bonds to be purchased under the CBPS, while purchases of eligible firms would be tilted toward stronger climate performers within sectors, termed 'green tilting'.<sup>15</sup> However, the Bank chose to wind the scheme down from May 2022 as part of a series of monetary tightening measures.<sup>16</sup> The result is that progress towards greening the Bank's monetary policy operations has now stalled.

The Bank has signalled that it is exploring decarbonising its collateral framework, yet progress lags behind that of other central banks.<sup>17</sup> The European Central Bank (ECB) committed to green its collateral framework in July 2022, with measures due in place by the end of 2024.<sup>18</sup> Several other central banks are also taking steps towards greening collateral frameworks. Despite its green mandate, the Bank of England appears to be falling behind.

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11. Voldsgaard et al. (2022). Can we avoid green collateral damage from rising interest rates? Read [online](#). 12. The Bank of England has two primary statutory objectives (known as the Bank's 'mandates') set out in the Bank of England Act (1998). These are to maintain financial stability, and price stability. Subject to achieving its primary mandates, the Bank has a secondary objective to support the government's economic policy. The government is also required to outline the remit for each of the Bank's key policy making committees at least once every 12 months. Notably, this includes outlining the price stability target for the Monetary Policy Committee (currently set at 2 percent Consumer Price Inflation) and outlining the economic priorities of the government. 13. HM Treasury (2021). Remit for the Monetary Policy Committee (MPC). Read [online](#). 14. HM Treasury (2023). Remit for the Monetary Policy Committee (MPC). Read [online](#). 15. Bank of England (2021). Greening our Corporate Bond Purchase Scheme (CBPS). Read [online](#). 16. Bank of England (2022). Asset Purchase Facility: Corporate Bond Purchase Scheme sales programme - Market Notice 5 May 2022. Read [online](#). 17. The Bank's 2023 climate-related financial risk disclosure states it is currently developing methodologies to incorporate climate into collateral valuation for future implementation. However, it appears this is based primarily on due diligence questionnaires and energy-efficiency ratings for residential mortgages. Deputy Governor Sam Woods, speaking at an [event](#) in June 2023, said that as climate risks get factored into assets in a more concrete way, they would become relevant to collateral the Bank accepts, but that this was a 'way off'. 18. ECB (2022). ECB takes further steps to incorporate climate change into its monetary policy operations. Read [online](#).

Central banks, including the Bank of England, have periodically adjusted collateral frameworks as threats to economic and financial stability evolve. The ECB for instance changed its collateral valuation scheme 74 times between 2008 and 2014.<sup>19</sup> Environmental breakdown and the green transition represent some of the most profound challenges facing the financial system and wider economy. It is therefore incumbent on all central banks to accelerate efforts to ensure collateral frameworks are climate-safe.

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**19.** Weber, C. (2023). The Collateral Policy of Central Banks - An Analysis Focusing on the Eurosystem. Read [online](#).



# Section 1: The Bank of England's collateral framework

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The collateral framework is the set of rules set by the central bank for the lending of central bank reserves to financial firms. Supplying reserves is a key function of all central banks, as ensuring firms have enough reserves to settle payments between themselves on a daily basis is essential for maintaining monetary and financial stability.

To protect itself in the instance that borrowers are unable to repay, the central bank lends reserves in exchange for financial assets, which are held as collateral. The collateral framework outlines which counterparties the central bank agrees to lend to, what assets it accepts as collateral, and at what 'price' these assets are accepted.

The value at which assets are accepted is set by applying what is known as a 'haircut' to assets. A haircut means what percentage discount is applied by the Bank to the market value of the asset. For instance, if an asset has a market value of £1 million and a 20% haircut is applied, the commercial bank would receive a loan of £0.8 million in reserves.

The two main aspects of the collateral framework are therefore **which assets are eligible** for use as collateral; and **the haircuts applied to eligible assets**.

## a) Eligibility criteria

Central banks' set criteria outlining which assets are eligible for use as collateral. Criteria is intended to ensure that assets accepted are sufficiently low-risk to protect the central bank in the instance that borrowers are unable to repay, and it wishes to sell assets to recoup the value of the loan.

A broad range of financial assets are accepted as collateral in the Bank of England's collateral framework. Since the global financial crisis, the Bank has expanded the range of assets accepted, and the range of institutions that can access liquidity facilities in order to ensure monetary and financial stability in the wake of the financial crisis. Eligible assets are divided into three 'buckets' termed 'Level A', 'Level B', and 'Level C' collateral. Level A collateral is considered to be the most liquid, including primarily government and central bank debt. Level B and C collateral both include non-government securities, portfolios of corporate bonds, mortgage loans and consumer loans.<sup>20</sup>

Companies whose assets are eligible for use as collateral have been found to benefit from more favourable financing conditions than those who are not eligible. This is because such assets allow financial firms to more easily access central bank liquidity, meaning that banks are more likely to facilitate loan issuance; and the market demand for such assets increases, increasing prices and lowering yields. This is further reflected in the activities of institutional investors, whose portfolios are adjusted in favour of eligible assets.<sup>21,22</sup>

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20. For detail, see Bank of England (2023). [Sterling Monetary Framework: Summary of collateral eligible for the Bank's operations](#).

21. Mésonnier et al. (2021). [The Interest of Being Eligible](#). Read [online](#). 22. Pelizzon et al. (2023). [Collateral Eligibility of Corporate Debt in the Eurozone](#). Read [online](#).

## b) Haircuts

Central banks apply haircuts to eligible assets in the aim of protecting themselves (as the lender) from a fall in the value of the asset, in the event the borrower defaults and the asset needs to be sold to recoup the amount borrowed. Haircuts vary depending on the assessed risk profile of the asset. Central banks typically set haircuts according to several factors. More liquid assets (i.e. those more easily converted into cash) are deemed less risky and so have lower haircuts applied, and vice versa.

The Bank's Sterling Monetary Framework sets out the haircuts applied to different asset classes. These are as low as 0.5% for sovereign debt, and as high as 42% for certain portfolios of corporate assets, on top of which additional haircut charges can be added where the Bank deems it to be necessary.<sup>23</sup>

### The collateral framework reverberates throughout the financial system

As outlined above, assets eligible for use as collateral, and those with lower haircuts, tend to see boosted asset values, and issuing firms benefit from more favourable credit conditions. This is in part due to the way in which the central banks setting of collateral rules influences lending activities between financial institutions beyond the central banks' direct lending activities. Private financial institutions, including non-banks, also use collateral and haircuts when lending to each other, and the criteria they apply to determine eligibility and haircuts is heavily influenced by those of major central banks such as the Bank of England and the European Central Bank (ECB). As a result, the collateral frameworks of central banks' reverberates throughout the financial sector.<sup>24</sup> As Gabor explains, *"collateral valuation is at the heart of modern systems of market-based finance."*<sup>25</sup>

It is important to emphasise that the impact of collateral eligibility and lower haircuts can still have a significant impact on asset values and financing conditions regardless of the actual usage of collateralised lending facilities, meaning much of the impact cannot be observed via the central bank's balance sheet.<sup>26</sup> Therefore it is critical to consider the entire framework, rather than just the collateral holdings that can be measured on the central bank's balance sheet at any one point in time.

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<sup>23</sup>. Bank of England (2022). Sterling Monetary Framework: Summary of haircuts for securities eligible for the Bank's lending operations. Read [online](#). <sup>24</sup>. Dafermos et al. (2020). Greening the eurosystem collateral framework: How to decarbonise the ECB's monetary policy. Read [online](#). <sup>25</sup>. Vestergaard, J. (2021). Monetary Policy for the Climate? A Money View Perspective on Green Central Banking. Read [online](#). <sup>26</sup>. Mehrling notes that much of the impact of the collateral framework *"comes not from positions taken by the central bank but rather from the price support provided from trading options that may well remain unexercised and so never show up on the central bank's balance sheet."* See: Mehrling, P. (2012). Three Principles for Market-Based Credit Regulation.

## 1.1 The increasing importance of collateral

The Bank of England currently supplies reserves to financial firms through a number of channels, including both long-term and short-term lending facilities, each designed for different purposes. Though some of these operations exclusively accept only Level A collateral most also accept Level B and C collateral.

To illustrate the scale of the Bank's collateral operations, since March 2014 the Bank of England has supplied almost £165 billion in reserves through its regular lending facility, the Indexed Long-Term Repo Facility (ILTR).<sup>27</sup> Of this, £9bn has been allocated to borrowers using Level B collateral and almost £60bn has been lent against Level C collateral. The rate paid by borrowers (separate to asset-level haircuts) is indexed to Bank Rate, with Level B collateral having a minimum spread above Bank Rate of 5 basis points (0.05%) and Level C 15 basis points (0.15%). Though these may seem like small spreads, when considering lending on the scale of billions of pounds, the difference between Level B and Level C collateral for instance can save financial firms millions of pounds. As explored above, such collateral eligibility status can therefore increase demand for an asset, subsidising issuers with higher prices and thus lower financing costs.

It's worth noting that lending facilities can also be used to support particular public policy objectives. For example, both the Bank's Funding For Lending and Term Funding Scheme have been tailored to incentivise bank lending to small and medium-sized enterprises (SMEs).<sup>28</sup>

### Monetary tightening and collateral

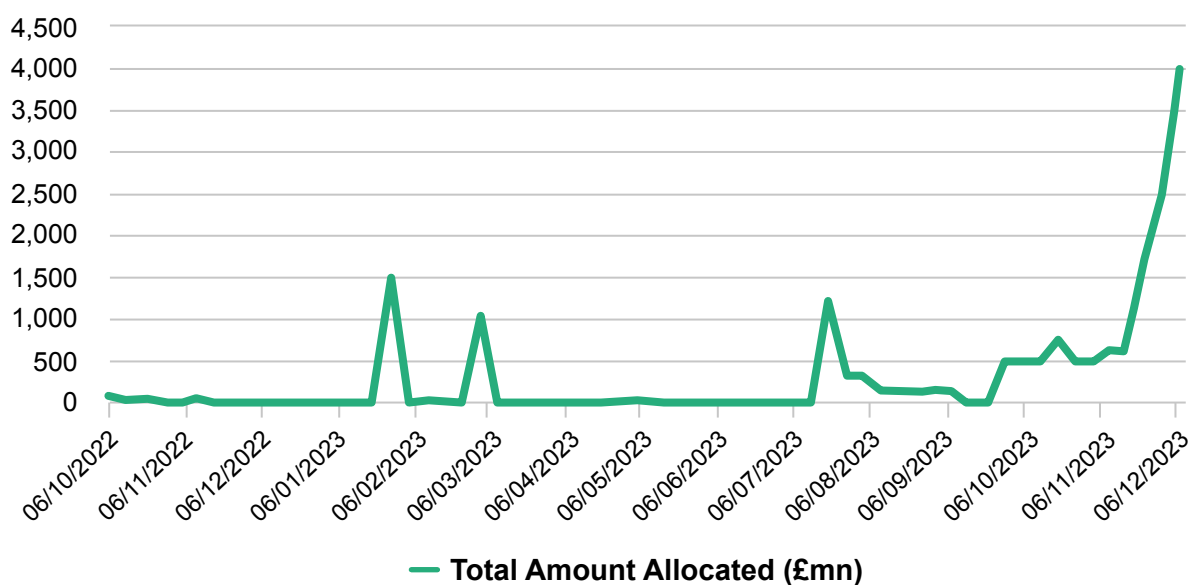
The overall stock of central bank reserves in the UK financial system rose substantially in the years following the 2008 Global Financial Crisis as central banks including the Bank of England turned to monetary easing. Quantitative Tightening (QT) is now reversing this trend, and the Bank of England has indicated a preference to return to a regime where the quantity of reserves is determined by banks' demand. However, as the Bank of England has recognised, *"maintaining monetary control, micro- and macro-prudential stability means supplying a materially higher standing stock of reserves than we did pre-2008."*<sup>29</sup> In lieu of holding ample reserves on their balance sheets, banks will likely need to hold more assets that can be used as collateral to easily obtain reserves as needed. As it sets the terms on which reserves are supplied, the collateral framework becomes an increasingly important question of political economy.

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<sup>27</sup>. Data from Bank of England, as of 31 January 2024. Available [online](#). <sup>28</sup>. The Bank's Term Funding Scheme was introduced in 2016 to provide funding to banks and building societies at or close to Bank Rate, in the aim of reinforcing the transmission of cuts in interest rates to households and businesses. See Bank of England (2016). [Quarterly Bulletin: The Term Funding Scheme: design, operation and impact](#). It was modified in 2020 to include additional incentives to encourage bank lending to SMEs. <sup>29</sup>. Hauser, A. (2023). "Less is more' or 'Less is a bore'? Recalibrating the role of central bank reserves. Read [online](#).

The reversal of quantitative easing (QE) will therefore likely continue to increase the usage of collateralised lending facilities. The Bank of England’s latest aggregate estimate of banks preferred minimum range of reserves is £335-496bn. With the current path of QT, the supply of reserves is expected to fall to that range in as little as two or three years.<sup>30</sup> In recognition of this, the Bank of England introduced a new Short Term Repo (STR) facility in October 2022, usage of which has increased in recent months (figure 1) with higher money market rates. While the STR currently only accepts Level A collateral, the Bank has said it will continue to deepen alternative liquidity sources, which will involve “*broadening and deepening the stock of pre-positioned collateral*”.<sup>31</sup>

**Figure 1: Usage of Bank of England Short Term Repo facility**



Source: Bank of England, 2023

The crises surrounding Silicon Valley Bank and Credit Suisse in 2023 heightened concerns around vulnerability in the traditional banking sector, particularly in the context of tighter monetary and financial conditions, technological changes that increase the risk of faster, larger bank runs.<sup>32</sup> Such concerns have also prompted leading thinkers, including the Group of 30, to call for reform of the terms on which banks access central bank liquidity that would substantially increase the role of collateral in regulating the financial sector, and in doing so would likely further increase the influence of the collateral framework.<sup>33</sup>

**30.** Bank of England (2023). What do we know about the demand for Bank of England reserves? Read [online](#). **31.** See 29 **32.** IMF (2023). Global Financial Stability Report. Read [online](#). **33.** Lord Mervyn King, former Governor of the Bank of England, and Paul Tucker, former Deputy Governor for Financial Stability, have both raised the need for a more preventative approach to banking regulation which would further increase the importance of collateral, including by requiring that banks’ hold enough liquid assets and prepositioned collateral with the central bank to cover 100% of ‘runnable’ liabilities. Similar proposals were recently made in a report by the G30. (See: King, M. (2023). We need a new approach to bank regulation. Read [online](#), Noonan, S. (2023). Former BoE deputy calls for radical overhaul of bank funding. Read [online](#)., and G30 (2024). Bank failures and contagion: Lender of last resort, liquidity and risk management. Read [online](#)).

## The growth of market-based finance

As outlined in Section 1, central bank collateral policy plays a key role in shaping the structure of financial markets. The role of market-based finance has been steadily increasing in the UK, with non-bank financial institutions' balance sheets growing at a pace that has vastly outstripped traditional banks, doubling in size since the 2008 financial crisis.<sup>34</sup> The importance of market-based finance is likely to continue to grow, particularly if new forms of money (such as privately issued digital settlement assets or central bank digital currencies) compete with bank deposits as a means of payment, disintermediating the banking system.<sup>35</sup> The key role of collateral valuations in governing liquidity would continue to grow in an increasingly market-based financial system - ensuring such collateral frameworks are not undermining the green transition therefore becomes a vital exercise.

Recent instability in the non-bank financial sector, including the UK's Autumn 2022 LDI crisis, has also focussed attention on the growing risks of liquidity crises in market-based finance and brought into question the terms on which non-banks may be able to access the central bank's collateralised lending facilities. In September 2023, the Bank of England announced plans to create a permanent lending facility for non-bank financial institutions (NBFIs) to provide a 'public backstop' to safeguard financial stability. Such a backstop, the Bank's Andrew Hauser stated, will take the form of lending against high quality collateral.<sup>36</sup> Depending on the breadth of non-bank financial institutions that are permitted to access central bank liquidity via the Bank's new scheme, and the range of assets deemed acceptable (for instance, whether collateral eligibility is extended beyond gilts), the Bank's collateral framework could soon have an even greater and more direct impact on market-based finance, and the premium attached to eligible assets could increase.

Finally, it is worth noting that there is already a case for a greater use of macroprudential haircuts and margins to respond to growing fragility in the non-bank financial sector. Financial institutions use collateral when lending to each other in daily transactions that contribute to the build up of leverage within the financial system that contributes to financial instability. The greater the haircuts applied on the collateral used, the more expensive it becomes for financial institutions to lend to each other, disincentivising excessive leverage building up in the system. It has been proposed that central banks' use tools to regulate collateral valuations between market participants to mitigate such risk.<sup>37</sup> As Dafermos et al., outline, such efforts currently ignore the environmental impacts of financial institutions, and haircuts and margins must be calibrated with environmental impacts.<sup>38</sup> A green Bank of England collateral framework could support such efforts by acting as a framework that could be applied to market-based financing as well as traditional banks.

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34. FSB (2022). Global Monitoring Report on Non-Bank Financial Intermediation 2022. Read [online](#). 35. Positive Money (2021). New Forms of Digital Money - response to Bank of England Discussion Paper. Read [online](#). 36. Hauser, A. (2023). 'A journey of 1000 miles begins with a single step: filling gaps in the central bank liquidity toolkit'. Read [online](#). 37. ECB (2016). A case for macroprudential margins and haircuts. Read [online](#). 38. Dafermos et al. (2021). Greening the UK financial system - a fit for purpose approach. Read [online](#).

## Section 2: The collateral framework's carbon bias

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This section turns to how the Bank of England's collateral framework is biased towards environmentally damaging assets. The Bank publishes the broad asset types eligible to be used as collateral at each level (A, B and C) as well as a list of individual securities accepted, and a summary of haircuts that are applied to different asset types. It does not state that environmental considerations are taken into account when considering eligibility or haircuts, but says that when making assessments on the riskiness of assets, the Bank considers *“the role of rating agencies, the evolution of the securitisation regulatory environment and the principles attached to such frameworks”*.<sup>39</sup>

The Bank of England's published list of eligible Level B and C collateral reveals that as of 29th January 2024, the Bank accepts corporate bonds from Shell and TotalEnergies, both of which are currently expanding oil and gas production, which is not in line with meeting the goals of the Paris Agreement.<sup>40,41</sup> As expanded upon in the Annex, the Bank also accepts bonds from a number of other particularly environmentally damaging companies. This includes a subsidiary of coal-producer BHP Group, as well as mining giant Rio Tinto, whose activities continue to drive significant biodiversity loss and health risks to local communities. The inclusion of bonds from BHP Group is particularly concerning, given that the Bank excluded all coal producers in its approach to greening the Corporate Bond Purchase Scheme.<sup>42</sup> Bonds from environmentally damaging companies in other industries such as Japan Tobacco and Emirates Airlines are also accepted as collateral. Auto asset-backed securities also form a significant proportion of eligible collateral, which are typically carbon-intensive and face transition risks from the move to greener modes of transport.<sup>43</sup> Whilst a discussion of integrating climate justice concerns into the collateral framework is beyond the scope of this paper, this has been proposed by Dafermos (2023) and is an important for central banks' to consider going forward.<sup>44</sup>

Whilst the Bank has previously indicated that it is considering the impact of climate change on collateral valuations, efforts to date to formally assess or act on this appear limited. Whilst the Bank conducts a due diligence questionnaire to assess the risk profile of collateral, which contains 3 questions about climate risk, responses are based entirely on the firm's own assessments, and there is no detail as to whether or how responses are incorporated into the collateral framework.<sup>45</sup> The Bank stated in its 2023 Climate Related Financial Disclosure that it is beginning to look at flood risk data to identify prepositioned residential mortgage collateral exposed to flood related risks.<sup>46</sup> Whilst welcome that the Bank is considering physical risks, as others have pointed out, a focus on physical risks may counterproductively penalise mortgage borrowers who are exposed to climate risks and require more, rather than less, financing, in order to increase resilience.<sup>47</sup>

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**39.** Bank of England (2022). Sterling Monetary Framework: Summary of haircuts for securities eligible for the Bank's lending operations. Read [online](#). **40.** Oil Change International (2023). Data Update: Shell's Oil and Gas Project Pipeline. Read [online](#). **41.** Oil Change International (2023). Big Oil Reality Check 2023. Read [online](#). **42.** Bank of England (2021). Greening our Corporate Bond Purchase Scheme (CBPS). Read [online](#). **43.** Carbon Tracker (2023). Blindspot: Auto Loan ABS An Asset-Backed Insecurity? Read [online](#). **44.** Dafermos, Y. (2023). Towards a climate just financial system. Read [online](#). **45.** The Bank of England requires participants wishing to position assets as collateral with the Bank to complete a Due Diligence Questionnaire as part of the eligibility process. Questionnaires can be found on the Bank's website: Bank of England (2023). [Eligible Collateral](#). **46.** Bank of England (2023). The Bank of England's climate-related financial disclosure 2023. Read [online](#). **47.** Dafermos et al. (2022). Greening collateral frameworks. Read [online](#).

Moreover, beyond these indications, it appears that there is little further consideration of the environmental risks associated with assets accepted as collateral.

Research has shown that in the absence of interventions, central banks' collateral frameworks, and the benefits of eligibility and lower haircuts, are generally skewed in favour of high-carbon sectors. This occurs through two main channels:

### **1. Central banks' reliance on private credit ratings, which fail to adequately reflect climate and nature related risks**

As found in a survey of member central banks' conducted by the Network for Greening the Financial System (NGFS), private credit ratings form a core component of central banks' risk assessment processes for a range of central bank operations, including in determining collateral eligibility and haircuts.<sup>48</sup> For example, private credit rating agencies are the most frequently used credit assessment source used by the ECB for assessing collateral eligibility.<sup>49</sup> The Bank of England states that it considers the role of rating agencies and eligibility of assets with other central banks' when assessing collateral eligibility and haircuts, so it can be reasonably assumed that private rating agencies play a significant role in the Bank's collateral framework.

Private credit rating agencies lack transparency around their own climate risk analysis methodologies, and how assessments are integrated into final credit ratings.<sup>50</sup> Generally, however, when put under scrutiny, they have been found to be severely limited. Models tend to scan risks over short time horizons, and rely on historical, rather than forward-looking, data, which fail to capture the uncertainty and non-linearities associated with the physical impacts of climate change and nature loss.<sup>51</sup> There is a strong case that even more sophisticated approaches to estimating climate and nature-related financial risks cannot adequately place measure these impacts in financial terms, leading experts to call for supervisors to take a 'precautionary' approach to financial policy that goes beyond attempts to estimate the impacts of environmental degradation on individual financial institutions' balance sheets and looks to more directly managing the impact that the financial industry itself has in perpetuating environmental degradation.<sup>52</sup>

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**48.** NGFS (2022). Credit Ratings and Climate Change - Challenges for Central Bank Operations. Read [online](#). **49.** To be accepted as collateral in the ECB's collateral framework, an asset must be rated investment grade by at least one out of four main private credit rating agencies: Standard and Poor's (S&P), Moody's, Fitch and DBRS Morningstar. See: [ECB Eurosystem Credit Assessment Framework](#). **50.** Breitenstein et al. (2022). ECB Occasional Paper Series: Disclosure of climate change risk in credit ratings. Read [online](#). **51.** An in-depth discussion of the failures of climate financial-risk modelling is beyond the scope of this paper, but see, for more detail: Condon, M. (2021). Climate Services: The Business of Physical Risk. Read [online](#)., Fiedler et al. (2021). Business risk and the emergence of climate analytics. Read [online](#)., and Trust et al. (2023). The Emperor's new climate scenario. Read [online](#). **52.** Chenet et al. (2022). Developing a precautionary approach to financial policy - from climate to biodiversity. Read [online](#).

## 2. Central banks' 'market neutrality' principle leads to favouring high-carbon sectors

The principle of 'market neutrality' guides the monetary policy operations of many central banks, including the Bank of England. Broadly, market neutrality describes a purportedly free-market approach where central banks' aim to avoid measures that might be considered to 'shape' a market. However, the resulting bias of this approach towards high-carbon sectors has been demonstrated by the Bank of England's Corporate Bond Purchase Scheme (CBPS), a scheme that formed part of the Bank's QE programme. The scheme's 'market neutrality' approach entailed buying investment grade corporate bonds in proportions that reflected the composition of bond buying in the market both across and within sectors. Research found that bonds issued from carbon-intensive sectors accounted for approximately 57% of the share of the bonds eligible for purchase under the CBPS, despite these same sectors contributing only 19% to gross value added in the wider UK economy and contributing to just 13.8% of UK employment.<sup>53</sup> As demonstrated by extensive research, and described by the Bank of England when it later announced plans to green the CBPS, current market capitalisations and asset compositions reflect a 'systematic underpricing' of climate risk by financial markets, with a resulting bias towards carbon-intensive sectors.<sup>54,55</sup> The existence of climate externalities that pose a severe threat to financial and price stability, and the non-neutral impact of the Bank on environmental outcomes through asset purchases and its collateral framework, means that the market neutrality principle is no longer suitable nor achievable. Central bankers have recognised that the market failure of the climate crisis requires a rethinking of traditional notions of market neutrality.<sup>56</sup>

The above two channels lead central banks' collateral frameworks to be skewed in favour of high-carbon assets via both eligibility and haircuts applied. Researchers from the Banque de France find that the Eurosystem eligible collateral universe, and to an even greater extent the collateral pledged, is not aligned with the climate targets of the European Union.<sup>57</sup> There is little reason to think things are much different for the Bank of England.

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**53.** Dafermos et al. (2020). Decarbonising the Bank of England's Pandemic QE. Read [online](#). **54.** Hauser, A. (2021). 'It's not easy being green - but that shouldn't stop us: how central banks can use their monetary policy portfolio to support orderly transition to net zero'. Read [online](#). **55.** Monnin, P. (2018). Central banks should reflect climate risks in monetary policy operations. Read [online](#). **56.** See for example remarks by [Andrew Bailey](#), [Christine Lagarde](#) and [Isabel Schabel](#). **57.** Oustry et al. (2020). Climate-related Risks and Central Banks' Collateral Policy: a Methodological Experiment. Read [online](#).



## Section 3: Approaches and examples of greening collateral frameworks

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Since the global financial crisis, the Bank has expanded the range of eligible assets and institutions that can access liquidity facilities in order to meet its mandate for financial and price stability. This suggests the Bank has the capacity to adapt the collateral framework to emerging systemic risks such as climate change and nature loss. Moreover, as the institution that underpins and oversees the financial system, it has both the ability and responsibility to help guide the firms it supervises in the transition to a climate-safe economy. Greening the collateral framework is therefore critical for the MPC to meet its long-term price stability mandate and act on its green remit.

By subjecting environmentally damaging assets to higher haircuts or excluding them from collateral eligibility (effectively a 100% haircut), the implicit subsidy received could be removed. The reverberating effects would help to rebalance the currently overly favourable financing conditions enjoyed by fossil fuel companies and other carbon-intensive and environmentally damaging sectors.

### 3.1 Approaches to greening collateral frameworks

Conceptual approaches to greening central bank collateral frameworks can be placed into two main categories, as outlined by the International Network for Sustainable Financial Policy Insights, Research, and Exchange (INSPIRE)<sup>58</sup>

**The environmental risk exposure approach**, which describes adjusting the collateral framework to reflect the assessed exposure of financial institutions and central banks to environmental risk. This reflects the concept of ‘single materiality’, in which the focus is placed on shielding the financial system from what are perceived to be exogenous environmental risks. Applying an environmental risk exposure approach would require attempting to quantify in financial terms the impacts of transition and physical risks on financial assets. Calculated financial risk would then need to be translated into probabilities of default at entity-level, and integrated into the Bank’s credit assessment and resulting collateral eligibility and haircuts. This approach mirrors that taken by the ECB, which has shown to have limited effectiveness due to the reasons described above (see box 2).

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58. Dafermos et al. (2022). Greening collateral frameworks. Read [online](#).

**The environmental footprint approach**, where adjustments to the collateral framework go beyond a financial risk-lens, and incorporate considerations of the environmental impacts of financial assets when assessing collateral eligibility and haircuts. Such an approach recognises the failures in approaches based solely upon financial-risk (as expanded upon above) and reflects the concept of ‘double materiality’, which recognises that the financial system itself impacts and contributes to environmental breakdown, and thus the impact of the financial system on the environment must be addressed.<sup>59</sup>

Applying an environmental footprint approach would entail the central bank assessing the environmental footprint of assets, and using this as the basis for adjusting the collateral framework. A number of approaches can then be taken to the central bank evaluating an issuer’s environmental footprint, and adjusting collateral eligibility and haircuts in accordance.

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<sup>59</sup> An in-depth discussion of double materiality and its interpretations is beyond the scope of this briefing. For more detail, see for example: [Täger, M. \(2021\)](#), and [Boissinot et al. \(2022\)](#).

## Box 1: Why the Bank of England should take an ‘environmental footprint’ approach to greening its collateral framework

### 1. The environmental footprint approach reflects the powerful and non-neutral role of central banks in the financial system and the environmental crisis.

Central bank operations and activities, including collateral frameworks, have a powerful impact on environmental outcomes, and so such outcomes should not be viewed as exogenous to the actions of a central bank. This understanding is central to the concept of ‘double materiality’ that is now being mainstreamed across sustainable finance regulation in several jurisdictions, including in some initiatives in the UK.<sup>60</sup> An environmental footprint approach also distinguishes between risks at the micro level, and systemic risks. A footprint-based adjustment to the Bank’s collateral framework would be an effective tool for reducing systemic risks, which cannot be effectively mitigated through micro interventions.

### 2. The Bank’s green mandate empowers it to take a strong approach to greening.

Not all approaches based on double materiality, or environmental footprints, are equal. As Täger et al. outline, considering the impact of the financial sector and supervisors on environmental degradation purely due to the fact that such impacts translate into financial risks, is a ‘weak’ conceptualisation of materiality.<sup>61</sup> As researchers from the Banque de France have proposed, the unique threat posed by environmental degradation warrants a ‘transformative’ or ‘strong’ double materiality perspective from financial supervisors and monetary policymakers, which entails proactively shaping the financial system so that it is *“fit for the purpose of an ecological transition and the structural transformation of our socioeconomic systems that is required”*.<sup>62</sup> Such an approach falls not only within the Bank of England’s primary mandates due to the financial and monetary stability implications of climate change, but it is particularly relevant to its secondary mandate to support government policy, including the transition to net zero. It’s also worth noting that the Bank’s approach to greening the CBPS demonstrated elements of an environmental footprint approach by scoring companies based on their climate performance, but this was undermined by a weak application of ‘tilting’ within sectors due to its commitment to the market neutrality principle (as detailed in Section 2).

<sup>60</sup>. The UK’s Sustainability Disclosure Requirements regime, which is currently in development, is due to integrate the concept of double materiality by requiring firms to report on the environmental impacts of their activities (see HM Treasury (2023) [Green Finance Strategy](#)). The EU’s Corporate Sustainability Reporting Directive, coming into force in 2024, seeks to embed double materiality by requiring reporting on the impacts of an entity on environmental and social factors (see European Commission (2022). [Sustainable Finance](#)). <sup>61</sup>. Täger, M. (2021). ‘Double Materiality’: What is it and why does it matter?. Read [online](#). <sup>62</sup>. Boissinot et al. (2022). Aligning financial and monetary policies with the concept of double materiality: rationales, proposals and challenges. Read [online](#).

## 3.2 Practical considerations for an environmental footprint approach

### Developing a framework to assess environmental footprints

In order to enact an environmental footprint approach, central banks first need a framework to assess environmental footprints, including deciding whether to base this assessment at the level of the asset, company or activity. As Dafermos et al. outline, an asset-based assessment can allow granularity with regard to assets that are intended to finance only green activities, such as green bonds, that are issued from a company whose overall footprint may be carbon-intensive. However, such bonds carry risks of greenwashing, particularly where issued from entities with a large environmental footprint, and regulations to address this are still in their infancy. Therefore, it is important to use a combination of data at the asset, company and sectoral level, utilising a combination of forward and backward looking data, so interpreting 'footprint' in dynamic terms. The benefit of the environmental footprint approach is that it allows for greater granularity so that supervisors could, for instance, opt not to penalise certain companies who may have large environmental footprints but have credible plans to reduce them, or similarly companies that are exposed significantly to physical risks and require greater financing for adaptation.

A wide range of environmental footprint metrics can be used at the entity and activity level. Whilst nature-related impacts may be more complex to assess than that of climate change impacts, where carbon emission metrics, for instance, can be used as a proxy, central banks' must not delay integrating nature-loss into their assessments, and must utilise available data to avoid the emergence of 'blind spots', for instance, where climate-mitigating activities may negatively impact nature and generating financial and monetary stability risks. Crucially, this entails defining the most harmful activities that must not benefit from central bank support. Kedward et al. for instance propose four key criteria that could be applied to identify the most biodiversity-related harmful activities that must be reduced.<sup>63</sup>

Examples of indicators that could be used include:

- **Public taxonomies** that outline activities considered 'green' and those considered 'dirty' could be used as a starting point to make assessments at the activity level. The UK Green Taxonomy is currently in the late stages of development, which is intended to provide a comprehensive guide to green activities that companies will report against, and will underpin other public policies.<sup>64</sup> A strong case has also been made for the need for a 'dirty' taxonomy to clearly demarcate environmentally harmful assets, however the absence of this needn't prevent the Bank from doing so, as evidenced by the exclusions the Bank applied for coal producers to the CBPS.<sup>65</sup>

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<sup>63</sup>. Kedward et al. (2020). Managing nature-related financial risks: a precautionary policy approach for central banks and financial supervisors. Read [online](#). <sup>64</sup>. GTAG (2023). Applying the UK Green Taxonomy to wider principles: The value case and options. Read [online](#). <sup>65</sup>. van Lerven et al. (2021). Greening Finance to Build Back Better. Read [online](#).

- **Existing databases of companies engaged in the most environmentally harmful activities**, including notably fossil fuel expansion and tropical deforestation. Examples include databases produced by Rainforest Action Network and Urgewald, which outline companies engaged in fossil fuel expansion, and Forests and Finance, which lists companies whose operations may impact natural tropical forests.<sup>66,67,68</sup>
- **Historic carbon emissions data**, accessible through various sources, could be used to make assessments at the entity level. The onus could also be placed on financial institutions to provide such data for collateral they seek to pledge.
- **Forward-looking transition plans** could also be required, and could be used to assess whether an entity's planned activities are in line with environmental goals.

Further work is needed to capture the environmental footprints of non-corporate financial asset classes accepted as collateral, particularly pooled assets such as groups of bonds or mortgage loans, which require the additional steps of identifying the underlying assets, and assessing the environmental impacts of all assets included according to their relative proportions. Whilst the latter step may be relatively straightforward, granular data on the assets making up pools of securities can prove challenging.<sup>69</sup>

## Negative screening

Negative screening describes excluding some assets from collateral eligibility, which in effect constitutes a 100% haircut. Criteria for negative screening could theoretically be based upon any of the metrics outlined above, or a combination thereof. Perhaps the most easily implementable first step would be to negatively screen for activities that are most clearly incompatible with net zero in line with scientific evidence, including companies who are expanding production of fossil fuels.<sup>70</sup> This reflects the approach taken to the Bank of England's greening of the CBPS for firms that generate revenue from thermal coal production, however going beyond coal and applying exclusions to all fossil assets would ameliorate one of the major failures of the CBPS greening programme.<sup>71,72</sup> Negative screening could also be implemented for activities linked to the destruction of high biodiversity ecosystems.<sup>73</sup>

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**66.** RAN (2023). Banking on Climate Chaos. Read [online](#). **67.** Urgewald's [Global Oil & Gas Exit List](#) is a detailed database of companies that account for 95% of total global oil and gas production. Urgewald's [Global Coal Exit List](#) provides a database for companies engaged in coal production. Both are specifically designed for use by the financial sector. **68.** [Forests and Finance](#) data details 300 companies whose operations may impact natural tropical forests. **69.** Dafermos et al. (2022). Greening collateral frameworks. Read [online](#). **70.** IEA (2023). Net Zero Roadmap: A Global Pathway to keep the 1.5°C Goal in Reach. Read [online](#). **71.** Bank of England (2021). Greening our Corporate Bond Purchase Scheme (CBPS). Read [online](#). **72.** Dafermos et al. (2022). An environmental mandate, now what? Alternatives for greening the Bank of England's Corporate Bond Purchases. Read [online](#). **73.** Kedward et al. (2020). Managing nature-related financial risks: A precautionary approach to financial policy for central banks and financial supervisors. Read [online](#).

## Positive screening

Positive screening describes providing preferential treatment for assets that finance green or transition activities, such as green or sustainable bonds, or non-green labelled assets from companies that engage in green activities that would not otherwise be eligible in the collateral framework. This could include collateral eligibility to such assets, providing them with preferential treatment, or the reduction of haircuts, which may have signalling effects to the market and improve credit conditions for financing green activities by increasing liquidity. However, positive screening for green or sustainable bonds carries significant greenwashing risks, and would need to be of sufficiently high credit quality. Acceptance would therefore require stringent screening and monitoring from the central bank, particularly for green assets issued by high-carbon companies, which for instance could have additional entity-level conditions applied.<sup>74</sup>

## Calibrating collateral haircuts

For assets accepted as collateral, haircuts can be adjusted in accordance with environmental footprints to ameliorate the benefits currently enjoyed by harmful assets. Calibrating haircuts can involve both applying greater haircuts for dirty assets, and reducing haircuts for greener assets. This could be implemented with various levels of granularity.

One approach includes assigning companies into ‘buckets’ according to environmental performance, similarly to the Bank’s approach to greening the CBPS, and adjusting haircuts for assets in each bucket. Adjusting haircuts could be done in various ways, but would involve increasing haircuts for the securities of firms placed in more environmentally damaging buckets, with reduced haircuts for the securities of firms placed in more environmentally aligned buckets, with options for increasing granularity at the asset level.

Researchers modelling the effectiveness of increasing collateral haircuts for carbon intensive assets versus decreasing haircuts for lower carbon assets have found both measures to be effective in increasing carbon neutral investment and decreasing carbon intensive investment and emissions.<sup>75</sup> Notably, they conclude that applying penalising haircuts for high-carbon assets ought to be considered feasible even in the most narrow interpretation of central bank mandates.

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<sup>74</sup>. Flood, C. (2022). Fears rise over ‘greenwash’ bonds. Read [online](#). <sup>75</sup>. McConnell et al. (2022). Central bank collateral as a green monetary policy instrument. Read [online](#).

## Requiring pools of collateral to align with environmental objectives

An approach that could be used as an alternative to, or alongside, directly altering collateral haircuts, is requiring counterparties' overall collateral pools to be aligned with specific environmental targets in order to access central bank liquidity. This could be underpinned by an 'environmental footprint' approach by basing alignment requirements on metrics such as a collateral pool's carbon footprint, thus addressing the inadequacy of calculating environmental risks in monetary terms, such as probability-based climate-related financial risk metrics, as is outlined above.<sup>76</sup>

However, an alignment approach is likely to be less effective than more direct interventions such as negative screening and adjusting collateral haircuts. This is because such an approach lacks the powerful signalling impact of the central banks' direct changes to the framework, which, as described in Section 2, extends beyond just assets pledged as collateral.<sup>77</sup> Thus, the more direct influence of the central bank carrying out negative screening and adjusting haircuts means that these are likely to be more effective tools for rebalancing the framework's carbon bias. Furthermore, as pointed out by the NGFS, such an approach would constitute a new type of rule, and would likely increase complexity for both counterparties and for the central bank who would be required to monitor alignment in order to ensure effectiveness.<sup>78</sup>

### 3.3 Case studies

Several central banks have begun, or announced an intention to begin, altering their collateral frameworks to reflect environmental risks and impacts. The European Central Bank (ECB) and the People's Bank of China (PBoC) have taken the most significant steps towards greening. The Central Bank of Hungary - the Magyar Nemzeti Bank (MNB) - introduced lower haircuts for green securities in 2021, applying a 20% discount (with a maximum of 5 percentage points) for green securities pledged. The MNB has made environmental sustainability disclosures a prerequisite for maintaining preferential haircuts.<sup>79</sup>

Further behind on implementation, the Bank of Canada, Bank of Indonesia, and Bank of Korea are all considering the acceptance of green bonds within their collateral eligibility frameworks.<sup>80</sup> Examining the approaches of the ECB and the PBoC can provide an insight into some of the pitfalls that ought to be avoided by the Bank of England in its approach. Whilst the greening of central bank operations, including collateral frameworks, will be most impactful for maintaining price and financial stability if ambitious measures are enacted by central banks' globally, the Bank of England, has an opportunity to lead by example as a major central bank, in taking ambitious action to green it's operations.

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<sup>76</sup> Oustry et al. (2020). Climate-related Risks and Central Banks' Collateral Policy: a Methodological Experiment. Read [online](#). <sup>77</sup> Vestergaard, J. (2021). Monetary Policy for the Climate? A Money View Perspective on Green Central Banking. Read [online](#). <sup>78</sup> NGFS (2021). Adapting central bank operations to a hotter world: Reviewing some options. Read [online](#). <sup>79</sup> Yadav, S. and Livingstone, Z. (2024). [Positive Money's Green Central Banking Analysis of the Central Bank of Hungary](#). <sup>80</sup> Eames, N. and Barmes, D. (2022). The Green Central Banking Scorecard: 2022 Edition. Read [online](#).

## Box 2: The European Central Bank's (ECB) approach to greening the collateral framework

The European Central Bank (ECB) began to accept sustainability-linked bonds as collateral in 2021.<sup>81</sup> It then committed to green its collateral framework in 2022, with measures expected to be in place by the end of 2024.

The ECB outlined two key initial steps it would take:

1. Reflecting the approach described in section 3.3 of requiring pools of collateral to align with environmental objectives, the ECB plans to *“limit the share of assets issued by entities with a high carbon footprint that can be pledged as collateral by individual counterparties when borrowing from the Eurosystem”*.<sup>82</sup> The limits will first apply only to marketable debt instruments issued by non-financial companies, with scope for the regime to be expanded as climate-related data becomes more readily available for other asset types. Details of the requirements to be imposed are yet to be announced, however this means that counterparties' overall collateral pools will be subject to maximum greenhouse gas emissions requirements.
2. The ECB also stated it would consider climate related risks when reviewing collateral haircuts. However, after reviewing haircuts in 2022, the ECB dismissed the need for any changes in relation to climate risk, stating that they did not find, *“empirical evidence that necessitates amendments to the haircut schedule based on climate change considerations, as the updated haircut schedule is already sufficiently protective against climate-related financial risks”*.<sup>83</sup> The ECB's failure to adjust haircuts clearly demonstrates the limitations of an approach that assumes financial markets have the capacity to, and are already, sufficiently pricing in ecological risks via their own risk assessments. The ECB concluded that unexpected climate transition risks would be unlikely to materialise within the short time horizon required for asset liquidation upon default, and that market estimates of climate change risks and a resulting impact on asset price volatility would be sufficient in influencing the ECBs haircut calibration process.<sup>84</sup> The ECB itself has acknowledged that *“serious doubts”* have been raised as to the ability of the market to price in climate risks, and research has demonstrated that current models used to estimate these risks are severely underestimating the likely physical and transition risks.<sup>85</sup> This underscores the need for the Bank of England to go beyond the ECB's 'single materiality' approach and adopt a 'double materiality' approach to greening (box 1).

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81. ECB (2020). ECB to accept sustainability-linked bonds as collateral. Read [online](#). 82. ECB (2022). ECB takes further steps to incorporate climate change into its monetary policy operations. Read [online](#). 83. ECB (2022). ECB reviews its risk control framework for credit operations. Read [online](#). 84. Adler et al. (2023). ECB Occasional Paper Series: The valuation haircuts applied to eligible marketable assets for ECB credit operations. Read [online](#). 85. Keen, S. (2023). Loading the DICE against Pensions. Read [online](#).



### Box 3: The People's Bank of China's (PBoC) approach to greening its collateral framework.

The PBoC began in 2018 accepting green bonds, loans, and securities with an AA rating and above as collateral in their Medium Term Lending Facility, which as of 2020 accounted for over 50% of the PBoC's lending facilities to Chinese Banks. The PBoC also gave green bonds a priority status beyond other bonds. The PBoC also began accepting green loans as collateral as part of their standing lending facility.<sup>86,87</sup> Such an approach reflects an 'environmental footprint' approach by considering the environmental impact of assets. However, as outlined in the previous section, positive screening in this way relies upon robust definitions of 'green' to avoid greenwashing. The PBoC did not apply further conditionalities such as considering issuers' emissions, leaving the potential for green bonds from high-emitting companies to contribute to greenwashing. Moreover, without accompanying exclusions for assets incompatible with the green transition and haircuts calibrated to issuers' environmental impacts, such an approach has limited potential to address the eligibility bias enjoyed by environmentally damaging assets or apply penalties.

Nevertheless, researchers at the Banque de France find that the pricing effect of the PBoC's approach is "*large in magnitude*", increasing the spread between green and non-green bonds by 46 basis points, thus illustrating the significant signalling effect of central bank policies.<sup>88</sup> Moreover, collateralised refinancing schemes have also been credited with facilitating China's rapid decarbonisation, with the PBoC's carbon emission reduction facility driving RMB 670 billion (£75bn) of loans between November 2021 and April 2023, which the central bank claims has led to a 150 million ton cut in emissions.<sup>89</sup> Green collateral frameworks with green refinancing schemes are therefore complementary activities which can mutually-reinforce each other in decarbonising the real economy.

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**86.** Choi et al. (2020). Green Banking in China - Emerging Trends. Read [online](#). **87.** Macaire, C. and Naef, A. (2021). Greening Monetary Policy: Evidence from the People's Bank of China. Read [online](#). **88.** ECB (2022). ECB reviews its risk control framework for credit operations. Read [online](#). **89.** Gang (2023). Proactively implementing the philosophy of green development to peak carbon emissions before 2030 and achieve carbon neutrality before 2060. Read [online](#).

## Section 4: Recommendations for greening the Bank of England's collateral framework

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Considering the above discussion of options and case studies, it is possible to arrive at the following recommendations for the Bank of England, underpinned by an environmental footprint approach to greening the collateral framework:

### **1. Develop a science-based framework to assess the environmental footprints of assets**

As outlined in the previous section, assessing an entity's environmental footprint is not an easy task, but can be captured through a combination of metrics and qualitative assessments at the sector, activity and entity level.

Importantly, a framework must clearly identify activities that are incompatible with meeting environmental goals in line with scientific evidence, to allow for negative screening of issuers that are engaged in such activities.<sup>90</sup> Environmental goals countries like the UK are committed to include limiting temperature increases to 1.5 degrees in line with the Paris Agreement, and halting and reversing biodiversity loss by 2030 as agreed in the Global Biodiversity Framework.

Beyond this, firm-level indicators, such as backwards-looking data on absolute emissions and reduction progress, and forward looking data including transition plans, can also be used to make assessments within sectors, so as not to undermine the efforts of companies who are in the process of transitioning with robust transition plans in place. However, it is important that any 'tilting' within sectors does not come at the expense of excluding from collateral eligibility sectors that scientific evidence demonstrates are incompatible with environmental goals.

### **2. Negatively screen for and exclude assets from issuers whose main economic activity is incompatible with climate and environmental goals, starting with fossil fuel producers.**

As outlined by the NGFS, excluding eligibility has a stronger impact on firms' financing conditions than changes in haircuts, as it has the effect of applying a haircut of 100%.<sup>91</sup> Negative screening should be applied to assets issued by firms' whose main activities are incompatible with environmental goals, as outlined above. Such an approach would mirror the Bank's exclusion of assets from issuers with any coal mining activities in its greening of the CBPS. However, the urgency of the climate crisis and the abundance of evidence that we must rapidly phase out fossil fuel production means that it is imperative that all firms whose main economic activity arises from fossil fuel production are excluded in the banks' approach. Exclusions could also be applied for companies lacking science-based transition plans. Negative screening could be complemented with positive screening, to allow the overall amount of eligible collateral to remain adequate, with the composition of collateral and applied haircuts being determined based on environmental considerations.

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<sup>90</sup>. Examples include: RAN (2023) [Banking on Climate Chaos](#), Urgewald (2023) [Global Coal Exit List](#) and Urgewald (2023) [Global Oil and Gas Exit List](#). <sup>91</sup>. NGFS (2021). [Adapting central bank operations to a hotter world: Reviewing some options](#). Read [online](#).

### **3. Apply higher haircuts to assets depending on issuers' environmental footprint.**

Once indicators to evaluate the environmental footprint of issuers are established, this can be used to apply gradually higher haircuts to assets depending on their environmental footprint, to penalise issuers and sectors with the largest environmental footprint, while, at the same time, implicitly rewarding the best performers and companies with more robust transition plans within the sector, reflecting a similar principal to how the Bank of England approached the greening of its corporate bond purchase scheme. The granularity of this approach can vary and could become more sophisticated over time.

### **4. Increase transparency over the Bank of England's collateral operations, including disclosing the environmental footprint of collateral holdings.**

To improve transparency over its operations and enable better engagement by civil society, the Bank should disclose backwards-looking data on the amount of each asset type that it holds as collateral, as is currently made public by the ECB on a regular basis.<sup>92</sup> To go further, the Bank should also disclose the sectoral makeup of assets it holds as collateral from non-financial corporates, to give transparency as to the relative proportions of different sectors that benefit from collateral eligibility, and make public its holdings per issuer.

The Bank should also disclose greater detail of the methodology it currently uses to assess collateral eligibility and haircuts, including how due diligence questionnaire responses to questions on climate change risk are incorporated. As the Bank works to green its collateral framework, it should disclose the framework it develops for assessing the environmental footprint of eligible collateral, and its strategy for aligning the framework with environmental goals. Disclosing companies' 'scores' against the framework developed would also provide an important signal to the market about companies' environmental performance and how this will be perceived by supervisors and other market participants as the green transition accelerates.<sup>93</sup> Environmental footprint metrics for collateral holdings could also be included within the Bank's annual climate-related financial risk disclosures, alongside metrics currently published on the Bank's own asset holdings.

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<sup>92</sup>. See for detail: ECB (2023). Eurosystem Collateral Data. <sup>93</sup>. Dafermos et al., (2022). An environmental mandate, now what? Alternatives for greening the Bank of England's Corporate Bond Purchases.

## Conclusion

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The Bank's failure to integrate environmental risks into its collateral framework undermines the Bank of England's primary mandates for financial and price stability, as well as its secondary mandate to support the UK Government's transition to net zero. Greening the collateral framework and ending the advantages it currently awards to environmentally damaging assets, is a common-sense next step for the Bank of England, especially given the likely increasing importance of the collateral framework in determining financial sector liquidity. In doing so, the Bank should take an ambitious and comprehensive approach that accounts for the impact of assets on the environment in alignment with climate science.

## Appendix: Sample of companies whose bonds the Bank of England accepts as collateral

| Company          | Eligibility | Sector               | Notes   |
|------------------|-------------|----------------------|---|
| Shell            | Level C     | Oil & Gas Extraction | Shell is a major oil and gas producer that continues to approve new oil and gas exploration, which is incompatible with limiting temperature rises in line with the Paris Agreement. Oil Change International ranked Shell the third company globally for the amount of new oil and gas production approved for development in 2022. <sup>94</sup> Shell also extracts a high proportion of its oil and gas via particularly environmentally destructive unconventional forms of extraction, including ultra deepwater and arctic drilling, fracking, and tar sands extraction. Based on the IEA's Net Zero Emissions scenario, Shell's expansion plans are not aligned with a 1.5°C world. <sup>95</sup> |
| TotalEnergies SE | Level C     | Oil & Gas Extraction | TotalEnergies is a major oil and gas producer that is expanding oil and gas production, which is incompatible with meeting Paris Agreement goals. The company does not appear to be changing its model, for instance, in 2022 it spent 8 US dollars on oil and gas investment and shareholder payouts for every 1 US dollar spent on 'green' investments. <sup>96</sup>   |

<sup>94</sup>. Oil Change International (2023). Data Update: Shell's Oil and Gas Project Pipeline. Read [online](#). <sup>95</sup>. Urgewald (2023). 2023 Global Oil & Gas Exit List. Access [online](#). <sup>96</sup>. See 94.

| Company   | Eligibility | Sector        | Notes   |
|---|-------------|---------------|---|
| BHP Billiton Finance Ltd<br><br>(Subsidiary of BHP Group Ltd) | Level B     | Mining        | BHP Group extracts metal ores, and is one of the world's largest producers of thermal coal. Whilst BHP has signalled that it is looking to wind-down its thermal coal assets, it is still due to have thermal coal mines in operation until the end of this decade, and it plans to continue to produce metallurgical coal, the phase out of which is possible and required to meet net zero by 2050. <sup>97,98</sup> The company has been implicated in numerous cases of environmental and social damage, and it is now facing a lawsuit of up to £36 billion as a result of a catastrophic dam failure in Brazil that killed 19 people and wiped out entire villages. <sup>99,100</sup> The company is also attempting to push ahead with a controversial project to develop a new copper mine in Arizona, US, that would require destroying an Apache holy site, in a partnership with fellow mining giant Rio Tinto. <sup>101</sup> |
| Rio Tinto   | Level B     | Mining        | Rio Tinto is a mining company, extracting various commodities including metals, salt and diamonds. The company's activities in countries including Madagascar, Australia and Mongolia have caused significant biodiversity loss and health risks to local communities. The company is also currently attempting to push ahead with a controversial project to develop a new copper mine in Arizona, US, that would require destroying an Apache holy site, in a partnership with BHP Group. <sup>102</sup>  |
| Emirates Airlines   | Level C     | Air Transport | Emirates Airlines is a major aviation company. The industry is fundamentally incompatible with Paris Agreement goals. Across the transport sector, aviation is the mode of transport with by far the highest climate impact per passenger, and there is no credible evidence that any airline is transitioning to a zero-carbon model, or that this is possible. <sup>103</sup>   |

<sup>97</sup>. The Times (2023). BHP to sell two coking coalmines in Australia. Read [online](#). <sup>98</sup>. BankTrack (2023). Metallurgical coal: Time to call it off. Read [online](#). <sup>99</sup>. Financial Times (2023). BHP aims to settle over Brazil dam disaster. Read [online](#). <sup>100</sup>. London Mining Network. (2021). BHP. Read [online](#). <sup>101</sup>. E&E News (2023). Biden admin hits pause on Ariz. copper mine. Read [online](#). <sup>102</sup>. Ibid. <sup>103</sup>. Stay Grounded (2019). Degrowth of aviation: reducing air travel in a just way. Read [online](#).

| Company       | Eligibility | Sector  | Notes   |
|---------------|-------------|---------|---|
| Japan Tobacco | Level C     | Tobacco | The Tobacco Industry is not only a well-documented direct threat to public health, but also damages the environment through its production and use. Growing tobacco is resource intensive, requiring heavy use of fertilisers and pesticides that deplete biodiversity, as well as being more water-intensive than most food crops. Tobacco farming accounts for approximately 5% of global deforestation, and manufacture of tobacco products is particularly carbon-intensive due to resource use and logistics. <sup>104</sup> |

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