



# EEFIG

ENERGY EFFICIENCY  
FINANCIAL INSTITUTIONS GROUP

Launch and facilitate the implementation of  
new EEFIG Working Group “Applying the  
Energy Efficiency First principle in sustainable  
finance”

## Final Report

*The information and views set out in this study are those of the author(s) and do not necessarily reflect the official opinion of the European Commission.*



**EUROPEAN COMMISSION**

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Directorate B: Just Transition, Consumers, Energy Efficiency & Innovation

Unit B.2 — Energy Efficiency

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# Launch and facilitate the implementation of new EEFIG Working Group “Applying the Energy Efficiency First principle in sustainable finance”

## Final Report

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# Executive Summary

*Final Report for the EFIG Working Group (WG14B) "Applying the Energy Efficiency First Principle in Sustainable Finance".*

**Energy efficiency is the single largest measure to avoid energy demand in the Net Zero Emissions by 2050 Scenario, along with the closely related measures of electrification, behavioural change, digitalisation and material efficiency<sup>1</sup>.** *International Energy Agency*

The **energy efficiency first principle** is one of the five pillars of the European Union energy strategy, and appears in several key pieces of legislation, however its understanding and application in the economy, and in particular within the financial sector, is limited. This means that energy efficiency remains invisible and neglected in too many decisions, and many projects and assets are financed without considering the full potential range of cost-effective energy efficiency measures, thus locking in excessive levels of energy demand for years and even decades to come.

This situation can be improved if more financial institutions implement the energy efficiency principle. There is often a positive business case and market opportunity for energy savings which also provides climate transition risk reduction, but identifying and evaluating this case requires changes to policies and processes, as well as the use of specialised tools. Implementing the energy efficiency first principle would make consideration of energy efficiency more explicit in both investment and lending processes.

This EFIG working group ("WG") was established to observe and analyse current practices within the financial sector to put energy efficiency first, in the context of the growth of sustainable finance; consider and identify the types and designs of tools that may be used by financial institutions to implement an energy efficiency first principle; and formulate recommendations to promote the use of the principle within the finance sector. The WG also reviewed and

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<sup>1</sup> <https://www.iea.org/reports/energy-efficiency>

provided feedback from a financial institution's perspective on the EC's energy efficiency first guidelines published in September 2021.

This work is the result of a combination of WG meetings, sub-groups, desk research, case studies, interviews and a survey. The WG comprised forty active members, the majority of which were from the financial sector and representing a range of types of financial institution.

### **The level of awareness and focus on energy efficiency is still limited**

The WG concluded that the level of awareness and focus on energy efficiency is surprisingly limited in the financial sector, despite the significant role energy efficiency can play in mitigating climate change and its potential to contribute to sustainable finance. There are a limited, but growing, number of specialist investment funds and lending facilities dedicated to energy efficiency but their aggregate investment capital is very small compared to the size of the opportunity. Energy savings opportunities should be considered in *all* investment, lending decisions and use of financial institution influence (stewardship/engagement) with investees/borrowers where energy use is material. This can only be achieved if the use of the energy efficiency first principle is mainstreamed, and the WG's policy recommendations are implemented.

The identification of energy savings opportunities should be a normal part of investing/lending processes and operationalising the energy efficiency first principle is a way to achieve this. However, even if financial institutions improve the focus on energy efficiency, there is likely to be a difference between a societally optimal improvement in energy efficiency and how financial institutions define and assess the materiality of energy efficiency.

### **The public banks and exemplar private institutions show what can be achieved.**

In the sectors in which they are active, public banks, including EBRD, EIB and KfW, are among the most advanced in incorporating energy efficiency into their investment and decision-making processes as an integral part of their wider sustainability efforts. These offer tested examples and models for the private sector to learn from. In the private sector, there are a limited number of excellent examples of financial institutions prioritising energy efficiency. These leading public and private institutions have developed internal tools to help them direct investment into higher energy performing assets and undertake energy saving upgrades, but they remain outliers. Some of these institutions also offer tools to assist their customers to strengthen their prioritisation of energy efficiency and this is a valuable lever to increase deployment of capital into energy efficiency.

### **Integration of energy efficiency with wider sustainability policies and programmes is essential but the external**



**frameworks being referenced by financial institutions do not emphasise the importance of energy efficiency.**

Institutions that have made progress on placing energy efficiency first show that it must be integrated into the organisation's wider sustainability, business and climate agenda and policies and not sit as something separate. Although the EU Taxonomy clearly reflects energy efficiency considerations, in the opinion of the working group, current ESG and sustainability reporting systems do not sufficiently highlight the importance and value of energy efficiency. Further, real estate investors are using asset management tools which do not adequately connect energy efficiency investing/lending with good stewardship. The working group recommends that the Platform on Sustainable Finance and EBA mortgage and loan alignment advice takes a more detailed look at how the benefits of energy efficiency investments can be highlighted and included in other guidance. Disclosure issues may improve with the completion of the European Sustainability Reporting Standards and CSRD, but the priority gap needs to be addressed and multi-stakeholder action required can be catalysed by the EU Commission working with Member States and financial regulators.

**There is a need for changes to procedures and tools at three levels: policy and governance, portfolio and deal level.**

As well as integrating energy efficiency into wider sustainability, business and climate policies, **adopting the energy efficiency first principle requires changes to organisational processes and procedures at three levels: policy and governance, portfolio, and deal level – and tools to help internal teams as well as customers.** Financial institutions' investment, lending and stewardship policies should be strengthened to better ensure energy efficiency is considered – when material – and these changes need to be communicated to originators as well as customers and clients. Policies need to be explicit, for example: 'We will always offer funds to renovate properties with an EPC of C or below even if unsolicited by clients'.

At the level of financial institutions' internal policies and governance, the links between the energy efficiency performance of assets and risk management need to be better understood, measured and reported on. It must be recognised that energy efficiency investment will not always make economic sense in the absence of policy sticks or carrots – payback periods may be too long, or financial savings too modest or uncertain to justify the upfront expenditure. However, improved energy efficiency can reduce financial risks<sup>2</sup>, stranded asset risk<sup>3</sup>, and transition risks and these linkages need to be considered by more financial institutions. Finally, at the policy and governance level it is important to

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<sup>2</sup> European Commission, Directorate-General for Energy, *The quantitative relationship between energy efficiency improvements and lower probability of default of associated loans and increased value of the underlying assets : final report on risk assessment*, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2833/532126>

<sup>3</sup> CRREM 2022 Definition of Stranded Asset Risk <https://www.crrem.eu/wp-content/uploads/2022/12/CRREM-initiative-definition-on-stranding-risk-and-stranded-assets-in-the-build-environment.pdf> CRREM 2022 Definition of Stranded Asset Risk <https://www.crrem.eu/wp-content/uploads/2022/12/CRREM-initiative-definition-on-stranding-risk-and-stranded-assets-in-the-build-environment.pdf>

implement safeguards to ensure that energy efficiency opportunities are not missed, and that respective policies and procedures are followed.

At the level of a portfolio, or portfolios, tools are needed to measure portfolio energy efficiency performance, identify pathways to improve, and report on progress. These tools exist and are being applied especially in the institutional investor real estate sector – but their effectiveness is constrained in some cases by the fact the energy usage data cannot be reliably obtained from occupiers where buildings are rented out.

The WG identified more than twenty-five tools overall which are described in Chapter 5, with seven at portfolio level shown in Chapter 5.5. The principles of these portfolio tools are common although the specific metrics, and pathways will be different across different sectors and asset classes.

At the level of an individual deal or transaction there are several types of tools that include: guidance for originators; guidance, apps and technical assistance for customers; and due diligence questionnaires. Examples of fifteen deal level tools have been identified by the WG and can be found in chapter 5.6. We note that sub-sector specific versions of these tools tailored to different types of underlying assets and financial products are necessary to increase energy efficiency investing and lending. Again, the effectiveness of these tools ultimately depends on the availability of energy usage data, which is often poor where buildings are rented out – see Summary Recommendations below for the proposed solution to address the lack of transparency in actual energy consumption at an asset level.

The WG identified good examples of the application of energy efficiency first within the financial sector, in both public banks and private institutions. These show that adopting the energy efficiency first principle can positively affect the deployment of capital and reduce the frequency of missed opportunities. The approach does, however, require a systematic process change at several levels, and it also requires a more proactive approach to the development of projects and financing opportunities than is often the norm. Ultimately, financial institutions do not usually decide the level of energy performance of any particular project or asset, but they can steer the investee or borrower using several levers including internal due diligence and safeguard policies to identify and prioritise energy savings, as well as guides and technical assistance for customers.

**Each sub-sector within the finance sector need different tools.**

While the overarching principles for implementing an energy efficiency first approach are the same between sectors, the tools needed by different segments of the financial sector are institution type- or asset class-specific, and there is no single tool for all segments. Net zero financial institution initiatives continue to develop asset class specific guidance, but energy efficiency is only really considered within institutional real estate guidance. Each sub-sector needs specific guidance and tools based on a set of common principles which this

report develops. Investment and operational processes for asset managers for different asset classes are very different to those of retail banks or for asset owners (pension funds, insurers). The development and dissemination of guidance for financial institutions is best done in coordination with sub-sector specific associations<sup>4</sup> and by working with energy efficiency leaders in each field to ensure maximum buy-in and consensus.

**There is a need for finance sub-sector specific guidance for high-level decision makers on the benefits of adopting energy efficiency first.**

In addition there is a need for finance sub-sector specific guidance (eg. for asset managers, for lenders, for investment advisors) on energy efficiency first from the Commission (or its technical bodies) aimed at high-level decision makers within financial institutions. This should set out the benefits of adopting an energy efficiency first policy, particularly in regard to risk management, and guidance on how to implement such a policy. This high-level guidance is a precursor to adopting the policy and sub-sector, and organisation-specific tools.

**The survey on the EC's Energy Efficiency First Guidelines support the conclusions that the level of understanding of energy efficiency within the financial sector needs to improve and that an important opportunity can be unlocked.**

Chapter 4 of this report contains the WG's feedback from the finance perspective on the EC's Energy Efficiency First Guidelines that were published in September 2021. This feedback was gathered through bilateral engagement, written submissions and through a survey of WG members and WG discussions. The findings reinforce the conclusions of this report and show that the level of knowledge and understanding of energy efficiency within the financial sector needs to improve, there is a need for more data on energy performance, and an important opportunity that can be unlocked by including energy efficiency related questions within due diligence and investment processes.

## Summary Recommendations

Increasing the adoption of energy efficiency first within financial institutions will require a multi-layered approach involving many stakeholders. The WG makes recommendations for policy makers, financial institutions and other stakeholders that are summarised as follows:

### Recommendations for public policy makers

There is a need for tighter dialogue between public policy makers and financial institutions and efforts to build capacity in key areas. Separate recent/forthcoming EEFIG reports which can be used as the basis for capacity building include: Methodologies for multiple benefit analysis and monetising of

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<sup>4</sup> Such as the Institutional Investors Group on Climate Change (IIGCC), UNEP FI Net Zero Banking Alliance, European Real Estate Association, C.

energy efficiency projects<sup>5</sup>; techniques for aggregating small-scale projects and the establishment of new financial instruments that blend public and private finance<sup>6</sup>; and improved energy data availability and use<sup>7</sup>.

### **Better linkage of policies and regulations with science-based energy efficiency metrics being used by financial institutions**

The Horizon 2020 and investor funded Carbon Risk Real Estate Monitor (CRREM) initiative is perhaps the most successful Horizon 2020 energy efficiency projects in terms of adoption by financial institutions. [CRREM](#) translates climate science to the level of different building types (warehouse, office, home etc) by country to enable analysis of stranded asset risk and net zero operational alignment. CRREM is integrated into net zero guidance for asset owners, asset managers and listed real estate companies<sup>8</sup>. CRREM is integrated in the annual real estate sustainability evaluation GRESB, which was used by asset owners and funds with USD 7 trillion in real estate assets across 74 countries in 2022.

As regulations are more effective if they use metrics used by financial institutions, CRREM (which is being re-worked to increase its focus on energy efficiency) could be linked into an updated EU Taxonomy definition of deep retrofit and building acquisition, SFDR real estate fund disclosure, reform of Energy Performance Certificates, Minimum Energy Performance Standards (MEPs) and bank mortgage portfolio standards (MPS) under the Energy Performance in Buildings Directive (EPBD). This recommendation is supported by investors<sup>9</sup>.

### **Strengthen energy efficiency within corporate sustainability and financial institution reporting and disclosure processes.**

EEFIG recommendations and the Energy Efficiency Coalition should have a strong link with the Platform for Sustainable Finance, broader sustainable finance policies and provide input to corporate sustainability disclosure requirements. Financial institution disclosures should include descriptions of how processes for identifying, assessing and managing energy efficiency risks are integrated into the overall organisation risk management processes; the governance arrangements in relation to assessing and managing energy efficiency related risks and opportunities; and the actual and potential impacts of the principal energy efficiency related risks and

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5 European Commission, Directorate-General for Energy, Rohde, C., Toth, Z., Glenting, C., et al., *Multiple benefits of energy efficiency investments for financial institutions : final report : October 2021*, Publications Office of the European Union,

2022, <https://data.europa.eu/doi/10.2833/205185>

6 [https://eefig.ec.europa.eu/working-group-stimulate-consumers-demand-energy-efficiency-investments\\_en](https://eefig.ec.europa.eu/working-group-stimulate-consumers-demand-energy-efficiency-investments_en)

7 [https://eefig.ec.europa.eu/working-group-collecting-and-monitoring-data-energy-efficiency-investments-and-financing\\_en](https://eefig.ec.europa.eu/working-group-collecting-and-monitoring-data-energy-efficiency-investments-and-financing_en)

8 [www.unepfi.org/industries/the-net-zero-asset-owner-alliance-outlines-its-recommendations-for-asset-managers-in-private-markets/](http://www.unepfi.org/industries/the-net-zero-asset-owner-alliance-outlines-its-recommendations-for-asset-managers-in-private-markets/) and [www.parisalignedinvestment.org/media/2021/10/Net\\_Zero\\_Investment\\_Framework\\_final.pdf](http://www.parisalignedinvestment.org/media/2021/10/Net_Zero_Investment_Framework_final.pdf) [www.unepfi.org/industries/the-net-zero-asset-owner-alliance-outlines-its-recommendations-for-asset-managers-in-private-markets/](http://www.unepfi.org/industries/the-net-zero-asset-owner-alliance-outlines-its-recommendations-for-asset-managers-in-private-markets/) and [www.parisalignedinvestment.org/media/2021/10/Net\\_Zero\\_Investment\\_Framework\\_final.pdf](http://www.parisalignedinvestment.org/media/2021/10/Net_Zero_Investment_Framework_final.pdf)

and [www.epra.com/application/files/1816/6238/0026/CRREM\\_Guidelines\\_2022.pdf](http://www.epra.com/application/files/1816/6238/0026/CRREM_Guidelines_2022.pdf) and [www.epra.com/application/files/1816/6238/0026/CRREM\\_Guidelines\\_2022.pdf](http://www.epra.com/application/files/1816/6238/0026/CRREM_Guidelines_2022.pdf)

9 IIGCC 2022 [www.iigcc.org/resource/iigcc-letter-on-eu-energy-performance-of-buildings-directive-epbd/](http://www.iigcc.org/resource/iigcc-letter-on-eu-energy-performance-of-buildings-directive-epbd/) IIGCC 2022 [www.iigcc.org/resource/iigcc-letter-on-eu-energy-performance-of-buildings-directive-epbd/](http://www.iigcc.org/resource/iigcc-letter-on-eu-energy-performance-of-buildings-directive-epbd/)

opportunities on the strategy and business model. Disclosure of how the energy efficiency performance of each portfolio, where energy performance is material, has changed over time is also recommended. Real estate associations have made joint recommendations<sup>10</sup> to TCFD, ISSB and the UK FCA regarding ESG metrics for real estate.

**Create real estate specific reforms to SFDR and fund labelling guidance to encourage energy efficient building renovation.** Based on in-depth interviews with investors, the European Association for Investors in Non-Listed Real Estate Vehicles (INREV)<sup>11</sup> and members of our WG concluded that the SFDR does not encourage brown to green asset transformation in real estate. Currently, the SFDR requires funds disclosing under Article 9 to be 'sustainable' at all times instead of transitioning an inefficient building (which is how real estate investors can best create sustainable impact). Not making such reforms is likely to lead to funds disclosing under Article 9 focusing on new construction or already sustainable renovated buildings. The European Securities and Markets Authority's 'Consultation on Guidelines on ESG funds' names using ESG or sustainability-related terms<sup>12</sup> risks perpetuating this issue.

**Better recognise energy efficiency within loan and green bond regulations.** More work should be commissioned on the role of financial institutions in the transition of client companies and portfolio assets. For example, the SFDR should encourage 'brown to green' investments. Currently, the SFDR is perceived by some market actors to preclude any fund focused on improving the energy efficiency of real estate being able to disclose under Article 9. Financial regulation – such as the way banks' or insurers' lending is risk-weighted – should be reviewed to ensure that it supports, and does not undermine, the financing of energy efficiency improvements to buildings. Otherwise, the market is unlikely to deliver the capital required for retrofit, and more of the heavy lifting will fall to the taxpayer. As an example, when part of a loan used to acquire a building also entails a part dedicated to the renovation, although EU Taxonomy compliant primary energy savings of more than 30% can be achieved, the result will not be an EPC class A nor be in the top 15% in terms of primary energy demand intensity. The Commission's mandate to the EBA for an advice on green loans will look at regulatory and non-regulatory ways to encourage green loans in the EU, and energy efficiency must be a core part of this.

**Require and/or enable better sharing of tenant energy use data with building owners and lenders.**

Collecting tenant energy data is a key challenge for real estate investors and lenders. Despite the growing use of green leases and technological advances regarding data management platforms, there is still a considerable data challenge as granular, actual data is preferred. Some jurisdictions, for example Australia and some major US cities, require

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<sup>10</sup> INREV 2022 <https://www.inrev.org/system/files/2022-04/Submission-to-FCA-TCFD-ISSB-Proposals-ESG%20Metrics-for-Real-Estate.pdf>

INREV 2022 <https://www.inrev.org/system/files/2022-04/Submission-to-FCA-TCFD-ISSB-Proposals-ESG%20Metrics-for-Real-Estate.pdf>

<sup>11</sup> INREV Jan 2023 <https://www.inrev.org/tax-regulations/regulations/sustainability-related-regulations>

<sup>12</sup> <https://www.esma.europa.eu/press-news/consultations/consultation-guidelines-funds-names-using-esg-or-sustainability-related>

building/tenant level energy disclosure. GDPR is often used as a reason not to transfer data but, at least for commercial buildings, GDPR does not appear to be applicable. ESG reporting systems should include and cover explicit energy consumption data.

**Work with investors and banks to reduce risk of wide-spread real estate stranded assets and carbon mispricing**

A group of leading real estate investors concluded<sup>13</sup> that there is a risk that carbon will be wrongly priced in real estate, leading to over-valuation of low energy performing assets. There are several reasons for this but one key reason is due to the large number of non-institutional real estate owners and tenants outside of 'prime'/high value regions, cities and neighbourhoods which have lower levels of expertise and knowledge on ESG/climate topics. As buildings in such locations may require higher retrofit investment levels, the development of minimum energy performance standards and different levels of expertise in the real estate market may create wider economic risks. Democratising access to data and knowledge through a market-accepted data warehouse with secure data rules could help all owners and tenants gain access to data on potential cost of retrofitting buildings. The future Energy Efficiency Finance Coalition could explore such solutions.

**Strengthen the role of investor public market stewardship including for improving corporate energy efficiency, within SFDR reform.** Investor shareholder and bondholder stewardship has a role to play in encouraging energy efficiency with publicly listed companies and their supply chains. While investors continue to strengthen stewardship activities, funds disclosing under Articles 8 and 9 of SFDR are largely divesting from carbon intensive companies<sup>14</sup> rather than engaging with them to encourage transition.

**Ensure Member State energy and other taxes/levies should integrate the energy efficiency first principle.** Analysis of major European countries' gas/power energy taxes found that investment in energy efficient heat pumps and other electrification technologies are disadvantaged. Options for rebalancing energy taxes and levies exist<sup>15</sup>. VAT and other taxes may also disadvantage efficient technologies/retrofits.

**Strengthen the link between electricity market reform and energy efficiency.** The EEFIG private sector Steering Committee's letter to Commissioner Simson in May 2020, called for policy change to enable utilities to procure or invest in energy efficiency demand reduction technologies/retrofits. In response, the EU Save Energy Communication committed to examine pay for performance schemes while the Renovation

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<sup>13</sup> ULI 2022 <https://knowledge.uli.org/-/media/files/research-reports/2022/breaking-the-value-deadlock-enabling-action-on-decarbonisation.pdf>

ULI 2022

<sup>14</sup> Goldman Sachs 2022 as cited in DWS 2022 – see p. 21 <https://www.dws.com/insights/global-research-institute/a-framework-for-european-transformation/> 21 <https://www.dws.com/insights/global-research-institute/a-framework-for-european-transformation/>

<sup>15</sup> RAP 2022 [www.raponline.org/knowledge-center/aligning-heating-energy-taxes-levies-europe-climate-goals/](http://www.raponline.org/knowledge-center/aligning-heating-energy-taxes-levies-europe-climate-goals/) RAP 2022 [www.raponline.org/knowledge-center/aligning-heating-energy-taxes-levies-europe-climate-goals/](http://www.raponline.org/knowledge-center/aligning-heating-energy-taxes-levies-europe-climate-goals/)

Wave Communication included the aim to establish a scheme for certifying energy efficiency meters. The Horizon 2020 supported project SENSEI<sup>16</sup> developed significant material that could support creation of a Pay for Performance market to reward efficiency as an energy resource and grid service. Retrofit projects receiving revenue from utility contracts could improve projects' financial viability and attract capital. Utilities in several US states already procure or contract with aggregators of retrofit projects<sup>17</sup>. Following the Commission's electricity market reform proposals<sup>18</sup> which include a focus on demand side flexibility, the Energy Efficiency Coalition could work with expert groups<sup>19</sup>, the energy industry and energy regulators to examine further policy/regulation and market practice changes to enable a pay for performance market.

### **Deepen EU support for energy efficiency investment in the Global South.**

Although specific constraints may be different, the learnings from this project and other EFIG Working Groups are relevant to all markets, not just Europe. Given that the Commission pushes the energy efficiency agenda globally, consideration should be given to how to enable EFIG and the new energy efficiency coalition to be replicated in major emerging markets. This could be through the International Platform for Sustainable Finance and the Coalition of Climate Finance Ministers.

**Within the property sector, tenancy regulation to make the provision of actual energy consumption data at the occupier level mandatory for the purpose of energy renovation planning and management** (so called "Green Leases"), would allow for more accurate benchmarking of the carbon performance of property investments and the alignment of assets with net zero pathways.

**Finally, policy makers should encourage and support the drafting and dissemination of guides on how to position the energy efficiency first principle in key sectors for financial institutions' boards.** These must build on existing guidance and obligations, set out the benefits of adopting the principle, and give high-level advice on how to implement it. They need to be sector and asset class specific and would best be produced and disseminated in coordination with relevant sector associations.

Recommendations for financial institutions

**Boards of financial institutions need to properly consider the business case for implementing the energy efficiency first principle.**

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<sup>16</sup> <https://senseih2020.eu/>

<sup>17</sup> SENSEI Pay for Performance case studies <https://senseih2020.eu/2020/06/10/our-latest-report-reviews-11-p4p-case-studies-and-sets-out-recommendations-for-the-eu/>

<sup>18</sup> [https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_23\\_1593](https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_1593)  
[https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_23\\_1593](https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_1593)

<sup>19</sup> Regulatory Assistance Project 2023 [www.raponline.org/knowledge-center/better-faster-stronger-look-into-further-electricity-market-reforms](http://www.raponline.org/knowledge-center/better-faster-stronger-look-into-further-electricity-market-reforms)  
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Once the decision to operationalise the energy efficiency principle has been taken, action is required on three levels: policy and governance, portfolio, and transaction.

At the **policy and governance level**, financial institutions should:

- 1. Assess the performance and risks inherent in the current levels of energy efficiency within their portfolios**, including financial risks, stranded asset risk, and transition risk, and put in place mechanisms to report on these risks as part of its non-financial reporting. Establish a baseline by portfolio.
- 2. Embed energy efficiency explicitly within wider sustainability policies and commitments.**
- 3. Modify investment and lending policies to explicitly target projects and assets with high levels of energy efficiency performance, or to improve energy performance of the assets owned, financed or to be acquired.**
- 4. Adopt explicit targets for energy efficiency investments and lending in each relevant portfolio**, taking into account ensuring overall environmental integrity, and install mechanisms to track and report progress against these targets.
- 5. Include energy efficiency reports in board agendas.** This would become more widespread if energy efficiency disclosures were mandated.
- 6. Initiate the development and implementation of appropriate energy efficiency first tools** at policy and governance level, portfolio level and deal level.
- 7. Identify the needs for more technical capacity among operational staff and needs for external support**, and resource them appropriately. EIB, EBRD and other NPBs already have best practice examples of this and could provide Technical Assistance.
- 8. Establish appropriate safeguards** to ensure that energy efficiency policies and procedures are followed.

At the **portfolio level**, financial institutions should:

- 9. Identify the current levels of energy performance within their portfolio(s)** and within target sectors, the potential for improving energy efficiency, including the likely capital requirements and impact on energy use and emissions, and the barriers to doing so.
- 10. Develop or adopt tools to measure the energy efficiency performance of their portfolio(s), identify pathways to improve**



**energy efficiency, and track progress over time.** These tools should link directly to risk management tools at the policy and governance level.

At the deal level, financial institutions should:

- 11. Identify and develop or adopt the most appropriate tools to help them identify and assess energy efficiency aspects of projects and assets to be financed.** These tools may include:
  - > Guides for originators
  - > Due diligence checklists
  - > Questions for approval processes
  - > Mechanisms to measure and verify energy efficiency performance over time (i.e. during the asset management phase).
- 12. Identify and develop or adopt the most appropriate tools that could help customers develop more energy efficient projects and assets to be financed.** These may include:
  - > Guides / apps / technical assistance packages
- 13. Consider developing specific financial products that help increase demand for energy efficient options** e.g. sustainability linked loans with lower interest rates tied to specific energy performance criteria, or tools that bundle advice to help customers identify suitable energy efficiency improvements with the finance to pay for them.

Recommendations for other stakeholders

- 1.** Given its importance in addressing emissions reduction, energy efficiency and **the energy efficiency first principle has to be made more explicit in widely used frameworks and reporting systems including TCFD, net zero finance initiatives and ESG frameworks.** Currently it is largely invisible.
- 2.** **The role of energy efficiency and its effects on financial, physical and transition risks is significant and signposting this within these frameworks will help accelerate adoption of the energy efficiency first principle.**
- 3.** **Bank and investor net zero initiatives should examine how energy efficiency could be better reflected within asset class net zero guidance.**
- 4.** **Standards organisations should consider the development of standards for due diligence questionnaires for energy efficiency improvement measures.** These templates should be developed for different sectors.

## Conclusions

In conclusion, the extent to which financial institutions adopt energy efficiency first is an essential driver of deployment of capital into energy efficiency. Examples from both the public and private sector demonstrate both what can be achieved and how to achieve it. The recommendations made in this report can both increase the proportion of financial institutions adopting the principle and provide guidance for institutions implementing it. The tools described can either be used directly, or serve as models for the development of sector or organisation specific tools.

# 1 Applying the energy efficiency first principle in sustainable finance

This section offers a framework for considering the energy efficiency first principle (EE1st) in the context of the transition to sustainable finance. After defining the challenge, we offer a high-level picture of the current regulatory framework for the energy efficiency first principle. This is followed by a problem statement and description of the EEFIG's approach to working with an expert group in its resolution.

## 1.1 The challenge

Europe cannot meet its 2030, nor its 2050, climate and energy targets, while increasing economic resilience, without significantly increasing investments in energy efficiency. Yet, even as a central part of Europe's response to climate change and energy security, energy efficiency investment remains a lower priority than is required to meet these crucial 2030 and 2050 targets.

The EU's increased climate ambition is defined in its Climate Law and within a to be agreed "Fit for 55" regulatory package that is designed to deliver a 55% cut in greenhouse gas emissions by 2030.

The European Commission calculates (SWD (2020) 98 final) that the overall transformation investment gap, in both public and private investments, in the built environment (i.e. residential and business energy efficiency) is EUR 180 billion per year. Specifically, existing Member State National Energy and Climate Plans (NECPs) identify in aggregate around EUR 62.6 billion extra energy efficiency investments per year from 2021–30.

When Russia invaded the Ukraine, the Commission's response was to launch the REPowerEU package to improve energy security and resilience. This included an immediate increase of the EU energy efficiency target from 9% to 13% by 2030 (compared to the 2020 reference scenario projection). In 2023 trilogue negotiations, a headline figure of 11.7% was agreed, which the Council defines as a binding 763 Mtoe final energy consumption in 2030 – a 21% reduction from 2021 levels. Clearly, this requires a strong acceleration in additional energy

efficiency investments compared to the current Member State National Energy and Climate planning scenarios to be “fit for 55”.

In order to meet the required levels of efficiency it is necessary to both increase interest in energy efficiency investments among consumers (and asset owners), and increase the pressure on, and from, financial institutions to ensure energy efficiency is considered within all investment decisions. This is in the context of a remarkable growth of sustainable investments in recent years, and the raised awareness of investors in sustainability generally. Yet, **notwithstanding the enormous growth of ESG-related and sustainable finance, energy efficiency remains surprisingly hard to identify and track as an investment aim** or specific criterion within the framework of sustainability. One reason for this may be the inherently incremental and marginal nature of energy efficiency improvements, rendering them less eye-catching and lower profile than grander projects. Another reason is that the energy usage data of companies or those occupying and using buildings is not generally available to those who finance them – this makes it difficult to measure energy efficiency and track improvements in financed energy performance. Furthermore, the small scale of many energy efficiency projects, and their diverse nature, make them hard to identify and track.

The challenge presented to EEFIG, and documented in this report, is how to operationalise the energy efficiency first principle in financial institutions and thereby increase investment into energy efficiency by including an efficiency consideration in all financial transactions, when energy use is material.

## 1.2 Policy frame for energy efficiency first

Energy efficiency first is one of the five pillars of the Energy Union strategy<sup>20</sup> launched in 2018. It is defined as follows:

***'energy efficiency first' means taking utmost account in energy planning, and in policy and investment decisions, of alternative cost-efficient energy efficiency measures to make energy demand and energy supply more efficient, in particular by means of cost-effective end-use energy savings, demand response initiatives and more efficient conversion, transmission and distribution of energy, whilst still achieving the objectives of those decisions.***

The energy efficiency first principle has been subsequently included in several landmark pieces of legislation including the Clean Energy for All Europeans package (2019/CE4ALL), the Electricity Directive (EU, 2019/944) and the Electricity Regulation (EU, 2019/943). The CE4ALL package provided a critical approach illustrated by a series of pathways to decarbonise the economy, among which economic and emissions efficiency is usually delivered by constraining inefficient energy demand and reducing waste. Finally, the energy

<sup>20</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1999>

efficiency first principle is included in the EU Green Deal, the EU Energy System Integration Strategy and the EU Renovation Wave and – of course – in the updated legislation under negotiation known as the “Fit for 55 package”.

It is perhaps worth pausing to note that the way the energy efficiency first principle is expressed and some of the language officially used to explain it can be problematic. This is illustrated by the following comment from the real estate lending sector, which accounts for a substantial component of European energy use and emissions, and must play a key role in decarbonising, principally by retrofitting existing buildings:

*'The way the EE1st principle is formulated and the routine references in associated guidance to "installations, facilities and networks" create the impression that it relates solely to energy and industrial infrastructure, and not to commercial and residential buildings.'*

A major question confronting older buildings that need to be improved or replaced is how to trade off the embodied carbon impact of demolition and rebuild, or even of refurbishment, against the potential savings in operating carbon (a question whose answer also depends on the nature of construction inputs and on the degree to which the grid has been decarbonised). It would be helpful if the EE1st principle and associated guidance were more explicit in indicating how that building lifecycle and whole life carbon question should be approached (and indeed whether EE1st is interested in the whole question, or only in part of it).

In explaining the EE1st principle, DG Energy states<sup>21</sup> that the principle “should also ensure that...investments in stranded assets are avoided”. In the real estate context, a little unfortunately, the term “stranded asset” is widely used to refer to buildings that cannot cost effectively be brought up to an energy performance standard that is consistent with minimum energy efficiency standards, net zero targets or other applicable pathways<sup>22,23</sup>. Yet a town centre office building, shopping centre or apartment block cannot simply be abandoned – it is not like a coal deposit that we can decide to leave underground. In other words, contrary to the statement cited above, buildings at risk of stranding, or that are stranded, will often be the ones most in need of investment if we are to tackle the 40% of emissions for which buildings are responsible.

<sup>21</sup> [https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficiency-targets-directive-and-rules/energy-efficiency-first-principle\\_en](https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficiency-targets-directive-and-rules/energy-efficiency-first-principle_en).

<sup>22</sup> However, as well as entire buildings, the term “stranded asset” could also apply to fossil fuel heating equipment for instance in district or community heating systems. Such equipment could become stranded for instance: if the buildings being served are switched to electric heating e.g. heat pumps, either distributed or centralised; and/or the buildings are subject to a deep retrofit that reduces heat load so much that the centralised district heating system is rendered uneconomic.

<sup>23</sup> To confuse matters still further, assets may be referred to as at risk of stranding if they require capex in order to remain so consistent. So assets may be stranded because they *cannot* be salvaged based on the operation of the market, or simply because they *haven't* been. In either case, the key point is that stranded real estate assets cannot be abandoned – either the market or policymakers will generally need to find a better solution for the land and/or buildings.

If the EE1st principle is to be understood across relevant industrial and financial sectors and to achieve its potential, much greater attention must be given to ensuring that it is “translated” and applied thoughtfully to different commercial, technical and investment contexts so that it is intelligible to, and can be applied by, every relevant audience.

In respect of how the European Commission initially proposed using energy efficiency first, former Vice President for Energy Union, Maroš Šefčovič, said<sup>24</sup>:

*“To make Efficiency First a reality, we need to embed the principle into our models and impact assessments, funding and infrastructure decisions, and into all energy and climate policies.”*

To provide more detail to the energy efficiency first principle, the recast Energy Efficiency Directive (presented by the EC in July 2021) includes a new Article 3 which states:

*1. In conformity with the energy efficiency first principle, Member States shall ensure that energy efficiency solutions are taken into account in the planning, policy and major investment decisions related to the following sectors:*

- (a) energy systems, and*
- (b) non-energy sectors, where those sectors have an impact on energy consumption and energy efficiency.*

*2. Member States shall ensure that the application of the energy efficiency first principle is verified by the relevant entities where policy, planning and investment decisions are subject to approval and monitoring requirements.*

*3. In applying the energy efficiency first principle, Member States shall:*

- *promote and, where cost-benefit assessments are required, ensure the application of cost-benefit methodologies that allow proper assessment of wider benefits of energy efficiency solutions from the societal perspective;*
- *identify an entity responsible for monitoring the application of the energy efficiency first principle and the impacts of planning, policy and investment decisions on energy consumption and energy efficiency;*
- *report to the Commission, as part of the integrated national energy and climate progress reports in accordance with Article 17 of Regulation (EU) 2018/1999 on how the principle was taken into account in the national and regional planning, policy and major investment decisions related to the national and regional energy systems.*

<sup>24</sup> [https://europeanclimate.org/wp-content/uploads/2016/06/ECF\\_Report\\_v9-screen-spreads.pdf](https://europeanclimate.org/wp-content/uploads/2016/06/ECF_Report_v9-screen-spreads.pdf)

Article 3 of the recast Energy Efficiency Directive places the clear responsibility on Member States to embed energy efficiency considerations in energy planning and related investment decisions, and it requires a cost-benefit approach to also consider the wider societal benefits from energy efficiency solutions. This is designed so that Governments consider the multiple benefits of energy efficiency which go beyond just simple energy savings, and that have been well documented by the IEA and EEFIG.

Spain was the first country to directly transpose the energy efficiency first principle into its national law. The Law 10/2022 of 14<sup>th</sup> June on urgent measures required to improve energy rehabilitation of Spanish buildings, includes in its Article 5, the principle of energy efficiency first, which states:

- 1. This Urgent Measures Act advances the implementation of the energy efficiency first principle, thereby contributing to an inclusive, just and prosperous society with a modern, resource-efficient and competitive economy.*
- 2. In accordance with the energy efficiency first principle, energy efficiency solutions should be given priority consideration within a cost-benefit analysis in planning, policies and major investment decisions related to both the energy sector and non-energy sectors, where the latter sectors have an impact on energy consumption and energy efficiency.*
- 3. In general, energy efficiency solutions shall be considered to be those aimed at reducing energy consumption and optimizing the energy system, in particular those aimed at reducing and managing demand, obtaining energy savings, making the energy system more flexible and minimizing losses in the generation, transport and distribution of energy.*
- 4. Buildings participate in both the energy and non-energy sectors because, in addition to being consumers, they are the largest distributed energy asset and have the greatest potential for energy efficiency in their primary field, which is the reduction of demand, favouring the additional incorporation of generation, storage and exchange systems, connected to networks and other energy uses on an urban scale.*

In addition to consideration in Directives, and in Spanish national law, a number of research projects have focused on the efficiency first principle and its mainstreaming into policy decision making including the following:

1. Assistance with the analysis to support the implementation of the energy efficiency first principle in decision making<sup>25</sup>. DG ENER contract.

The project was designed to make a user-friendly decision tool to apply the EE1st principle for use by national/local authorities and by the Commission. The project also looked at energy efficiency financing to develop a framework for financial institutions, and finally to collect a library of relevant information.

<sup>25</sup> <https://op.europa.eu/en/publication-detail/-/publication/b9cc0d80-c1f8-11eb-a925-01aa75ed71a1/language-en/format-PDF/source-search>

## 2. Making energy efficiency first principle operational<sup>26</sup>. Horizon 2020 project ENEFIRST.

“Efficiency First” (ENEFIRST) was a Horizon 2020 project (grant agreement 839509) which ran from September 2019 to February 2022. Its main objectives were to:

- > define the principle of EE1st in practical terms
- > assess how it has been applied internationally and how it applies to the EU context
- > to assess the value of applying EE1st across different policy areas for buildings’ end-use energy efficiency
- > to quantify the impacts of increased building energy efficiency for the future energy system in the EU, and
- > to identify key policy areas for the application of EE1st and develop policy proposals for its implementation in the EU Buildings Sector.

## 3. Quantification of synergies between energy efficiency first principle and renewable energy systems<sup>27</sup>. Horizon 2020 project sEEnergies.

sEEnergies was a Horizon 2020 project (grant agreement 846463) which ran from September 2019 to June 2022. The overall aim of sEEnergies was to quantify and operationalize the potentials for EE in buildings, transport and industry, combining this bottom-up knowledge with temporal and spatial analyses to develop an innovative, holistic and research-based EE-modelling approach going beyond current state-of-the-art science based knowledge and methodologies. A bottom-up sectorial approach and grid assessment, together with energy system modelling and spatial analytics is combined in the novel EE modelling approach. This project assesses potential for energy efficiency in a novel way – and therefore could be a basis for tools to operationalise energy efficiency first within financial institutions - but does not consider incorporating efficiency first into investment decisions within financial institutions.

## 4. ODYSSEE-MURE<sup>28</sup> (Monitoring EU energy efficiency first principle and policy implementation) funded under H2020 and implemented by ADEME, France with 35 other partners (June 2019-Nov 2021).

ODYSSEE-MURE has developed an EE1st Facility that uses a variety of indicators to assess the degree to which Member States have implemented the EE1st principle in the preparation of their National Energy and Climate Plans (NECPs). The indicator consists of five dimensions:

- > Treatment of energy efficiency in the policy making process
- > Removal of barriers to energy efficiency

<sup>26</sup> <https://cordis.europa.eu/project/id/839509>

<sup>27</sup> <https://cordis.europa.eu/project/id/846463>

<sup>28</sup> <https://www.odyssee-mure.eu/data-tools/ee1-tool.html>



- > Treatment of challenges to energy efficiency
- > Integration of EE1st on the regional and local level
- > Monitoring of energy efficiency

Within each dimension there are a number of criteria, 13 in total including 'access to capital' which focuses on the presence of financial incentives for energy efficiency.

5. Analysis to support the implementation of the energy efficiency first principle in decision making<sup>29</sup>, a study by Fraunhofer, Ecorys and Wuppertal Institute and funded by the DG ENER.

This project developed a decision tool to assist local and national authorities to apply the energy efficiency first principle, provided real life examples, developed a library of resources, and made recommendations for better adopting the principle into policies and decision making within national and local authorities.

Although these projects have all contributed to the state-of-the-art, to date, with the exception of this EEFIG Working Group **there has been little or no work on the problem of how to operationalise energy efficiency first explicitly within the decision-making processes of financial institutions.**

## 1.3 Problem statement

Sustainable finance, defined as '*the process of **taking environmental, social and governance (ESG) considerations** into account when making investment decisions in the financial sector*<sup>30</sup>, has grown rapidly across all financial asset classes over the last few years, particularly in Europe. For example, the volume of assets in European sustainable funds has grown nearly nine-fold between 2016 and the end of 2022, from EUR 220 billion to EUR 1.9 trillion in Q4 2022<sup>31</sup> (having fallen back from EUR 2.3 trillion in Q4 2021)<sup>32</sup>. Other types of sustainable finance have shown similar growth patterns, for example GSS+ bonds, (defined as green, social, sustainability, sustainability-linked, and transition labelled debt) grew from under USD 200 billion in 2017 to more than USD 1 trillion in 2021<sup>33</sup>, before falling back in 2022.

As part of the growth in sustainable finance there has been increasing interest in energy efficiency from a wide range of financial institutions, although the actual levels of investment remain well below those required. This under investment,

<sup>29</sup> <https://op.europa.eu/en/publication-detail/-/publication/b9cc0d80-c1f8-11eb-a925-01aa75ed71a1/language-en>

<sup>30</sup> [https://finance.ec.europa.eu/sustainable-finance/overview-sustainable-finance\\_en](https://finance.ec.europa.eu/sustainable-finance/overview-sustainable-finance_en)

<sup>31</sup> MorningStar Global Sustainable Funds Flow: Q4 2022 in Review

[https://assets.contentstack.io/v3/assets/blt4eb669caa7dc65b2/blt7df82e5b9c6a5528/63d40a22f1b8c22282814816/Global\\_ESG\\_Q4\\_2022\\_Flow\\_Report.pdf](https://assets.contentstack.io/v3/assets/blt4eb669caa7dc65b2/blt7df82e5b9c6a5528/63d40a22f1b8c22282814816/Global_ESG_Q4_2022_Flow_Report.pdf)

<sup>32</sup> After declines in Q1, Q2 and Q3 2022 sustainable fund assets grew again in Q4 2022.

<sup>33</sup> [https://www.climatebonds.net/files/reports/cbi\\_susdebtsum\\_h1\\_2022\\_02c.pdf](https://www.climatebonds.net/files/reports/cbi_susdebtsum_h1_2022_02c.pdf)

even in energy efficiency opportunities that are economic, increases the climate related, physical, financial and transition risks, that result from inefficient buildings and assets. It also locks in higher than needed energy use for assets where energy efficiency opportunities are missed, either in new construction or retrofits. To ensure the greatest possible adoption of cost-effective energy efficiency opportunities it is essential to embed the energy efficiency first principle into sustainable financing practices and organisational policy, ensuring there is no harm to other environmental objectives. This EEFIG Working Group (WG) has focused on how energy efficiency first could be operationalised within financial institutions.

There are essentially four types of investments that materially impact the economy-wide level of energy efficiency:

- > Energy efficiency retrofits: The specific energy efficiency investments in equipment or systems that reduce energy use per unit of production, or per area of occupied space.
- > Buildings and industrial facility refurbishments: These are general investments that are being driven by primary reasons other than energy efficiency, e.g. obsolescence, plant or building upgrades etc., but that result in improved energy efficiency. This can be through purposeful design, new equipment and systems being more efficient than those they replace, or upgraded regulations requiring higher levels of energy performance.
- > New buildings and construction: For example, investments in new buildings, industrial facilities, transport systems or energy systems which are more energy efficient than required by regulations, i.e. more efficient than Business as Usual.
- > Structural investments: These change the structure of an economy and move it towards higher overall levels of energy efficiency and may include for example investing in rail transport rather than road or air transport.

To maximise the uptake of cost-effective energy efficiency across the economy, we need to ensure that energy efficiency investment opportunities are identified, developed, implemented, measured and disclosed in each of these four categories.

Each day investment and lending decisions are made by financial institutions and firms that do not properly consider the potential for improved energy efficiency. Buildings are financed that only just meet minimum local building regulations but miss additional cost-effective energy efficiency opportunities. Similarly, many industrial investments do not consider the cost-effective potential for energy efficiency. Where cost-effective opportunities for energy efficiency are overlooked, a higher than necessary level of energy consumption is locked into the new asset for its remaining life, (which can be 20-30 years plus), with all the accompanying environmental and financial costs, as well as energy security implications for the asset and for society.

This market failure can be explained by a number of complex and interacting reasons, including: the absence of accurate, timely and visible energy data not only for customers but also for the investors and financiers behind an asset (they would often be in a position to demand or implement higher levels of efficiency if they had access to their occupiers' energy use data); a lack of technical-analytical appreciation among customers, and project hosts, who do not demand higher levels of efficiency; the fact that the non-energy benefits of energy retrofitting are not taken into account or even properly valued<sup>34</sup>; a lack of qualified specialists; and a lack of capacity among project developers to identify and develop optimal energy efficient assets. These capacity problems are compounded when investors and lenders to the project do not require, or encourage, any consideration of more energy efficient alternatives. Financial institutions face barriers including the lack of granular and timely energy use data from those using the asset, as mentioned above; a lack of know-how and technical capacity with energy efficiency opportunities; difficulties updating established processes and related compliance requirements; and a generalised concern that additional procedural steps may lead to bureaucracy and thus slow-down or prevent lending or investing, or drive customers to competing financial institutions with lower standards.

## 1.4 Objectives of the Working Group

Within this structural and policy context, the objectives of the EEFIG Working Group on "Applying the Energy Efficiency First principle in sustainable finance" are to:

- Observe and analyse the current practices within the financial sector – observe how different types of financial institutions take into account sustainability criteria in their daily activities, and how much importance they give to energy efficiency.
- Inquire about the current and the potential use of the energy efficiency first principle in the financial sector, in the context of sustainable finance.
- Analyse and present how financial institutions might incorporate the energy efficiency first principle into their operations.
- Consider the types and design of tools that may be used by financial institutions to adopt energy efficiency first.
- Discuss the results of the assessment made and the consequences for policy design.
- Provide feedback to the Commission on the energy efficiency first guidelines published on 28 September 2021.
- Provide support and formulate recommendations for the design and/or the implementation in the financial sector of the Commission guidelines on the application of the energy efficiency first principle.

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<sup>34</sup> As highlighted by the EEFIG Multiple Benefits Working Group

- > Formulate recommendations to promote the use of the energy efficiency first principle in the financial sector, for financing and investment decisions.

## 1.5 Working method

EEFIG's energy efficiency first Working Group (WG) had 45 expert members, of whom 30 (66%) were from financial institutions or organisations representing financial institutions. The names and institutional affiliation of the members of the WG are included in Appendix A.

The Working Group developed this report, and its consensus opinions, from six sources/ approaches:

- > WG meetings (Minutes and presentations can be found in Appendix B of the separate Appendices document)
- > Sub-group meetings (sub-group paper in Appendix B)
- > Survey (detailed in Appendix F of the separate Appendices document)
- > Preparation of case studies and discussion papers (e.g. Appendix C, Appendix D, and Appendix E; as well as Appendices G and H of the separate Appendices document)
- > Bilateral meetings and individual submissions (e.g. Appendix I of the separate Appendices document)
- > Consortium targeted out-reach.

From January 2022 to April 2023, six WG meetings were held. During each meeting there was a balanced agenda including presentations from members, and other invited stakeholders, and open discussion about the key deliverables or conclusions of the project's elements. Between WG meetings, an action plan was updated on the basis of the feedback provided, and follow-up actions were agreed and reminders sent to the responsible people who needed to provide written contributions.

The first WG meeting (20 January, 2022) focussed on the role and working process of the WG. Representatives of the EBRD, EIB, and CREFC Europe presented their approaches and viewpoints on the energy efficiency first principle. Each presentation was followed by a Q&A session. The meeting also discussed operational issues and how to best cover the WG's mandate. One of the key conclusions of the meeting was to create three **sub-groups** of WG members to narrow the focus of the discussion on specific issues:

- (i) Processes sub-group: to consider and review processes that financial institutions would need in order to effectively adopt EE1st.
- (ii) Template sub-group: to consider and review templates and documents that could assist financial institutions to adopt EE1st.
- (iii) Real estate lending sub-group: to consider the specific perspective of the real estate lending community in adopting EE1st (to ensure that the

language of EE1st is intelligible to this sector, but also because the financing of commercially owned and operated buildings offers specific opportunities for EE1st, but this is an industry that is also affected by complex mixed incentives and poor information sharing).

Prior to the second WG meeting, WG members were asked to prepare and provide input for their respective sub-group and sub-group meetings were held. Case studies on the public banks were also prepared.

The second WG meeting (5 of April 2022) focused on the reflections of two sub-groups, the processes sub-group and the template sub-group. Members also held a discussion on the EBRD, the EIB and the World Bank's approaches to EE1st – which were documented in detail by the consortium – and energy efficiency more broadly. The case studies describing how the EBRD, EIB and World Bank, have approached EE1st were developed by the consortium and reviewed by the Working Group (as well as EBRD and EIB in their respective cases) . The case studies illustrate the best current practices of including EE1st in the operations of leading financial institutions. These provided inspiration, and offer role models for private sector financial institutions. These detailed assessments can be found in Appendix C and are summarised in Chapter 3.

During the third WG meeting (7 June 2022) members of the real estate finance sub-group provided their views on and experience of the adoption of the EE1st principle. **Case studies** describing the link between EE1st and the EU Taxonomy, ESG and TCFD had also been developed by the consortium and these were discussed by the WG. The consortium also presented case studies on the current status of energy performance safeguards at the EBRD, EIB and the World Bank Group. The meeting ended with a presentation outlining the Commission's guidance for operationalizing EE1st.

During the fourth WG meeting (7 October 2022), several WG members presented their work in relation to their adoption of the EE1st principle, and, more broadly, how they identify energy efficiency issues. The presentations were from the Loan Market Association, UNEP Copenhagen Climate Centre, Global Real Estate Engagement Network (GREEN), and Verco. Finally, the consortium presented the results of the WG **survey (outlined below, and with results fully described in Chapter 4)** which had been launched after the third WG meeting.

Ahead of the fifth WG meeting (26 January 2023) members had received a first draft of the WG's final report to read. At the meeting, the consortium presented the sections of this report and opened the debate to receive comments and inputs, with the focus on the recommendations and conclusions. After the meeting the report was opened to WG members for editing and revision. During the discussion of tools, the EIB presented their Green Eligibility Tool and answered WG questions.

The sixth WG meeting (18 April, 2023) discussed the draft final report and made further suggestions for improvement. There was also discussion of the best means of disseminating the report to the various sub-sectors within the financial sector. The draft report was closed for comments and editing after this meeting.

### Member survey to build consensus on EC EE1st Guidelines

To gather feedback on the EC's Guidelines on operationalising the energy efficiency first principle, a WG member **survey** was prepared and sent to Working Group members on 28 June 2022. The survey is included in Appendix D, and its results are summarised in Chapter 4.

Members had almost a month to provide responses and 70% (31 of the 44) Working Group members reviewed the survey. Two thirds of the survey respondents were representing financial institutions, a higher rate than the 40% which is typical of EEFIG surveys. However, the completion rate (for a full response) was just under 50% and hence the results have been supplemented with bilateral interviews and desk research. The results of the survey were reviewed during the fourth Working Group meeting and are described in Chapter 4.

In addition to these approaches, during the course of the project a number of **bilateral meetings and structured calls** were held with WG members and others to gather data and further views from financial institutions. A number of written submissions were also received upon request from leading financiers (notably public banks) and associations (notably CREFC Europe). The CREFC Europe submission summarised the views of CREFC Europe members both from within and outside the EEFIG Working Group.

Finally, Members of the Consortium presented the work of the WG at various **outreach** events and engaged in discussions with external groups including:

- > Launch of EC Recommendations and Guidelines on EE1st, 28 September 2021.
- > The EEFIG Plenary on 4-5 May 2022 which included presentations and discussions involving five members of the WG across the two days.
- > CEN/CENELEC Sector Forum Energy Management meeting on 22 March 2022 and a webinar on 12 September 2022
- > Presentation to Triple A Project meeting on 11 May 2022
- > Contact was made with Mission Efficiency (IEA, UNEP FI and GABC) to explore ways in which the output of the WG could feed into their work.

The output from these activities was integrated into several interim reports and this final report. These were drafted by the Consortium and then reviewed by the Working Group. The Working Group produced the following reports:

**Inception Report** (August 2021) which served as a basis for framing the work of the Working Group and was distributed as background for the first WG meeting.

**Interim Report** (January 2022) which presented the working group and the outcome of the first working group meeting. The interim report also explained the next steps envisaged and outlined the expected final results of the working group.

**Second Interim Report** (August 2022) which reports on the intermediary results of the working group meetings and explains in detail the next steps envisaged and the expected final results of the working groups.

**Final Report** (the present report, Draft Final April 2023, Final June 2023).

## 2 Discussion of the drivers for sustainable finance and how they address energy efficiency

This Chapter examines the growth of sustainable finance, and the drivers behind that growth, namely: shifting mind-sets amongst investors; the emergence and growth of finance sector coalitions promoting sustainable investment in its various forms and markets; relatively strong economic performance compared with conventional investment strategies in 2021; and the introduction of policy and regulations. The Chapter proceeds to examine the extent to which sustainable finance policy and regulatory drivers address, or fail to address, energy efficiency.

### 2.1 The growth in sustainable finance

The global growth in sustainable finance across all asset classes and instruments has been a major trend in financial markets in the last decade and Europe represents a large proportion of the total global activity. The growth in sustainable finance is illustrated by the following data points.

Figure 1 shows the growth of global sustainable fund assets between Q1 2020 and Q4 2022. Global sustainable fund assets grew strongly up to Q4 2021, reaching USD 3 trillion. In 2022 total sustainable fund assets declined in Q1 to Q3 before growing again in Q4, rising 11.6% in Q4 2022 to hit nearly USD 2.5 trillion. In comparison, the overall global fund market grew by 6% in Q4 2022<sup>35</sup>. We note that growth of public market ESG funds may assist investor financial risk management but may not specifically lead to real world sustainability improvements including for energy efficiency. Academic analysis<sup>36</sup> found very limited evidence that public market funds which tilt/divest exposures, lead to real world change.

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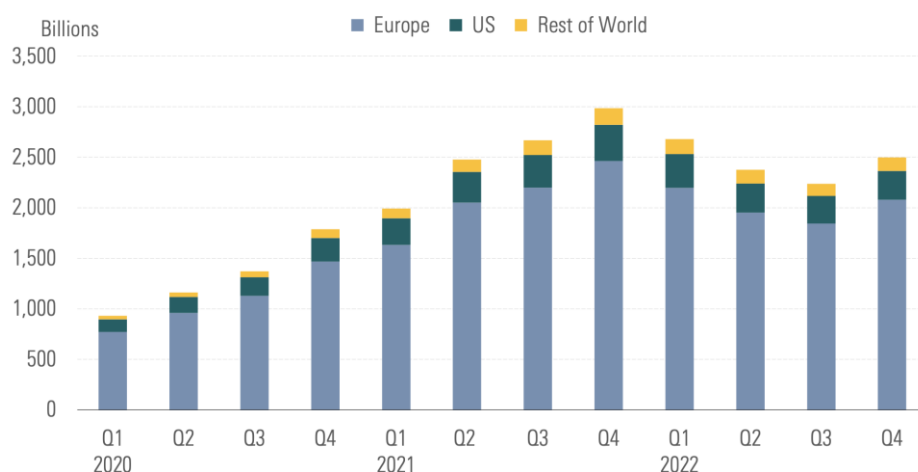
<sup>35</sup> MorningStar. Global Sustainable Funds Flow: Q4 in Review

[https://assets.contentstack.io/v3/assets/blt4eb669caa7dc65b2/blt7df82e5b9c6a5528/63d40a22f1b8c22282814816/Global\\_ESG\\_Q4\\_2022\\_Flow\\_Report.pdf](https://assets.contentstack.io/v3/assets/blt4eb669caa7dc65b2/blt7df82e5b9c6a5528/63d40a22f1b8c22282814816/Global_ESG_Q4_2022_Flow_Report.pdf)

<sup>36</sup> Heeb, Florian and Julian Kölbel (2020) "Evidence-based advice for investors who want to change the world"

[www.csp.uzh.ch/en/research/Academic-Research/Investor-Impact.html](http://www.csp.uzh.ch/en/research/Academic-Research/Investor-Impact.html)

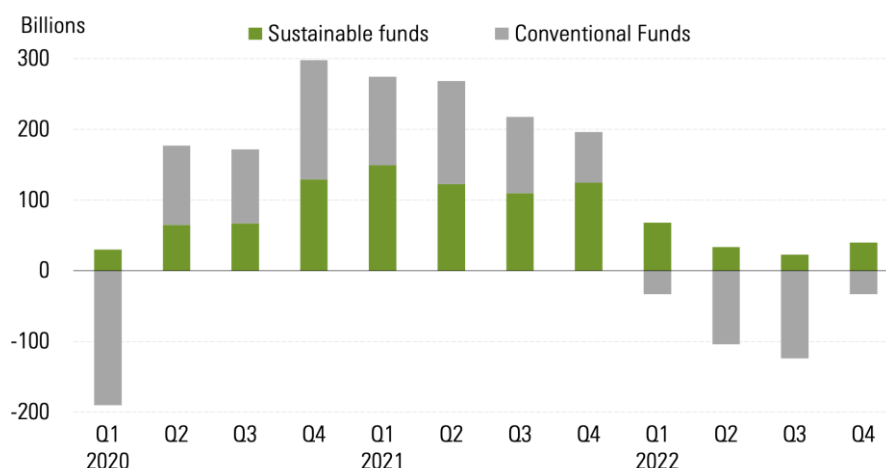




Source: Morningstar Direct, Manager Research. Data as of December 2022.

Figure 1: Quarterly global sustainable fund assets (USD billions)

Europe makes up 83% of global sustainable fund assets. Between 2016 and the end of 2022 the volume of assets in European sustainable funds grew nearly nine-fold, from EUR 220 billion to EUR 1.9 trillion in Q4 2022 (having fallen back from EUR 2.3 trillion in Q4 2021). Despite a turn down in sustainable fund flows in 2022 compared to 2021, as shown in Figure 2 it remained positive, i.e. there were net inflows, unlike conventional funds which suffered significant net withdrawals



Source: Morningstar Direct, Manager Research. Data as of December 2022.

Figure 2: Sustainable fund flows compared to conventional fund flows (USD billions)

To meet demand from private investors looking to align their savings with their values, funds management firms are producing a record number of new sustainable funds: In Europe in 2022 more than 600 sustainable funds were launched, taking the total number of sustainable funds to circa 6,000.

Other types of sustainable finance have shown similar growth patterns, for example GSS+ bonds, (defined as green, social, sustainability, sustainability-linked, and transition labelled debt) which grew from under USD 200 billion in

2017 to more than USD 1 trillion in 2021<sup>37</sup>, before falling back in 2022. Cumulative GSS+ debt since 2006 topped USD 3.5 trillion at the end of Q3 2022<sup>38</sup>.

## 2.2 Key drivers for sustainable finance

This pattern of growth across all asset types, despite the recent reversals, is generally accepted to signal a fundamental shift in investing towards sustainability, which has been driven by a number of inter-linked factors which are increasingly well recognised and briefly discussed below. The factors below have all been advanced as drivers but the relative importance of each is not discussed here.

### 2.2.1 Shifting mind-set leading to increased demand and asset allocations for sustainable investment

There is a fundamental change in mind-set among many retail and institutional investors, businesses, governments and across all parts of society that wants companies and investors to take greater account of multiple factors including ESG factors when making investments. This emerging mind-set, based on 'stakeholder capitalism' as opposed to 'shareholder primacy', holds that 'companies do not only optimize short-term profits for shareholders, but seek long term value creation, by taking into account the needs of all their stakeholders, and society at large'<sup>39</sup>. This approach requires the act of investing to consider factors such as impacts on the global commons, concerns over accelerating climate change, workers' rights and the importance of diversity and inclusion as part of the broader societal focus on the just transition. Within the ESG factors to be considered, climate change is very significant as its effects and the risks it poses become clearer.

Individual investors (or the investment advisors acting on their behalf) have joined a growing wave allocating their savings to managers applying ESG criteria and companies adopting more sustainable business models. This trend is particularly marked in the 'Millennials' generation<sup>40</sup>.

Institutional investors, including pension funds, mutual funds, money managers, insurance companies, banks, hedge funds and private equity firms, are ultimately acting on behalf of their contributors who increasingly demand sustainable investments. These institutional investors are therefore increasing their internal capacities to identify and evaluate environmental, social and governance (ESG) factors and embed them into their investment decisions.

<sup>37</sup> [https://www.climatebonds.net/files/reports/cbi\\_susdebtsum\\_h1\\_2022\\_02c.pdf](https://www.climatebonds.net/files/reports/cbi_susdebtsum_h1_2022_02c.pdf)

<sup>38</sup> [https://www.climatebonds.net/files/reports/cbi\\_susdebtsum\\_highlq32022\\_final.pdf](https://www.climatebonds.net/files/reports/cbi_susdebtsum_highlq32022_final.pdf)

<sup>39</sup> <https://www.weforum.org/agenda/2021/01/klaus-schwab-on-what-is-stakeholder-capitalism-history-relevance/>

<sup>40</sup> <https://assets.kpmg.com/content/dam/kpmg/uk/pdf/2019/07/numbers-that-are-changing-the-world.pdf>

## 2.2.2 Financial sector coalitions

Financial sector coalitions covering all parts of the financial sector have contributed significantly to the rise of sustainable finance.

The Principles for Responsible Investment (PRI), was convened by UN in 2005 and by the 31 December 2022, had more than 5,300 signatories, representing aggregate assets under management (AUM) of USD 121 trillion<sup>41</sup>. Other coalitions provide focus for specific concerns and actors, such as the Institutional Investor Group on Climate Change (IIGCC) with more than 375 members in 23 countries with EUR 60 trillion AUM and the UN convened Net-Zero Asset Owner Alliance (NZAOA)<sup>42</sup>. The Net Zero Asset Managers initiative<sup>43</sup> has 301 signatories with USD 59 trillion Assets under Management.

Similarly in the banking sector a number of coalitions have helped drive the move towards more sustainable finance. The UNEP FI Principles for Responsible Banking (PRB)<sup>44</sup> has over 300 signatories representing almost half of the global banking industry<sup>45</sup>. The Net Zero Banking Alliance (NZBA)<sup>46</sup> is a global group of banks, representing 40% of global banking assets, which are committed to aligning their lending and investment portfolios to net-zero emissions by 2030.

In the insurance sector the Principles for Sustainable Insurance<sup>47</sup> has 147 signatories covering 33% of global premiums and USD 15 trillion of total assets. The Net Zero Insurance Alliance (NZIA) is a group of some of the world's leading insurers and reinsurers which have committed to transition their insurance and reinsurance portfolios to net-zero greenhouse gas emissions by 2050.

The COP26 launched Glasgow Finance Alliance for Net Zero<sup>48</sup> (GFANZ) covers all types of financial institutions and contains sub-sector alliances and has helped raise the profile and the growth of sustainable investment, and increase the uptake and tools for net-zero emissions targets.

The span and scale of these coalitions demonstrate that, although there is still much progress to be made, the issues of sustainability, ESG and decarbonisation, are becoming increasingly embedded into the policies and operations of a very significant, and growing, number of financial institutions.

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41 <https://www.unpri.org/signatories/signatory-resources/quarterly-signatory-update> <https://www.unpri.org/signatories/signatory-resources/quarterly-signatory-update>

42 <https://www.unepfi.org/net-zero-alliance/>

43 <https://www.netzeroassetmanagers.org/>

44 [https://www.ecosia.org/search?q=principles+fo+rresponsbile+banking&tt=st\\_asaf\\_macos](https://www.ecosia.org/search?q=principles+fo+rresponsbile+banking&tt=st_asaf_macos)

45 <https://www.unepfi.org/banking/bankingprinciples/>

46 <https://www.unepfi.org/net-zero-banking/>

47 <https://www.unepfi.org/insurance/insurance/signatory-companies/>

48 <https://www.gfanzero.com>

### 2.2.3 Performance

Although investment performance is of course variable, in 2020, during Covid-19, sustainable investment funds outperformed traditional peer funds<sup>49,50,51</sup>. As well as 2020 outperformance, ESG assets were considered to have better downside risk protection. This outperformance contributed to record funds flow into sustainable assets in 2021. While the 2021 outperformance reversed modestly in 2022, with sustainable funds down 19% compared to a fall of 16% for traditional funds, this was a result of 'extraordinary market conditions'<sup>52</sup> including a rapid rise in interest rates. High oil prices due to the invasion of Ukraine temporarily drove higher performance in fossil fuel stocks and fossil-heavy funds. The picture on relative returns between 'sustainable' and 'traditional' funds in 2023 is not yet clear. Despite the reversal in relative performance in 2022/23 it is widely considered that the underlying fundamental shift in demand for sustainable investments will continue as nearly all of the world's large economies decarbonise, the demands for greater sustainability increase and there is increasing regulatory pressure on the financial sector towards sustainable finance.

### 2.2.4 Sustainable finance related policies and regulations

Regulation generally has an extremely important role to play in helping to raise standards in a competitive market. For example, real estate lenders with a strong focus on decarbonisation have complained about a "first mover disadvantage" – the fact that competitors willing to ignore carbon can offer a better bargain in the market and win the deal. Regulation can force commercial transactions to "internalise" considerations that the parties to them might otherwise be content to regard as externalities (for example, as may be the case with climate-related issues, as someone else's problem or simply beyond the relevant investment horizon). Regulation that raises the bar for everyone also creates a driver for investment and innovation that can reduce the cost of meeting what might initially appear to be a costly regulatory obligation.

Progressive policies and regulations have been a major driver of the rise of sustainable investing: The PRI global regulatory database includes 868 policy tools and more than 300 policy revisions which support, encourage or require investors to consider all long-term value drivers, including environmental, social and governance (ESG) factors<sup>53</sup>.

Some key progressive policy and regulatory initiatives are described below. Not all of these relate directly to sustainable finance but all are considered to be important drivers that will further increase the flow of sustainable finance.

- *Prudential regulation (CRR/CRD)*

<sup>49</sup> <https://www.morganstanley.com/ideas/esg-funds-outperform-peers-coronavirus>

<sup>50</sup> <https://www.trustnet.com/News/5253471/the-best-performing-funds-with-a-conscience-of-2020/>

<sup>51</sup> <https://www.morningstar.com/articles/1017056/sustainable-equity-funds-outperform-traditional-peers-in-2020>

<sup>52</sup> <https://www.morganstanley.com/ideas/sustainable-funds-performance-demand>

<sup>53</sup> <https://www.unpri.org/policy/regulation-database>

Prudential regulation is increasingly incorporating ESG and sustainability reporting requirements. In January 2022<sup>54</sup> the European Banking Authority published binding technical standards on Pillar 3 disclosures on ESG risks. These standards aim to ensure that stakeholders are well-informed about institutions' ESG exposures, risks, and strategies and can therefore make informed decisions. The standards put forward comparable disclosures and KPIs, including a green asset ratio (GAR), and a banking book taxonomy alignment ratio (BTAR).

The EU Banking Package, (CRD6 and CRR3) currently under negotiation by the EU co-legislators would set out new regulatory requirements on how banks manage ESG risks. CRD6 will create mandatory requirements for banks to develop transition plans. Assessment of transition plans will become a part of the Supervisory Review and Evaluation Process (SREP), supported by a new mandate for supervisors to assess business model sustainability over a time horizon of at least 10 years (compared to the typical three-five year horizon currently used by supervisors).

- *EU Taxonomy*

The EU Taxonomy is one of the most significant developments in sustainable finance and is the benchmark policy, with probably the most wide-ranging impact on investors and issuers. The EU Taxonomy provides a yardstick, which defines a significant contribution to the six key environmental goals in Europe across most material economic sectors, and also offers insights into which actions can significantly harm the same goals. While its focus is on helping companies to access green financing to improve their environmental performance, the performance thresholds the taxonomy introduces can help all businesses identify which of its activities are environmentally friendly. So far, criteria have been set for economic activities that can make a substantial contribution to climate change mitigation and climate change adaptation: including energy efficiency measures across a number of enumerated Taxonomy-eligible activities, from manufacturing, energy, transport, to construction and real estate have been set by the Delegated Acts<sup>55</sup>.

- *Sustainable Finance Disclosure Regulation (SFDR)*

The SFDR is designed to bring greater transparency in the markets for sustainable investment products and help prevent greenwashing. It imposes comprehensive sustainability disclosure requirements on financial market participants covering a broad range of Environmental, Social and Governance (ESG) metrics at both entity and product level. The SFDR distinguishes between products disclosing under Article 9, which have sustainable investment as their objective, products disclosing under Article 8 that promote environmental or social objectives, and products disclosing under Article 6 that have neither of

<sup>54</sup> <https://www.eba.europa.eu/eba-publishes-binding-standards-pillar-3-disclosures-esg-risks>

<sup>55</sup> [EUR-Lex - 32021R2139 - EN - EUR-Lex \(europa.eu\)](#) and <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022R1214>

these. If a product disclosing under Article 9 has climate change mitigation as an investment objective then the majority of its investments are required to be aligned with the Paris Climate Agreement, .

- *EU Ecolabel for Retail Financial Products*

The EU Ecolabel could offer guidance to retail investors on the financial products that support environmentally sustainable projects and activities – as defined by the EU Taxonomy Regulation. The introduction of this label could seek to resolve the biggest challenge that investors face: disparate ESG standards. Different ESG standards make it difficult, if not impossible, to effectively compare the ESG credentials of companies that are reporting using different metrics and mixes of KPIs. The EU Ecolabel could also intend to eliminate “greenwashing”, the practice where companies only disclose ESG data that paints them in an environmentally positive light and seeks to minimise material transgressions.

- *Non-Financial Reporting Directive (NFRD)*

The NFRD is designed to help investors, consumers, policy makers and other stakeholders evaluate the non-financial performance of large companies and encourages these companies to develop a more responsible and transparent approach to business. It requires the disclosure of non-financial information, such as reports on the policies businesses implement in relation to environmental protection, and diversity information to be published in the annual reports of large public-interest companies with more than 500 employees.

- *Corporate Sustainability Reporting Directive (CSRD)*

The CSRD amends the existing reporting requirements included in the NFRD and introduces more detailed and specific reporting requirements and ensures that large companies are required to report on sustainability matters including environmental, social and governance factors. The EU Parliament and Council have approved the CSRD as part of the EU’s Green Deal package.

The CSRD comes into effect on 1<sup>st</sup> January 2024 for companies with more than 500 employees and in 2025 for companies with more than 250 employees or €40mn in sales or a balance sheet exceeding €20mn, and for listed small and medium-sized enterprises as of 2026.

- *Pillar 3 Disclosures on ESG risks*

In January 2022 the EBA published binding standards on Pillar 3 disclosures on ESG risks. The technical standards aim to ensure that stakeholders are well-informed about institutions’ ESG exposures, risks, and strategies and can make informed decisions. The standards include comparable disclosures and KPIs, including a green asset ratio (GAR) and a banking book taxonomy alignment ratio (BTAR), as a tool to show how institutions are embedding sustainability in their risk management, business models and strategy, and their pathway to

Paris agreement goals. The EBA has built upon the recommendations of existing initiatives such as those of the TCFD and the Financial Stability Board (FSB).

- *The Task Force for Climate-Related Financial Disclosures (TCFD)*

TCFD is one of the most widely recommended and adopted ESG reporting frameworks globally. Having started as a voluntary system that emerged from the Paris COP21, it has now been incorporated into regulations in the EU, Singapore, Canada, Japan and South Africa. New Zealand and the UK are mandating climate risk disclosures in line with TCFD by 2023 and 2025 respectively.

The TCFD helps organizations articulate how climate risks and opportunities will materially impact future financial performance and value creation. Broken into four pillars, TCFD addresses disclosure requirements related to:

- > Metrics & Targets;
- > Risk management;
- > Strategy;
- > Governance.

Compared to other ESG frameworks such as, SABS, GRI, Science Based Targets, etc., TCFD is explicitly designed to address climate risks to businesses, falling squarely within the 'E' of ESG reporting. For this reason, it appears to be the one where energy efficiency is more explicitly mentioned, as discussed below.

Although it is not obviously related to energy efficiency, the Task Force for Nature-Related Disclosures (TNFD) which will come into effect in 2023 further underlines the momentum of the shift towards sustainable finance.

The following energy efficiency related regulations have also contributed to the growth of sustainable finance within the buildings sector.

- *European Performance of Buildings Directive (EPBD) recast*

In December 2021, the Commission proposed a revision of the EPBD directive (COM(2021) 802 final). It upgrades the existing regulatory framework to reflect higher ambitions and more pressing needs in climate and social action and sets out how Europe can achieve a zero-emission and fully decarbonised building stock by 2050. The proposed measures will increase the rate of renovation, particularly for the worst-performing buildings in each country. The revised directive will modernise the building stock, making it more resilient and accessible. It will also support better air quality, the digitalisation of energy systems for buildings and the roll-out of infrastructure for sustainable mobility. Crucially, the revised directive facilitates more targeted financing to investments in the building sector, complementing other EU instruments supporting vulnerable consumers and fighting energy poverty.

The main measures in the new proposal are:

- > the gradual introduction of minimum energy performance standards to trigger renovation of the worst performing buildings
  - > a new standard for new buildings and a more ambitious vision for buildings to be zero-emission
  - > enhanced long-term renovation strategies, to be renamed national Building Renovation Plans
  - > increased reliability, quality and digitalisation of Energy Performance Certificates; with energy performance classes to be based on common criteria
  - > a definition of deep renovation and the introduction of building renovation passports
  - > modernisation of buildings and their systems, and better energy system integration (for heating, cooling, ventilation, charging of electric vehicles, renewable energy).
- *Minimum Energy Performance Standards (MEPS)*

Perhaps the most important regulatory driver for the real estate industry are minimum energy performance standards (MEPS) that require buildings of different classes to achieve at least a specified EPC rating by a specified date in order to be lawfully let. Some investors are concerned that EPCs have many weaknesses – notably their lack of consistency across jurisdictions, and their often weak correlation with actual, operational energy intensity and efficiency. MEPS also affect the economics of property ownership differently depending on whether it is owned by its occupier, or by investors. Nevertheless, MEPS dramatically ‘internalises’ poor energy performance into the income-generating potential and value of a real estate asset. No financial institution (as owner or lender) can ignore MEPS, and the investor and lender focus on EPC ratings in countries which introduced MEPS early, such as the Netherlands and the UK, has been very clear – driving greater investment into energy efficiency.

## 2.3 Analysis of the importance these drivers give to energy efficiency

It is important that any initiative designed to place energy efficiency first, whether at the level of policy, industry, or individual financial institution, takes into account existing market developments and legal requirements, including all of those listed in section 2.2.4. **The energy efficiency first principle must be connected to and support these regulatory and reporting requirements,** as well as ESG frameworks, and can be a positive aspect of them - if not it will fail to be adopted by mainstream financial institutions. To explore these issues more deeply, the WG developed and discussed draft papers on the links between



the EU Taxonomy, TCFD and ESG frameworks and the energy efficiency first principle. These can be found in Appendix E.

**An important working group conclusion was that the links between the sustainable finance regulations and frameworks – which are the main drivers of the growth in sustainable finance – and the legislation and practices of improving energy efficiency are not explicit or obvious to financial institutions.**

The EU Taxonomy's definition of building deep retrofit is based on a 30% reduction in primary energy use with an unclear baseline for comparison. The WG proposed that **this definition could be updated to integrate CRREM's carbon/energy intensity pathways for specific building types**. The definition of a simple or deep retrofit could be based on whether the retrofit reduce the building's energy/carbon intensity below the CRREM pathway for a number of years for the specific building type. The CRREM pathways could also be applied to an updated Taxonomy definition of a newly developed building and changing the ownership of a building.

**Energy efficiency remains almost invisible in the mainstream ESG and sustainable finance reporting frameworks.** While investing in, or lending to, energy efficiency projects can help an institution achieve a better ESG performance, (and 'higher scores'), consideration of energy efficiency is not mandated or even encouraged in the various frameworks, and there is no sense of missed opportunity when it is not considered. The essence of the energy efficiency first principle is that when energy usage is material, all investments need to have considered options that lead to higher levels of energy efficiency, not just as an "optional extra" or after the fact.

In the EC's July 2021 Sustainable Finance Strategy, the term energy efficiency only appears in a footnote to page 8 which refers to EEFIG's DEEP database as a support to help de-risk and benchmark energy efficiency projects for investors. **Yet in the Annex of the EU's sustainable finance strategy energy efficiency is seen as unequivocally increasing mortgage collateral values**, and subsequently (as researched by EEFIG and Bank of England) reducing default and arrears risks. Yet **there is no specific guidance to financial institutions to consider energy efficiency, first** - or even at all, or to offer an understanding of its material contribution to the ongoing sustainability and resilience of European businesses.

The specific links between energy efficiency and sustainable finance – which can be summarised loosely as "invest in energy efficiency and reduce risks", or "invest in energy efficiency and improve your ESG rating" - need to be made explicit and far better articulated as a core part of the argument as to why financial institutions should implement energy efficiency first. **Without a clear articulation of the linkage and the advantages of adopting an energy efficiency first policy, and particularly its positive impact on major strategic initiatives, or programmes required by regulation most financial institutions are unlikely to make the required effort to do so.**

A substantial proportion of European investment assets, and their managers, are governed with a net-zero emission strategy and have to disclose under the SFDR or subscribed to the various voluntary reporting methodologies that are being adopted e.g. Science Based Targets, the UN Asset Owner Alliance Target Setting Protocol or the Net Zero Investment Framework. From 2023 most investors will have to report their emissions and energy use which will require investors to establish frameworks for measuring and monitoring these same emissions and energy use. This will have to be established as KPIs or specified during due diligence and the investment decision process.

The SFDR includes two Principle Adverse Impacts (PAIs) which are specific to real estate and related to energy efficiency, exposure to fossil fuels through real estate, and exposure to energy-inefficient real estate. The assessment should be done on the level of the real estate object e.g. office or hotel building.

In the absence of a financial product Ecolabel, SFDR Article 8 and 9 have become seen as a financial product label. Funds disclosing under Articles 8 and 9 are largely divesting from carbon intensive companies<sup>56</sup> with no requirement to undertake investor stewardship to encourage company transformation including moving towards higher levels of energy efficiency. Figure 3 shows the extent to which SFDR disclosing funds underweight carbon intensive sectors. SFDR reforms and/or EU fund labelling could better encourage and require investor stewardship.

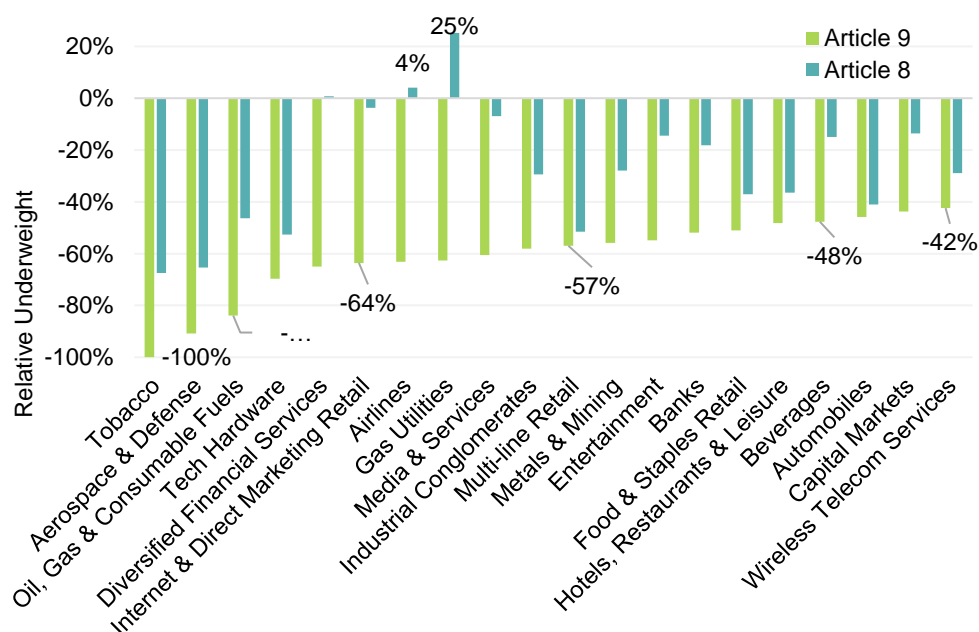


Figure 3. SFDR Article 8 & 9 disclosing fund underweight carbon intensive sectors

Some WG members reported that under the SFDR a fund implementing a 'brown to green' strategy cannot disclose under Article 9. Other WG members reported that the SFDR has been catalytic in bringing institutional investors to energy efficiency and that asset owners are allocating fixed buckets (5-10%) of capital

<sup>56</sup> Goldman Sachs October 2022 as cited in DWS 2022 – see p. 21 <https://www.dws.com/insights/global-research-institute/a-framework-for-european-transformation/> 21 <https://www.dws.com/insights/global-research-institute/a-framework-for-european-transformation/>

to funds disclosing under Articles 8 or 9 , creating strong demand for genuinely green assets which include energy efficiency. Because of the demand, investors within these funds have been more flexible in terms of criteria such as risk/return and lock-up periods. **Specific clarification of the SFDR and its role in promoting 'brown to green' investment would be helpful.**

This partial view is also resonant of SBTi - and TCFD – approaches as they are largely focused on reducing Scope 1, 2 (and eventually 3) emissions. Avoided emissions are not recognised by the GHG Protocol. While energy efficiency cannot on its own bring about net zero, its role in reducing GHG emissions is critical, particularly up to 2030 and enable a considerably cheaper and more probable net-zero scenario. **SFDR and the SBTi methodology do not adequately consider energy efficiency improvements, thus can hamper efforts to increase investment into energy efficiency using just sustainable finance approaches.**

**Specifically, from the real estate finance perspective, it is also worth emphasising that EE1st should, in most cases, enable brown-to-green strategies for improving buildings.** Banks and other financial institutions are regulated in relation to climate risk through climate stress testing, assessment of financed emissions, climate-related disclosures, etc. They also need to be encouraged to finance the decarbonisation of assets and 'brown-to-green' strategies, including through energy efficiency, when the result delivers significant mitigation.

There is a growing role for non-bank lenders (such as direct lending funds run by asset managers) that can be valuable additional sources of credit to fund decarbonisation and EE1st particularly for small and medium sized companies. This sub-sector should be specifically addressed in future energy efficiency first guidance.

### 3 How financial institutions operationalise sustainability criteria, and the importance they give to energy efficiency

This section describes how a sample of leading financial institutions address sustainability, with a focus on energy efficiency, within the broader agenda. Critically, we segment financial institutions into broad groups where the approach to inclusion and focus on energy efficiency differs.

In general terms, public sector banks have made the greatest progress operationalising the energy efficiency first principle, as illustrated through a series of detailed case studies based on information supplied by these banks as members of EEFIG.

Of course, these institutions enjoy the resources and mandate and a less competitive operating environment in their main areas of relevant activity. Conditions are less conducive in the private sector, where resources are stretched, fiduciary duties and competitive pressures are the dominant forces, and an absence of available data or consistent underpinning regulation makes a focus on EE1st more difficult. It should also be acknowledged that much of the economy is beyond the effective scope of activity of the public sector banks. The commercial real estate market, for example, and a large proportion of the residential real estate market, are entirely funded and financed within the private sector.

While the private sector is generally perceived to lag behind the public banks in putting energy efficiency first, there are very notable exceptions where leaders are showing the way among private investors and banks. This leadership, and finding ways to promote wider adoption of good practices, is critically important especially because entire economic sectors almost entirely depend on private investment and finance.

Below we describe a selection of good practice examples drawn from both public and private sectors in detail and provide insights into the case studies identified and documented by the working group. These examples represent best practices. **For most of the financial sector however, energy efficiency is not given enough attention even within institutions that have well-developed sustainability programmes and energy efficiency (or energy performance assessment) is not made explicit within their investment or lending decisions.**

#### 3.1 Public bank best practices

EBRD, EIB, KfW and the World Bank group have been at the forefront of introducing environmental policies and procedures, including those specifically addressing energy efficiency. In the parts of the economy in which they have influence, they are leaders in the transition to more sustainable investing and in

energy efficiency. Where they offer programmes that private firms can use to lend into the wider economy, they can drive best practice for the wider market. In other cases, they can act as examples for private sector financial institutions.

The summary case studies below were drafted using detailed information provided by staff from the banks described, and who served on the Working Group (except for the World Bank Group which was derived from publicly available information). Longer versions of the case studies are included in Appendix C.

### **European Investment Bank (EIB) case study**

The EIB was the first international finance institution to end financing fossil fuel projects and to focus its support on projects that are fully aligned with the Paris Agreement. The EIB states that it 'applies the energy efficiency first principle wherever possible'.

The EIB's strategy includes increasing the level of support to climate action and environmental sustainability by 50% by 2025. To further support growth in energy efficiency financing the EIB will consider financing up to 75% of eligible capital expenditures in each project. The EIB's tracking methodology for climate action and environmental sustainability finance is also being aligned with the EU Taxonomy Regulation.

The economic profitability analysis of energy efficiency (and district heating) projects is mainly based on derived energy savings. Since 2017, the EIB has incorporated in its cost benefit analysis (CBA) methodology<sup>57</sup> the multiple benefits generated by energy efficiency projects, as now requested by the recast EU Energy Efficiency Directive. The methodology used by the EIB includes multiple benefits such as the extension of the economic life of the asset, and the reduction of operation and maintenance costs, and, on a case-by-case basis, other benefits when the available information is reliable and sufficient to produce robust estimates. Although the EIB does not have exact data on the additional value produced by multiple benefits across all projects it confirmed that in some cases failure to consider the multiple benefits e.g. extending the economic life of a building or reduced maintenance costs, would have resulted in the project being deemed as non-viable. An important point that should be noted is that the approach used by the EIB only takes into account multiple benefits when they can be robustly estimated. The approach of the EIB in assessing multiple benefits is clearly replicable in other financial institutions.

The EIB Group Environmental and Social Sustainability Framework is an overarching policy framework of safeguards and consists of a Group-wide Environmental and Social Policy and Environmental and Social Standards (updated in 2022). The EIB Group Environmental and Social Policy is the

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<sup>57</sup> The approach to assessing multiple benefits of energy efficiency, which identifies three tiers of economic benefits, is laid out in the EIB guide for economic appraisal of projects (p115). This approach could clearly be replicated by other financial institutions.

[https://www.eib.org/attachments/lucalli/20220169\\_economic\\_appraisal\\_of\\_investment\\_projects\\_en.pdf](https://www.eib.org/attachments/lucalli/20220169_economic_appraisal_of_investment_projects_en.pdf)

strategy document explaining the vision, the contribution to it, the operating framework for the EIB Group as a whole, and the policy implementing framework which applies for the EIB. This last section of the Policy describes the roles and responsibilities and outlines how the EIB structures its due diligence and monitoring, endeavouring to achieve the consistency with relevant EU Law and the Do No Significant Harm (DNSH) and Minimum Safeguards principles as defined in the EU Taxonomy Regulation. This document also refers to the energy efficiency first principle.

The EIB has eleven Environmental and Social Standards, and these standards have an explained objective, scope, general requirements, specific require, and other relevant documents (e.g. minimum information required, criteria for when a document is needed, templates, checklists). These are applied during the due diligence and monitoring carried out for all EIB financed projects in all regions where it operates. The EIB takes a risk-based approach and determines the operational application of these Standards.

Energy efficiency is explicitly mentioned under two standards, namely “Standard 3 – Resource Efficiency and Pollution Prevention” and “Standard 5 – Climate Change”. Under Standard 3, for projects that are subject to an Environmental and/or Social Impact Assessment (ESIA), the promoter needs to provide the EIB the ESIA report with a description of the proposed technology and other techniques for reducing emissions to air, generation of waste, etc., as well as enhancing energy efficiency. Under standard 5, the project promoter shall demonstrate, on request, that due consideration has been given to alternatives to minimise project related GHG emissions. These measures may include but are not limited to the use of best available techniques (BAT) and/or any emerging techniques, energy efficiency, resource efficiency, adoption of less carbon-intensive or renewable energy sources, or the reduction of fugitive emissions.

### **European Bank for Reconstruction and Development (EBRD) case study**

EBRD has long been a leader in energy efficiency and indeed has incorporated energy efficiency measures into its loans from its formation, largely in response to the very low levels of energy efficiency in Central and Eastern Europe prevalent at that time.

At the strategic level the bank’s Green Economy Transition (GET) 2021-25 outlines a systemic investment approach and sets a green financing target of more than 50% by 2025 and all EBRD activities to be aligned with the goals of the Paris Agreement from the end of 2022. Most country strategies of the EBRD place energy and resource efficiency as one of their top three priorities. Energy efficiency, however, is not one of the key areas under the Environmental and Social Policy document as this is focused on safeguards rather than project prioritisation. The EBRD has adopted a set of specific Performance Requirements (PRs) for key environmental and social sustainability areas that projects are required to meet and [Performance Requirement 3 on Resource Efficiency and Pollution Prevention and Control](#), includes the objective to avoid, minimise and manage project-related GHG emissions.

The EBRD's Green Economy Transition [approach](#) **focuses on institutional priorities** to help build green, low carbon and resilient economies (in particular through energy efficiency as a cross cutting theme). The EBRD Technical [Guide](#) for Implementing the Green Economy Transition and [annexes](#), embeds energy efficiency into its climate change mitigation activities.

At the portfolio level the bank has issued Environmental Sustainability Bonds (ESBs), Climate Resilience Bonds (CRBs) and Green Transition Bonds (GTBs). Support energy efficiency projects. The ESBs and GTBs have been used to support energy efficiency projects.

At the project level, from 2016 to 2019, energy efficiency projects accounted for 29% of GET activities. In 2020 the objective of the EBRD was set as achieving fifty per cent green finance ratio by 2025. In 2022 green financing accounted for fifty per cent financing across all regions was green, in line with the target of becoming a majority green bank by 2025<sup>58</sup>. All projects undergo environmental and social appraisal both to help EBRD decide if the project should be financed and, if so, how environmental and social risks and impacts should be addressed in planning, implementing, and operating a project. The exact scope of the appraisal is determined on a case-by-case basis.

The EBRD lists the type of activities that are not eligible for funding in its Environmental and Social Exclusion List<sup>59</sup> and moreover, projects are categorized according to the nature and significance of any actual or potential environmental or social impacts. The bank also distinguishes between brownfield and energy efficiency, green-field and energy efficiency, capacity extension and energy efficiency, and resource efficiency and energy efficiency projects. Every project is screened for its environmental and social impacts, and environmental monitoring is continued throughout the project life cycle.

The bank has developed capacity building and delivery tools such as the Green Technology Selector includes energy efficiency technologies and energy performance data) (whi), data management and reporting, and e-learning. To qualify for green financing a project must meet the EBRD Environmental and Social Policy and Performance Requirements and the Green Economy Transition (GET) principles. Projects must be consistent with GET objectives, resulting in net environmental benefits relative to appropriate baseline scenarios. Baseline scenarios are based on good environmental performance standards such as EU Best Available Techniques (BAT) and internationally recognized good practice standards of environmental performance. Detailed methodologies for the calculation of the environmental benefits are described in the EBRD GET Handbook.

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<sup>58</sup> Annual Review 2022.

<https://www.ebrd.com/annual-review-2022>

<sup>59</sup> Available as Appendix 1 in the Environmental and Social Policy at [Environmental and Social Policy \(ebrd.com\)](#); and includes, inter alia, thermal coal mining or coal-fired electricity generation capacity, upstream oil exploration and development projects, unless proceeds of the project exclusively target reduction of GHG emissions or flaring from existing producing fields; activities prohibited by international conventions relating to the protection of biodiversity resources.

Despite this emphasis on energy efficiency the EBRD documents do not explicitly refer to putting 'energy efficiency first'. During the WG meetings, it emerged that the EBRD approach to the EE1st principle follow the TCFD's structure by considering Governance, Strategy, Risk management, and Metrics and Targets. It is notable, however, that **the EBRD commented that even during times of extreme energy crisis such as caused by the invasion of Ukraine, energy efficiency was not on top of their client banks' minds and agendas.**

### **World Bank Group (WBG) case study**

At the strategic level the World Bank Group (WBG) is committed to aligning its financing flows with the objectives of the Paris Agreement by the start of fiscal year 2024. The International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA) will be 100% aligned starting in July 2025. Across the entire WBG the commitment is to achieve 35% of total financing in climate, as an average over the five years of 2021–2025.

At the sector and portfolio level the WBG is one of the largest providers of financing for renewable energy and energy efficiency projects in developing countries, committing USD 8.4 billion over the past five years and helping mobilize private capital for the sector. The WBG has a long history of promoting energy efficiency investment: including assisting in the development of Energy Service Companies (ESCOs) and Super-ESCOs; providing advisory services on industrial efficiency, green buildings and certification; retrofitting of public buildings; efficient and clean cooling and cold chains; and clean cooking.

The WBG will support projects both on the supply side (in power generation and by reducing transmission and distribution losses) and the demand side (industry, municipalities and other public sector users, residential buildings, and agriculture). When the project is a potentially significant user of energy, in addition to applying resource efficiency requirements, the Borrower must adopt measures specified in the Environmental, Health, and Safety Guidelines (EHSGs) to optimize energy usage, to the extent technically and financially feasible.

The World Bank's current environmental and social safeguard policies list the objectives which are then broken down into operational principles; there are 11 Operational Policies, an Operational Manual is provided for each, consisting of policies and procedures. These environmental and social policies of the Bank are known as the "Safeguard Policies," the mechanism for addressing environmental and social issues in project design, implementation, and operation, and they provide a framework for consultation with communities and for public disclosure.

In August 2016, the World Bank adopted a new set of environment and social policies called the Environmental and Social Framework (ESF), which became effective on 1.10.2018 and applies to all Investment Policy Financing (IPF) projects initiated after this date through ten Environmental and Social Standards (ESS) that are designed to support Borrowers' environmental and social (E&S) risk management. With existing projects continuing to apply the Safeguard Policies, the two systems will run in parallel for an estimated seven years. For each of the ten ESS a detailed Guidance Note is provided alongside other resources such as templates and checklists, the ESS3 Resource Efficiency and



Pollution Prevention and Management is the standard that addresses energy efficiency.

### **Kreditanstalt für Wiederaufbau (KfW) case study**

KfW, Germany's promotional bank is financed directly from the national budget and supports the promotion of the Efficiency First Principle by the German Federal Government through its promotional financing activities (interest rate subsidy, partial debt relief and investment grants) that target energy efficiency.

KfW mandates that at least 38% of new financing must be dedicated to addressing climate change and environmental protection. 75% of KfW's overall business is domestic, and the business division, representing around 80% of the domestic business, is comprised of a standardized, high-volume consumer lending using digital processes for application and approval. The loans are provided using an on-lending model where KfW distributes the products via a broad network of retail finance partners.

Buildings are identified for the provision of long duration loans and investment grants for energy efficient investments across all building types (commercial, residential, public). The key feature is blending loans and grants, supported by an interest subsidy and partial debt relief to promote energy efficiency. This is called the "Efficiency House" approach: promotional support is only provided if a target energy efficiency level over and above the applicable building codes is reached, (assessed using a standard model). KfW also requires the input of an energy expert as mandatory during its application and approval process for promotional loans<sup>60</sup>. The expert provides guidance and orientation throughout the project planning process for the energy efficiency investment, and this cost is partly covered by the promotional loan offer. Experts are accredited by the German Energy Agency (DENA) and are listed on a public website.

KfW also is developing the energy efficiency first principle in the corporate sector via a number of specific promotional loan programs:

- > Energy Efficiency Programme: This program focuses on commercial production plants and processes and lent EUR 2 billion in 2021;
- > Federal funding for energy and resource efficiency in the economy: This focuses on the use of highly efficient technologies, the financing offer is structured into 4 modules, of which 3 focus on energy efficiency, and the volume lent in 2021 was EUR 400 million;

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<sup>60</sup> The customer has to engage with an energy expert selected from a dedicated pool of experts before planning an intervention. The pool of experts comprises approximately 13,000 professionals from all over Germany. The expert supports the planning process and helps to process the promotional loan application. They also have to confirm that all the promotional conditions are met by the application and sign off after the investment to confirm that all measures have been implemented as planned. Although this may be viewed as an additional step that could slow down the approval process KfW's view is that it saves time for the customer as they benefit from a reliable and professional contact point throughout the process until its completion. It also ensures funds are directed only to high quality interventions that meet the programme criteria.

- > **Environmental Innovation Programme:** This supports large-scale “first of a kind” projects for advanced technological processes and process combinations for the avoidance or reduction of environmental pollution. In 2021 the grants, partly used for energy efficiency related measures totalled EUR 50 million.

KfW also provides tailored promotional solutions for companies and banks as well as finance for municipalities. Standard loans are issued either on a direct basis (business with municipalities) or through on-lending (municipal and social companies) as well as grants. There are specific energy efficiency related conditions under which loans are classified as targeting environmental and climate protection and, in this case, also qualify for the KfW Green Loan Framework. Projects must prove a 15% energy saving compared to the national average in case of a new investment and a 20% saving in case of a replacement investment.

The bank supports energy efficiency investments in developing countries by providing finance for energy efficiency on the demand side, covering buildings, industry and private households. In support of energy efficiency on the supply side, it financially supports efficient energy transmission and distribution infrastructure. These funds are made available through local and regional banks using a system similar to the KfW domestic lending model.

The wholly owned KfW subsidiary DEG primarily finances extension and modernization investments in the corporate sector where improvements of energy efficiency play a major role. Energy efficiency loans have been used by KfW as underlying collateral for its Green Bond issues since 2019.

During the WG meetings, KfW discussed the various types of support to energy efficiency investments such as the energy-efficient refurbishment of older buildings, the construction of new energy-efficient homes, and energy efficiency investments in SMEs. Moreover, KfW noted its long tradition as the leading German lender dealing with energy efficiency and its evolution supporting the federal promotion of energy efficiency first.

#### **These public sector case studies highlight three key points:**

**Energy efficiency efforts within financial institutions need to be driven by explicit and mandatory policies embedded into wider sustainability programmes.**

**Changes to the way that potential investments or loans are assessed are a pre-requisite to identify energy efficiency opportunities which otherwise are unlikely to be recognised**

**There is a need for specialised tools and capacity building to assist both internal operational teams and clients identify, develop and evaluate energy efficiency opportunities.**

**These could be viewed as supply-side solutions to demand-side indifference, or lack of demand, even with these changes being implemented there is still a need to build demand for greater energy efficiency<sup>61</sup>.**

## 3.2 Private sector case studies

Nearly all mainstream financial institutions have introduced some form of sustainability criteria into their operations. The detail to which these go, and the extent to which they have focused on energy efficiency, varies significantly.

As well as the public bank examples, the Working Group was able to identify a limited number of private financial institutions that prioritise energy efficiency within their sustainability criteria, in a way that is supportive of the energy efficiency first principle. Some of these are dedicated energy efficiency funds, represented on the Working Group by SDCL and Aquila. These funds explicitly look for energy savings as an investment purpose, and naturally prioritise energy efficiency in their origination of projects and their processes and always include assessments of project or asset energy performance. Although these specialists cannot be considered representative of financial institutions generally, they demonstrate what can be achieved and can serve as examples or standards for much wider adoption. The same is true of the more generalist private sector case studies included below.

### Sustainable Development Capital LLP case study

Sustainable Development Capital LLP (SDCL) is a specialist investment firm which was established in 2007. It is focused on financing and developing clean energy, energy efficiency and decentralised energy infrastructure projects in the UK, Europe, North America and Asia.

SDCL has a particular approach to assess energy efficiency as part of the overall investment due diligence process they have developed which is illustrated below in Figure 4.

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<sup>61</sup> See EFIG Working Group on Stimulating consumers' demand for energy efficiency investments.

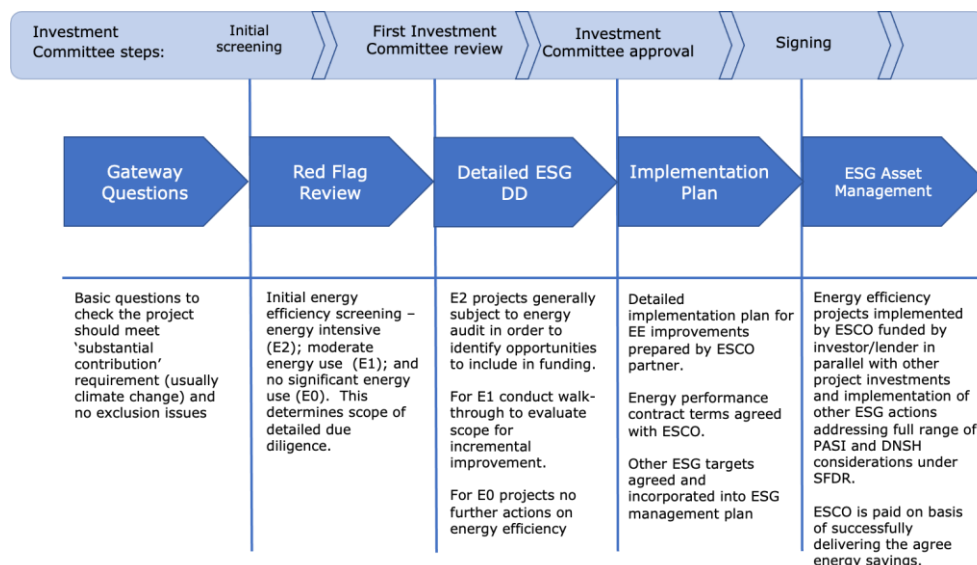


Figure 4. SDCL investment due diligence process

The key is to make an early assessment of the energy efficiency potential. This can be done quickly and at relatively low cost (for example using standard questionnaires to establish energy intensity and how energy is used) and this assessment can be used to decide how to direct resources during detailed due diligence. A simple traffic light system is used: energy intensive projects with good energy saving potential are E2; less energy intensive projects but with good saving potential for example in tertiary energy systems are E1, and projects with very limited energy saving potential E0. This can be used to establish the priorities and targets for detailed due diligence and usually does not require much, if any, external cost to complete so long as someone with the right skills and experience within the financial institution is responsible.

The next key step is for the financial institution to select the right partners to work with. Where a project has good energy efficiency potential (E2 or E1), an ESCO company can conduct the technical assessment necessary to support a more detailed business case for the potential project. This can then be presented to the host with a simple proposition:

- (i) proceed with a detailed energy audit at no cost to the host;
- (ii) if the host decides to go ahead with the proposed audit the cost is rolled into the capital programme so there is no up-front payment;
- (iii) if the initial assessment turns out to have been wrong and the business case does not stand up, the host does not have to proceed and does not have to pay for the audit; or
- (iv) if the business case is sound but the host decides not to proceed, it must pay for the audit.

This relies on identifying an ESCO partner that is willing to take on this business development risk. But this is exactly what ESCOs do, they understand the fundamental principal that allocation of risk responsibility is crucial to effective risk management. Getting this partnership right is crucial to success and if it is right success is likely to be achieved.

The next steps are down to more familiar commercial negotiation. An energy performance contract (EnPC) has to be prepared and negotiated which sets out the proposed investments, energy savings and how the financial benefit of the savings will be shared between the parties. In the classic example the shared savings are sufficient to cover the investment and the ESCO's costs so that the host pays no more than it did before the project and gets the full benefit of the savings after the EnPC has finished. There can be many variations depending on the scope of the project and taking account of other benefits the host will enjoy, such as increased infrastructure resilience and less exposure to energy costs, which might tilt the shared saving equation. The key point again is that the right parties take the right risks, in particular the ESCO takes on delivering the promised energy savings (or else it pays a financial penalty), but this risk allocation is exactly what financial institutions are good at understanding, so it is a natural extension of a normal project risk assessment.

The case study illustrates the need for financial institutions to partner with appropriate technical partners such as ESCOs or energy efficiency consultants to both identify and implement energy efficiency measures.

### ING Case Study

ING sums up its approach to sustainability as: *"Being sustainable is not just about reducing our environmental footprint. As a bank, we believe our role is to facilitate and finance society's shift to sustainability. In other words: contribute to progress – environmental, economic, and social."*

Its current actions build on a long history of initiatives around environmental and social risk dating back to 1997 and include coordinating the syndication of the first ever sustainability linked loan. ING has the following strategic priorities:

- > Reach net zero in its own operations
- > Steer ING's portfolio towards net zero by 2050 or sooner
- > Finance and advise clients in line with a net-zero emissions economy
- > Manage climate and environmental risks.

The bank has set sustainable financing targets with a goal of mobilising €125 billion in sustainable finance by 2025, and providing €1 billion in annual green financing by 2025 for SMEs and mid-size corporates in the Netherlands.

ING has a global Sustainability department which helps operationalise sustainability responsibilities to subject-matter experts throughout its various business units. These experts help develop ING's policies, programmes and targets on sustainability-related risks and opportunities in line with the global strategy.

The global head of sustainability reports directly to ING's CEO and sustainability /ESG leads in major countries have a functional reporting line to the global head

of sustainability in order to create a stronger connection between global and local activities. The ING supervisory board has an ESG committee that is responsible for supervising the sustainability direction and advising the Management Board for Banking (MBB) on dilemmas. MBB members have ESG-related KPIs which are cascaded throughout ING's business lines. Board member remuneration plans include a variable remuneration target area that incorporates sustainability, risk and regulations, and people metrics.

As part of its sustainability efforts ING is steering the most carbon intensive part of its portfolios towards net zero and this is called the Terra approach, which was launched in 2018<sup>62</sup>.

Terra was developed in partnership with the 2 Degrees Investing Initiative (2DII) and uses their Paris Agreement Capital Transition Assessment (PACTA) tool. Terra measures the impact of those sectors on the environment and puts forward portfolio decarbonisation objectives while addressing steps to reach a Paris-aligned pathway. ING currently has aligned 63% of the emissions associated with the wholesale banking book and 93% of the emissions from the mortgage book.

Five sectors (power generation, automotive, commercial real estate, shipping and fossil fuel) are on track with climate-alignment pathways. Two sectors, cement and residential real estate, are within 5% of their pathway, and steel is just above 5% of its pathway. Aviation comes out well above the pathway due to the extraordinary impact that Covid-19 has had on the sector, although it is beginning to trend back to its decarbonisation pathway as the sector recovers.

2030 interim targets have been set for all nine sectors, on top of the 2050 targets, to stimulate immediate climate action. For eight of the nine sectors, the targets are now aligned with net-zero climate scenarios, keeping the rise in global temperatures to 1.5 degrees Celsius rather than well-below two degrees. The last sector, shipping, will be updated when a net-zero pathway is adopted under the Poseidon Principles.

In its €10.9 billion Commercial Real Estate portfolio in the Netherlands, ING achieved a 12.7% decrease in emissions intensity in 2021 compared to 2020. In April 2021 the first sustainability loan for the sector was launched with a reduction in interest rate of 1% for projects that convert buildings to an EPC rating of A. The bank has also developed an "energy robot 2.0" application which gives customers granular insights into energy consumption activity relative to industry benchmarks. The sector transition plan includes the following milestones:

- > Only recognise energy label A and above as 'green' from 2022
- > Integrate ING's energy transition approach into its credit risk policies in 2022

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62 All data from the 2022 ING Climate Report <https://www.ing.com/Sustainability/Sustainable-business/Terra-approach.htm>

- > Identify an approach that seeks to shift all assets to energy label A or above by 2025
- > Execute on its 2025 ambition to shift all assets to energy label A or above by 2030
- > Identify a strategy that aligns with the goals set out in the Paris Climate Agreement by 2035
- > Have delivered this 2035 ambition by 2045.

ING is steering its mortgage portfolio with a focus on its six largest markets, covering 96% of the mortgage book<sup>63</sup>. ING's €297 billion residential real estate portfolio covers the Netherlands, Germany, Spain, Poland, Belgium and Australia. For each country ING collects data on energy labels (where available) or proxies to estimate the energy use of homes within the portfolio. This data is converted into kg CO<sub>2</sub>/m<sup>2</sup> using loan emission factors from the Partnership for Carbon Accounting Financials (PCAF) emission database. This allows the calculation of average CO<sub>2</sub> intensity for each country and these are compared to the respective 1.5°C pathways from CRREM. The sectoral decarbonisation approach from SBTi is used to calculate the convergence pathway for each country and set intermediate targets. A combined CRREM pathway for the portfolio is calculated, weighted by the number of homes financed in each country.

In the Netherlands, an improvement in emissions intensity of 5% was achieved partly through client engagement and partly to continued background improvement in the energy mix emissions factors. In Germany a more accurate picture of the baseline has been developed based on an improved methodology. This shows a much higher starting point than was originally thought, which means that the path to net zero in 2050 will be more challenging than previously expected. The methodology in Belgium was also updated and improved to give a more robust basis for modelling. In Poland emissions intensity fell by 7% compared to 2020 due to new loan origination offer for buildings constructed to higher energy efficiency regulations, and a slight improvement in national energy mix. Data availability remains a problem in Poland. In Spain, in the absence of widely available energy label data, ING partnered with an independent appraisal company to obtain a picture of energy labels of the mortgage portfolio.

EPC labels are used by ING as a proxy for energy performance and ING collected energy labels for its new mortgages which will help deliver an increasingly accurate picture over time. For the markets where energy label data is not widely available ING is developing its own means of determining CO<sub>2</sub> intensity using available building data.

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<sup>63</sup> The numbers in this case study refer to Y/E 2021 and were reported publicly in September 2022. In September/October 2023 ING will report new numbers for Y/E 2022.

In 2021, ING set a new net zero target for residential real estate informed by the CRREM 1.5 degree Celsius scenario for its six main markets. This shows that houses in the ING portfolio should reach an average of 0.6 kg CO<sub>2</sub>/m<sup>2</sup> by 2050 which is much more ambitious than the previous 2.6 kg CO<sub>2</sub>/m<sup>2</sup>. Even in the most optimistic retrofit scenario, where all houses were upgraded to an A label, this level will only be met by significant and rapid greening of the grid.

In 2022, new ING Eco Mortgages were offered in the Netherlands and Germany which provide a discount, of 10 basis points in the Netherlands, and 15 basis points in Germany, for homes with energy labels of A or above. An Eco Mortgage was also launched in Italy in 2022, and there are plans to roll out Eco Mortgages in all countries and to align the definition of eco-mortgages with the EU Taxonomy definition of Green Mortgages.

### BNP Case Study

BNP is committed to integrating sustainable investment principles across its strategies. It defines sustainable investment as “*including key principles: ESG integration across all investments, Stewardship (voting, engagement), Forward-looking perspective (the “3Es”), Responsible Business Conduct and sector-based exclusions.*” BNP has produced a 2025 Strategic Plan in which “deployment of sustainable finance and ESG at scale” is one of its three key ambitions, the other two being ‘growth’ and ‘technology’. Within that pillar there are three sub-pillars which are:

- > aligning BNP’s portfolios with its carbon neutrality commitment:
  - > Trajectory for a reduction in CO<sub>2</sub> emissions corresponding to financing of the sectors with the highest levels of emissions (NZBA);
  - > Aligning the objectives of our business lines with shared objectives by sector and taking into account client transactions.
- > Engage with BNP clients to support them in the transition towards a sustainable economy:
  - > Mobilisation of all business lines and the strength of the integrated model, especially through the Low-Carbon Transition Group, which brings together 250 dedicated BNP Paribas professionals;
  - > Promotion of technical expertise via NEST, BNP’s network of in-house experts.
- > Strengthen steering tools processes and set-ups
  - > Accelerated industrialisation and strengthened governance;
  - > Strengthened steering tools and development of standards;



- > Internal trainings in sustainable finance through the Sustainability Academy.

BNP has two key objectives: mobilize €350 billion by 2025 through sustainable issuances, related to environmental and social topics; and manage €300 billion in sustainable and responsible investments by 2025. These cover five priority themes: transition towards carbon neutrality; natural capital and biodiversity; combat exclusion; circular economy; and sustainable saving, investments and financing. These objectives and themes are cascaded down into the operation divisions of Commercial, Personal Banking & Services; Investment & Protection Services; and Corporate & Institutional Banking.

As well as having targets for reducing energy use and carbon emissions from its own buildings, BNP has a number of initiatives designed to help its customers improve their energy efficiency. These include:

- > In France, BNP Paribas established a partnership with the company *Economie d'Energie SAS*, an expert in energy renovation, to help its customers with their renovation projects. Whether they are changing their heating system, insulating their house or apartment, or switching to solar energy, *Mon Projet Rénovation* allows homeowners to prioritise their renovation projects using an energy audit and an estimate of associated costs. They can then check for eligibility and conditions to receive financial aid from the government and energy suppliers for the work, and identify the best financing solution with the Bank. In addition BNP offers clients access to the Change to Green platform (through a partnership with EDF) which offers a comprehensive assessment, diagnosis of energy contracts and financing proposals for identified improvement projects.
- > Arval, a BNP Paribas vehicle leasing and servicing subsidiary, offers mobility and sustainable mobility solutions including a data analysis platform for fleet managers that suggests sources of energy efficiency ranging from alternative fuel efficient vehicles to changing driving habits.
- > In Belgium, BNP Paribas Fortis has launched the Energy Loan, a loan for home renovation that entitles the borrower to a subsidized rate if at least 75% of the work is aimed at saving energy, for example by installing a new boiler, a heat pump or solar panels.
- > In Italy, BNL customers have access to offers developed with external partners specialising in energy efficiency. With Plénitude they can benefit from preferential rates to acquire low-energy boilers and heat pumps. Another example is Puma Security, a remote home-monitoring service that incorporates an innovative energy consumption monitoring and management system. Thanks to a mobile application, each user can monitor their energy and electrical power usage, as well as how much electricity household appliances are using in real-time.

- > BNP Paribas has also invested in solutions such as Metron, an energy management optimization system with more than 180 clients worldwide across industry, commerce and the public sector.

### Societe Generale Case Study

Societe Generale was a founding member of the UNEP Positive Impact Finance Initiative in 2001 and a founding member of the Principles for Responsible Banking. It has developed a “Sustainable and Positive Impact Finance” proposition with the objective of developing and diversifying a range of products and services which include advice on impact analysis and measurement, whilst incorporating the United Nations 17 Sustainable Development Goals. Societe Generale was the first French bank to issue a green bond benchmark as well as the first one to issue a green covered bond aligned with both the Green Bond Principles and the Principles for Positive Impact Finance (PPIF).

Societe Generale’s climate strategy has three strategic priorities:

- > Managing climate-related risks;
- > Seizing climate-related opportunities and supporting its clients; and
- > Managing the bank’s impact on climate (via its own activities and those of the clients it finances).

In 2021, Societe Generale became a founding signatory to the Net Zero Banking Alliance (NZBA) which commits the bank to align its portfolios with trajectories aiming at carbon neutrality by 2050. The bank has developed an updated framework for Positive Impact Finance which includes processes, methods and tools to identify the positive impacts of the financed projects and entities. Any bond or other instrument issued that complies with the framework is a Positive Impact Bond.

Eligible activities for Positive Impact Bonds include, *inter alia*: renewable energy and green commercial and residential buildings. The green buildings category includes the following energy efficiency related criteria:

- > Buildings built before 31 December 2020: either have an EPC A or belong to the top 15% of the national or regional building stock;
- > Buildings built after 31 December 2020: buildings with a primary energy demand at least 10% lower than the one resulting from the European Nearly-Zero-Energy Building (NZEB) requirements;
- > For commercial buildings only: in addition to the above criteria, efficient building operations must be ensured by dedicated energy management.
- > Refurbished buildings with an improved energy efficiency, meeting at least one of the two following criteria:

- > Major renovations: compliant with the requirements set in the applicable building regulations for 'major renovation' transposing the Energy Performance of Buildings Directive;
- > Renovations for relative improvement: individual or set of renovations delivering within a maximum of 3 years a reduction of primary energy demand of at least 30% in comparison to the energy performance of the building before renovation.

### Allianz Lebensversicherung Case Study

Achieving the goals of the Paris Agreement and solving the climate crisis will require rapid decarbonisation of the global economy on the pursuit of net-zero emissions by 2050. As a part of its commitment to limit global warming and fight climate change, the Allianz Group chairs the UN-convened Net-Zero Asset Owner Alliance (AOA) which is the first public-private and peer alliance setting short-term targets for the decarbonisation of investments.

With the increasing focus on decarbonisation, investments in residential real estate, and others, play a pivotal role because:

- > the built environment is a significant driver of global energy demand and accounts for 39% of global energy-related carbon emissions and 34% of worldwide energy consumption;
- > private households are responsible for almost one third of final energy consumption in Germany, of which 84% is primarily driven by fossil fuels to meet space heating and domestic hot water demand;
- > homes are highly exposed to physical climate risks that arise from global warming, resulting in billions of dollars in financial losses.

Compliance with higher energy standards, in line with the energy efficiency first principle, and the implementation of comprehensive solutions to adapt to climate change require considerable investments, which need to be tailored to individual, structural and technical building characteristics.

In addition, real estate-related economic activities should comply with the EU taxonomy for sustainable activities, and its technical screening criteria, which place stringent requirements particularly on existing properties in terms of energy efficiency, climate resilience and environmental compatibility. In the future, these criteria will play an essential role in the decision-making process for the expansion and optimisation of real estate investments.

The assessment of a financed real estate portfolio (i.e. mortgage portfolio) and the energy and economic target-oriented optimisation needs to consider means to incentivise homeowners and clients. This requires practical solutions to actively integrate cross-business climate and energy efficiency goals along with regulatory requirements into the portfolio management and sales approach.

For this reason, the construction financing division of Allianz Lebensversicherung has developed a complex and data-driven planning and management tool with which overarching climate and energy-related strategies of the Allianz Group. In addition, portfolio-wide requirements for sales can be operationalised down to each single building and contractor. In this way, the project team can derive precise recommendations for energy efficiency and decarbonisation measures for new customer acquisition and to extend existing business.

The tool is designed to improve the sustainability performance and transparency of real estate assets, therefore addressing three key areas:

- > **Assessment:** Screening and identifying assets for sustainability issues is an integral part of the decision-making process to understand the status quo, i.e. the current energetic performance and carbon emission intensity of the mortgage book.
- > **Improvement:** Key to enhancing the financed portfolio is projecting relevant energy-and emission-related KPIs and benchmarking with reference pathways under different refurbishment scenarios.
- > **Engagement:** Supporting homeowners and clients to implement the right measures that take the portfolio where it needs to be regarding current and future objectives in line with the Paris Agreement as well as both AOA targets and EU taxonomy criteria.

First, all relevant information from the retail business' residential real estate portfolio, which contains around 125,000 records, is captured on the building and contract level in a computationally efficient data model, including property data, energy performance certificates (EPCs) as well as information on contract and contractor. The data is visualised in a dedicated business intelligence (BI) environment, where it can be evaluated at any regional or organisation-related aggregation level. Comparatively high-energy and emission-intensive real estate can then easily be identified. As it stands, one quarter of all assets meet the corresponding climate mitigation criteria of the EU taxonomy, according to which an EPC class of A or better is mandatory for taxonomy compliance.

After the status quo has been determined, the next step is to extrapolate the average carbon footprint of the financed portfolio to a target year. While processing scenario-based assumptions on renovation rate and refurbishment depth together with data on the remaining life of each loan and minimum building standards for new constructions that enter the portfolio, an algorithm based on various key indicators prioritises all assets regarding the necessity of energy efficiency upgrades. Consequently, various decarbonisation paths can be simulated through the optimised renovation sequence in combination with expected energy or emission savings and afterwards assessed against science-based 1.5 °C reference pathways, e.g. from the Carbon Risk Real Estate Monitor (CRREM) – further developed in chapter 4.

Following a gap analysis, packages of energy efficiency and decarbonisation measures which achieve the greatest leverage effect with minimal financial

expenditure can be deduced. The results obtained are incorporated into a direct customer approach for the promotion of net-zero construction financing products. Previous impediments that have hindered deep refurbishments are thus countered by combining individual renovation roadmaps and initial cost indications, thus significantly reducing complexity. Through incentive systems, e.g. interest rebates for particularly energy-efficient projects, each individual customer can contribute to moving the mortgage book towards Paris-alignment.

The effectiveness of the described tool stands and falls with the availability of high-quality and resilient non-financial data. Typically, the plethora of new data points have not been readily available for large parts of financed real estate due to various reasons, namely:

- lack of regulatory obligations for financial institutions to gather EPC and related data in the past,
- no straightforward data acquisition from clients in terms of cost, time frame, and response rates, and
- data quality issues and lack of coverage when collecting data from private individuals and households.

Normally, time-consuming post-recording processes would have become necessary to solve the missing data challenge. Instead, the project team developed a robust approximation model to fill energy-related data gaps. The model is processing basic building data such as year of construction, building type and floor area to estimate end user energy and primary energy demand. Expected energy savings from energy efficiency measures are also calculated using publicly available statistical data and building typologies. The validation of the methodology against comparable commercial models showed a very satisfactory fit, which is remarkable given the minimised amount of input information.

Still, approximation models are meant to be only short-to-mid-term solutions to allow for a quick start in estimating key energy indicators for a real estate portfolio. Moreover, they do not have the capability to produce official EPCs or comparable real data, which are, however, mandatory to demonstrate conformity with the EU taxonomy. That is why the project team decided to tap into the potential of novel data services from satellite imagery to reproduce actual EPCs by processing minimum data requirements. If additional information is available, the reliability of the final model results is likely to be enhanced. With this technique, both specific energy and carbon emission intensity according to generally valid technical standards can be calculated.

The developed management tool and the enriched database are already capable to check selected technical screening criteria of the EU taxonomy and to link the corresponding assets with associated financial KPIs. In the future, the existing solution will be extended to a holistic taxonomy reporting tool covering all activities of net-zero construction financing:

- > Climate change mitigation: The energy data generated can be used directly in the verification of energy efficiency requirements. If no energy efficiency rating is available, as is usually the case with non-residential real estate, the energy performance of the building must be within the top 15 % of the national or regional building stock. However, an adequate benchmark is not yet publicly available from central databases set up by governmental authorities, as recommended by the Energy Performance of Buildings Directive (EPBD).
- > Climate change adaptation: A separate module evaluates which assets are materially exposed to physical climate risk and thus trigger the implementation of suitable adaptation solutions. The climate risk and vulnerability assessment considers state-of-the-art climate projections by the Intergovernmental Panel on Climate Change (IPCC).
- > Do-no-significant-harm (DNSH): Especially in the context of major renovations of existing buildings, compliance with additional criteria regarding water protection, circular economy and pollution prevention must be demonstrated. In the future, the required information will be collected in a questionnaire at an early stage of the application process for (residential) mortgages.

Project experience has shown that it is often not the assets that impede the journey towards an energy-efficient and low-emission mortgage book, but the availability of associated data.

### Further Analysis

Additionally, the WG received papers from members describing how energy efficiency was integrated into their sustainability approaches. CREFC Europe provided useful feedback on the status of energy efficiency within the real estate lending sector as well as the issues in implementing it (much of which is set out in the real estate finance sub-group paper included at Appendix B). This highlighted the differences within the sector between the prime, institutionally owned and occupied part of the market (where there is clear evidence of the value of highly sustainable buildings) and the rest of the building stock (where sustainable investment, even delivering energy efficiencies, is not generally a priority, and the economic case for retrofit may not exist), as well as the lack of data and capacity to assess energy efficiency performance.

The fundamentally different roles of building owners and their lenders were also highlighted. The lender can help with advice, finance and indeed financial incentives; but it is the owner of the building who ultimately stands to gain or lose from the quality of the building, and who has direct relationships with tenants/occupiers in the building. In very simple terms (carbon and energy aside), lenders simply need to get their capital back along with the finance charge; the borrower / building owner is exposed to all the upside and downside of how the building performs, and is directly implicated in the relationships with those who rent, occupy and use the building. At different points in the property cycle, lenders may be in a position to act as an important disciplining factor on

borrowers; at other points in the property cycle, lenders may simply be competing to try to win lending mandates, and have very little influence over how borrowers deal with their buildings.

In 2022, the Institutional Investor Group on Climate Change launched a new real estate working group, containing some EFIG members, and hosted a series of roundtables to collate knowledge, share best practices, and showcase investor case studies, tools and best practices, alongside research from industry players across the real estate value chain including Ramboll, JLL, Arcelor Mittal and more. They also outlined the policy recommendations that would better support investors in this space. The work is referenced in the separate Appendix document in the Working Groups' library in Appendix I. In 2023, IIGCC is working on step-by-step whole life carbon guidance, which will give investors a more credible way to address emissions and incorporate the practice into decarbonisation strategies.

It is important to mention the role of international standards as de-risking tools in assessing and measuring the energy and environmental benefits and co-benefits of energy efficiency improvement projects. The European Standardization Organizations have, and are further developing, a range of standards that are highly relevant and should be utilised, or at least highlighted, within financial institution processes. These standards deal with subjects across the buildings sector as well as industry and include, inter alia:

- > *Energy auditing (EN 16247)*
- > *Energy performance of buildings (EN ISO 52000 family of standards)*
- > *Energy and Environmental management systems (EN ISO 50001 and EN ISO 14001)*
- > *Energy efficiency services and related multiple benefits-co-benefit (EN 15900)*
- > *Energy performance contracts (EN 17669)*
- > *Valuation of energy related investments (EN 17463)*
- > *Use and management of renewable resources (EN ISO/IEC 13273)*

The reference to international standards in the due diligence and underwriting procedure of financial institutions, enable transparency, comparability of different options and increase materiality for reporting and disclosure.

### 3.3 Conclusions

Deep-dive work on the sustainability approaches of many of the EFIG member organisations shows how energy efficiency can be included as a material consideration in relevant segments. Leading public banks have spent a great

deal of time considering how to operationalise the identification and subsequent incorporation of energy efficiency matters into their overall sectoral work, each giving importance to energy savings in their high-level strategies and then operating tools. Some private lenders have shown that exceptional results can be achieved in particular sectors such as real estate finance – albeit their potential would be that much greater if underlying energy usage data were routinely available to them rather than EPC ratings and other proxies and modelled data.

Leading private banks and investors show how there is a general clustering of approaches to sustainability which is increasingly guided by a business unit level approach to Paris Alignment. In the generic sense, this tends to focus more on emissions reduction (which can be achieved through supply-side or market emissions factor changes). In the real estate context, this clearly takes on an energy efficiency dimension when considering mortgages, new construction, embedded or whole-life carbon, buildings renovations and SME activities, with a major focus being building upgrades driven by MEPS regulations, which push in the same direction as EE1st.

**The case studies and WG discussion of them illustrate several important conclusions, including:**

- 1. The need to integrate energy efficiency into higher level, institutional sustainability and climate policies. Energy efficiency cannot stand alone but must be integrated into broader sustainability initiatives, systems and procedure. This is about better managing financial risk (TCFD).**
- 2. The need to provide tools and constant support to enable staff within financial institutions to understand, identify and evaluate energy efficiency opportunities and appreciate their value proposition.**
- 3. The need to provide specific tools to assist customers identify and evaluate energy efficiency opportunities. There is a need to bundle advice and support services with the provision of finance to deliver investable pipeline.**
- 4. The critical role of safeguards in due diligence and transaction origination-approval processes to ensure that energy efficiency opportunities are never missed.**
- 5. The need to use evidence to back putting energy efficiency first, when it competes with easy to install PV, grid factors and larger scale supply-side projects.**
- 6. Specifically in the real estate finance context, there is an enormous opportunity for banks and other lenders to use technology and/or establish industry standards and best practices to bundle advice with finance to catalyse the adoption**



**of EE1st upgrades across the 'long brown tail' of buildings whose owners and occupiers may not otherwise focus on the need to decarbonise.**

- 7. The need for actual energy usage data to be more routinely available to financial institutions capable of influencing the energy efficiency of a building<sup>64</sup>, so that EE1st interventions can be designed, delivered and subsequently monitored and validated against actual energy performance and not against imperfect proxies (including EPC ratings).**

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<sup>64</sup> Recognising the challenges presented by GDPR and data security concerns

## 4 Feedback on EC's energy efficiency first guidelines

One of the objectives of the Working Group was to provide feedback to the Commission on the energy efficiency first guidelines published on 28<sup>th</sup> September 2021.

An extract of the guidelines covering Financial Institutions, along with a link to the whole document, was sent to Working Group members along with the first WG Briefing Paper. Feedback on the guidelines was elicited during the Working Group meetings 1 and 2 and written feedback was obtained from several members which enabled the consortium to design and launch a WG expert survey to build consensus feedback on the guidelines. On 28<sup>th</sup> June 2022, this survey was issued to all the members of the Working Group. The full survey is included in Appendix F. The initial deadline for responding, 8<sup>th</sup> July, was extended to 22<sup>nd</sup> July 2022 as some members had requested an extension.

70% (31 of the 44) Working Group members reviewed the survey, which is a very high open rate compared to 50% in most EEFIG surveys. In addition, as seen below, two thirds of the respondents represent financial institutions, which is higher than the 40% typical of EEFIG surveys. However, many of the responses were largely unfilled, with a completion rate of under 50%, nevertheless, those 15 who provided complete responses dedicated many hours work to their responses and provided strong detail.

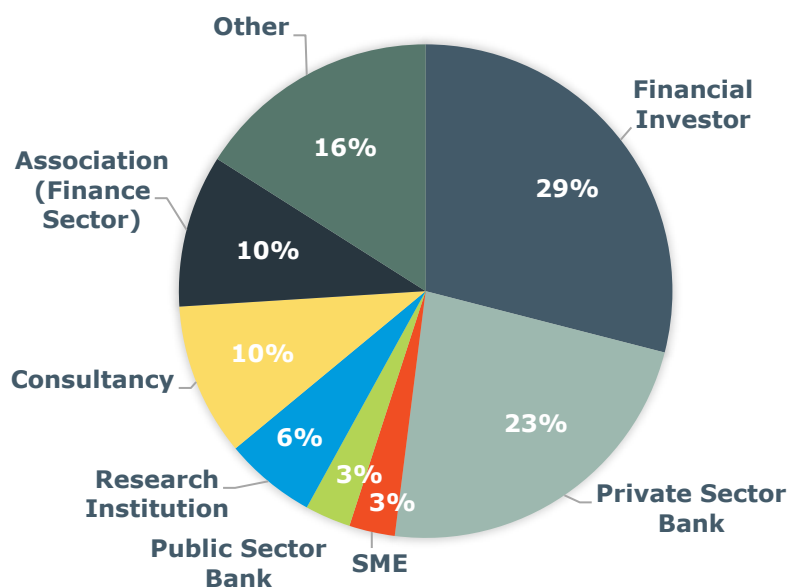


Figure 5: Type of respondent in survey

The following provides some insights into the emerging thinking from the survey sub-divided by section. **All comments in quotation marks, indented and in italics are from individual respondents and do not necessarily reflect the collective view of the Working Group.**

## 4.1 Greenwash, sectoral benchmarks and due diligence criterion for energy efficiency first

Many WG members thought that energy efficiency had in the past been used to greenwash “business as usual” upgrades, extension of the life of fossil fuel assets and sub-optimal buildings upgrades. Most also thought that sector-specific benchmarks supported by lists of eligible equipment and measures for SMEs would be helpful to ensure that “green” projects were not under-delivering. In buildings, what is possible and desirable will also depend on the age, location and use of the building, so a one-size-fits-all approach will not easily work, or local benchmarks are required.

**“Unit rates such as tCO<sub>2</sub>e or kWh/Euro or % Energy Savings ratios are a useful means of establishing both investment thresholds and, in more mature funds, selecting between projects on relative merits.”** However, care must be taken that they do not create conflict where one or more thresholds are required. e.g., fuel switching projects (district energy, oil to electric boilers) may meet a GHG emissions threshold but there is no energy saving unless measures are taken to make use of the energy more efficient (low heat radiators, insulation). **A better construct is an aggregate points system where each measure can contribute to an assessment in isolation.**

- > Interestingly, just 7% of WG members thought that investors used adequate indicators and methodologies to measure energy savings.
- > 80% of responders felt there should be dedicated advisory services available to financial institutions benefitting from EU programmes to reflect the EE1st principle both during the assessment phase (due diligence) and the implementation phase (project development).
- > 87% of responders thought that technical assistance was needed to cover part of the monitoring requirements such as energy audits for the considered assets.
- > Yet only 40% were familiar with ad hoc technical assistance from the EU advisory hub, ELENA, cohesion policy programmes and project development assistance under the LIFE Clean Energy Transition programme.

There is some debate around how quickly the private sector will step into the gap for advisory services, and to which clients. Responders wanted greater alignment between ESG data and the data to record energy efficiency performance, and noted that nearly no-one on the investor side had energy efficiency KPIs at present.

## 4.2 Energy efficiency first in infrastructure planning, TEN-E and other network-grid plans

Not a single Working Group member thought that financial institutions could help implement the energy efficiency first principle as an intrinsic part of assessment of network planning projects, but **63% felt that there is a role for national financial regulators in the**

### **operationalisation of the energy efficiency first principle in energy infrastructure investment.**

Half of the Working Group respondents saw options to better utilise the existing infrastructure (by operational mechanisms), to implement more energy-efficient technologies, and to make better use of the market mechanisms (like Demand Response), but only one responder believed that energy companies and Energy Service Companies (ESCOs) were best placed to implement these demand-side solutions that are not under the control of Distribution System Operator/Transmission System Operators (DSO/TSO).

Large infrastructure projects are usually presented to financial institutions as an integrated project (in a black box) where financial institutions essentially focus on the expected risks and returns. Going deep into the technologies used, the level of energy efficiency, and alternative approaches, is not within the financial institutions' expertise. Demand management is more in the interest of ESCOs than energy companies and having a clearly defined set of TSO/DSO determined standards and measurement criteria will lead the private markets to provide a solution that will likely be more efficient than what could be provided by energy companies and ESCOs.

*"Decentralised energy and microgrids are an essential part of grid efficiency. However, this has to be done holistically otherwise the private sector interventions are done opportunistically as opposed to in a way that is most energy efficient... Both energy and financial regulation is required to balance the competing interests."*

## **4.3 Energy efficiency first in industry and service sector investments**

No-one among the Working Group respondents felt that financial institutions have a holistic approach to ensure that the impacts of changes in a single system component on the overall efficiency of business process are properly assessed. **Nearly all survey responders believe that the EFIG Working Group can improve the promotion of energy-efficient products and technologies and techniques (e.g. energy management) to raise the overall energy efficiency of an entire process or even the system it is embedded in.**

Financial institutions don't holistically work with SME and industrial clients in the promotion of energy savings with technical knowledge in general. They tend to be reactive to the needs of the industry but some do have a few have technical partners who can assess the energy characteristics of deal flow. Here the use of lists of approved and efficient technologies (as pioneered by EBRD for its sectors and regions) can be helpful for financiers.

*"Effective promotion of energy-efficient products should be achieved through differentiation financing conditions in favour of investors that significantly improve efficiency energy. The benefit should be proportional to the savings achieved."*

## 4.4 Energy efficiency first in buildings investing

Nearly all the Working Group respondents felt that the existing requirements and tools of the recast EED, EPBD, the Renovation Wave strategy and the Commission's recommendations on building renovation and building modernisation provide a set of concrete measures to ensure that financial institutions apply the energy efficiency first principle. And yet, **only one respondent said that financial institutions used buildings passports or smart readiness indicators, and just two consider the whole circular life cycle in new construction finance.**

There is a general sense that financial institutions are behind on following the detail of the recast EPBD and its impacts. Recent feedback to the proposals in the EU Parliament suggests that the proposed indicators are not yet well appreciated by financial institutions. A responder from Romania suggested that 95% of the building stock could be renovated, but that most renovations were just shallow and sub-optimal with financial institutions not engaging much in deep renovation. **Minimum energy performance standards (MEPS) were seen as driving investments, if they have protections for energy poor and SMEs.**

Smart readiness indicators, buildings passports, embedded carbon, circularity and even basic EPC information were seen as still far from the operational processes in buildings investment and mortgage lending. Also, energy efficiency metrics don't seem to be clearly linked to value for investors yet. These are some quotes from working group members, and are not necessarily consensual:

*"Forward thinking investors have incorporated these into their valuation metrics and it is informing their decisions. However, this is a relatively small, though growing segment of the market. Regardless, few investors have moved to consider the whole life cycle of the asset in informing their investment decisions as the market has not progressed to the level where that is a driving factor."*

*"The single most important policy measure for the users of buildings would be to require energy use data<sup>65</sup> to be made available to building owners (and lenders with security over buildings). That would allow landlords and lenders to advise, plan interventions and align investments with outcomes on an integrated basis. It would also allow building owners and lenders to better understand the emissions from their assets, to comply with regulatory reporting based on real data<sup>66</sup> rather than proxy/model data (as is currently the case where tenants do not make their actual energy use data available), and thus to drive improvements in energy efficiency and reductions in energy intensity. While energy use remains privacy protected, it is usually impossible for the owner and*

65 EED 2012/27/EU Article 11 Cost of access to metering and billing information

1. member States shall ensure that final customers receive all their bills and billing information for energy consumption free of charge and that final customers also have access to their consumption data in an appropriate way and free of charge.

**Annex V** Paragraph 2 (c) the activities of the obligated, participating or entrusted party must be demonstrably **material** to the achievement of the claimed savings  
Paragraph 4 (f) calculation methodology, including how additionality and **materiality** are to be determined and which methodologies and benchmarks are used for engineering estimates

66 EED 2018/2002 Art. 9.b) Remote reading and Annex VIIa) Starting January 1, 2027 Every residence must have remotely readable heat and hot-water meters installed – with a monthly reading communicated to end user

*manager of a multi-let building (whether it's an office or an apartment block or a retail centre) to see or influence the overall energy footprint of the building. Particularly in relation to business occupiers, we see little justification for preserving the confidentiality of such data in a time of climate crisis. In many cases, we suspect actual data is not shared because there is a serious objection to sharing it, but because there is no strong perception of the need to, or value in, sharing the data. Policymakers can, and should, change that."*

(It should be noted that the ECB has proposed improving the standards of EPCs and establishing an EU-wide database of buildings performance standards<sup>67</sup>.)

*"Too much of Capital Markets Union, green transition and other initiatives in which real estate and real estate finance could play a vital role seem to ignore the [real estate] sector, or to completely misunderstand what it does."*

**Tools like the green building app developed by CFP<sup>68</sup>, which has been widely used in the Netherlands for several years and is now available in many other European and non-European countries, show the impact that lenders can have. The availability of actual energy use data (complementing EPCs) would make such tools even more powerful.** The possibilities for lenders to affect the energy efficiency of buildings are anyway limited. Good projects get financing anyway regardless of their energy efficiency, and projects lenders perceive as too risky (owing for example to the poor quality of the asset or its owner) don't get financing even if they would lower the energy consumption of buildings.

## 4.5 Initial thinking on a new public dedicated energy efficiency fund

Sentiments were mixed with respect of a new public dedicated energy efficiency fund. Several Working Group members pointed to existing public-private funds (including P4EE, EIB-direct, KfW's programme, EEEF, LEEF, MEEF, Polish and Romanian thermo-modernisation funds) noting that **the shortage was pipeline and not funds**. Members noted that there were gaps, and getting cheap, long-term renovation investment funds to homeowners was a major one. Others pointed out that project development advisory services were required alongside any energy efficiency fund and that grant making was an element of public funds which helped build pipeline.

*"The London Energy Efficiency Fund (LEEF) and its successor the Mayor of London's Energy Efficiency Fund (MEEF), were both seeded with ERDF concessionary funds, but the latter had a significantly larger proportion of private sector funds. MEEF is now having to find other more niche market sectors as, constitutionally, it cannot compete with private sector funds and banks that are now investing in its the original market space."*

<sup>67</sup> [https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202212\\_ECBreport\\_on\\_good\\_practices\\_for\\_CST~539227e0c1.en.pdf](https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202212_ECBreport_on_good_practices_for_CST~539227e0c1.en.pdf)

<sup>68</sup> <https://cfp.nl/en/uk-real-estate-sustainability-tools/>

- > Just 7% of responders thought that public funds adequately reflected energy efficiency in their eligibility criteria, or offered benefits for projects fulfilling the energy efficiency first principle.
- > 93% of responders felt that sector or technology-specific energy consumption or efficiency improvement thresholds based on best available technologies are important for financial institutions to operationalise energy efficiency first.
- > 86% of responders thought that a self-standing energy efficiency first element in due diligence is useful to promote higher levels of energy efficiency when assessing projects.

## 4.6 Feedback on the EE1st Guidelines for financial institutions

100% of survey respondents felt that there is a need to increase the visibility and priority of energy efficiency in the financial sector through the implementation of the energy efficiency first principle by banks, asset managers and other financial institutions. 80% of Working Group respondents think that energy efficiency is rarely a specific priority for financial institutions and that many transactions and projects with energy savings potential are missed as often there is no horizontal set of safeguards within financial institutions due diligence to prevent it. A much heard view within the industry is:

*"Unless and until it is codified in regulation and leads to a financial impact on my business, it's a nice to have but I am not spending much time on it"*

*"Most [lending professionals within] private sector banks have probably never heard about energy efficiency first Guidelines."*

The people servicing the customers and granting the loans in banks usually don't have any (technical) knowledge about energy efficiency. And even if they have knowledge, they maybe just don't have time to pay attention to technical details of customers' plans from an energy efficiency point of view.

Some felt that provisioning external insulation to save energy might easily cost much more than putting PV on the roof, even if prioritising PV installation infringes the energy efficiency first principle. Reporting and data are needed to flag such missed opportunities at the portfolio level and at the right point in each transaction. For real estate funds, there is a pressure on the fund adviser to get the sell target, and not every energy savings project reduces the risk to the financial institution and still the standard energy saving information is not good enough to get the special attention of the investor.

100% of respondents felt that the uptake of cost-effective energy efficiency investments across the economy could be improved through application of the energy efficiency first principle by financial institutions in the various processes listed in the EC's energy efficiency first Guidance document (Section 4.8). Just one Working Group member felt that the finance due diligence processes used by financial institutions make energy efficiency outperformance visible and accountable and only two believe that financial institutions offer optimised solutions to capture the full energy efficiency potential identified in the project submission

files. Yet, nearly all financial institutions see the significant transition risks that assets that are not energy efficient may become stranded as they become incompatible with EU climate and energy targets and carbon neutrality.

*"Green mortgages are not the solution to putting energy efficiency first, if they are granted only for customers whose houses are green anyway the price benefit in green mortgages is probably so small that it does not give any incentive to make the house greener). More important is to find effective tools, which are able to make buildings greener than they would be without these tools."*

*"In energy efficiency investments (especially in residential buildings) I don't think financial institutions are doing any due diligence related to technical solutions. If the customer has the capability to pay the loan back and collaterals are ok, then lender is probably happy enough."*

*"The examples of measures misses the Mortgage Portfolio Standard as an option for FIs to measure and implement portfolio level EE reviews for their building collateral, reducing climate transition risk and stranded assets due to MEPS. The expression "Evaluation and design of green components for traditional mortgage loans with energy performance assessment in due diligence processes." is too vague. "There needs to be explicit portfolio targets and all buildings need to be subject to Paris compliant energy and emissions pathways when funded by FIs."*

Two important areas for the Working Group focus seem to be: Aligning project owners' interests in identifying energy performance improvements through technical and energy-related due diligence flags; and using the energy efficiency first principle to flag the risk of stranded assets in installations, facilities and networks which are undergoing significant upgrades. Finally, if you can't get access to real data then there is a critical issue which can only be addressed by facilitating legislation. This is also relevant for residential and commercial buildings. It is important to understand that the financial institutions and professionals who invest in or lend against such buildings are not likely to recognise that regulatory language, definitions or guidance that refer to "installations, facilities and networks" are in any way relevant to their line of work.

*"In case of building's energy efficiency: considering the Taxonomy may be more barrier than enabler due to difficult Do No Significant Harm criteria from data availability point of view. Smart meter data is very problematic from GDPR point of view."*

## 4.7 Feedback on implementation of energy efficiency first principle in the recast Energy Efficiency Directive

Most of the survey respondents felt that energy efficiency first is broadly well described in recast EED subject to the additional points summarised below, and yet were very divided on whether that language will impact financial institutions after transposition and watering down in each Member State.

*"Not in isolation. This is the language of the Commission which can get distorted in associated extended guidance, translation and dissemination so that it becomes*



*meaningless at FI level. FIs need language that will impact them and financial implications."*

Member States have to identify and upgrade public infrastructure and buildings of all types under the recast Energy Efficiency Directive. When these projects are packaged and developed to tender and won by ESCOs and similar public service companies, financial institutions can buy the repackaged debt or lend into the deals. Energy efficiency first is a critical approach for MS in their development of infra plans, grid extensions, long term storage, EV networks, local grids, CHP networks, public buildings upgrades and so forth. These all need inclusion in detailed and technically adequate projects. Promote the use of transparent databases that contain relevant energy performance information for public buildings and a list of those upcoming for tenders with the ability to apply for a technical pack for specific tender preparation.

There is missing language on the need to provide actual data by sector. As is the case with frequent EE1st-related references to "installations, facilities and networks", there is little in the previous paragraph to inform the interested reader from the real estate or real estate finance market that this has any relevance for her. The risk is that this results in a general approach and doesn't help specific parts of the market and trigger new energy efficiency investments. If appropriate strategies are identified and implemented at the local level then perhaps financial institutions would be incentivised to create specific products or promote energy efficiency in all investment loans. More focus is needed on technical standards (Best Available Technologies should be more widely adopted), industry co-operation and locational rules for energy and manufacturing facilities.

## 4.8 Additional feedback

Additional feedback received on the Guidelines from the real estate lending sector on the Guidelines included:

- > the real estate finance sector needs to be directed to the real estate section of the Guidelines which is more relevant for this sector than the section of financial institutions.
- > a short, clear explanation of what the energy efficiency first principle is, specifically in the context of real estate investment and finance, would be helpful. The real estate industry is not generally aware of the principle.
- > it might be helpful to better define 'stranded assets' in reference to real estate. In particular, when city-centre buildings cannot be adequately and economically upgraded, simply abandoning them (as one might abandon 'stranded' fossil fuel deposits) is not an option; a different solution has to be found. For many buildings, the market should be capable of providing the capital and the technical and practical solutions that allow them

to remain in acceptable use. For others, policymakers may need to design alternative solutions if the economics of the market cannot deliver.<sup>69</sup>

The survey and other feedback highlighted the following key concluding points:

- > There is little knowledge or understanding of energy efficiency first within financial institutions.
- > Financial institutions are not using adequate indicators and methodologies to measure energy savings. They use proxies including EPC labels rather than real performance data. Given the well-known performance gap – the gap between projected savings and actual savings – as well as the known failings of EPCs, this is a concern. The availability of data on energy performance (both proxy and real) is a constraint.
- > Including energy efficiency related questions into due diligence questionnaires would be a useful tool.
- > A dedicated advisory service to help financial institutions operationalise energy efficiency would be helpful to overcome a lack of capacity within financial institutions.
- > There is little or no use of building passports or smart readiness indicators, and little or no consideration of the energy and carbon emissions through the entire lifecycle of buildings (questions continue to be raised by members of the working group as to how exactly the EE1st principle accounts for embodied carbon and the lifecycle emissions of buildings – a complex trade-off that is highly sensitive to time horizons and boundaries, yet real estate investors and lenders are still struggling to figure it out).
- > There need to be explicit portfolio targets and all buildings in a portfolio need to be compared to a Paris Agreement compliant target or trajectory.
- > Application of the energy efficiency first principle within the processes of financial institutions would help improve the uptake of cost-effective energy efficiency opportunities.

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<sup>69</sup> It is possible that, in order to drive EE1st investment in buildings whose value and rental growth potential cannot otherwise justify it, European countries will need to explore taxpayer-supported instruments such as the Property Assessed Clean Energy (PACE) programmes available in the United States (<https://www.energy.gov/scep/slsc/property-assessed-clean-energy-programs>).

## 5 Tools to help financial institutions operationalise energy efficiency first

This section considers the types of tools that could help financial institutions operationalise energy efficiency first. Different types of financial institutions will need different tools and approaches as banks, asset managers, insurers and advisors perform very different tasks and offer different products and services to different types of clients. For example, equity investing in real estate requires a different set of operational principles than being the advisor to the IPO of an electric vehicle manufacturer, or providing a mortgage to an EU household.

The EFIG working group asked members to bring forward and identify any tools which they had used or considered best practices in specific sectors. This exercise was complemented by a desk review of best practices within specific segments and organisations by members of the consortium. The consortium undertook an institution-by-institution review of the practices within public sector financial institutions, which we consider as leaders in this field, as evidenced by the high priority given to energy efficiency in policies as well as the quantities of energy efficiency investments which they make.

From the private sector, a number of best practices and tools are described in this chapter. Many of these are partial approaches, and do not explicitly seem to refer to prioritising energy efficiency first across all relevant transaction segments. For this reason, the WG has developed a set of recommendations which focus on governance, portfolio management and transaction-level processes. Further, the WG notes that due diligence procedures act as a compliance check that all energy efficiency investment has been considered prior to investment or credit committee approval.

### 5.1 The context for energy efficiency first tools

When considering the types of tools that could help financial institutions operationalise energy efficiency first, we start by considering the context in which the tools will be applied including existing policies and processes, such as the basic deal origination and approval processes. These operational processes sit within a wider eco-system of organisational policies, decision making processes, IT-systems and financial and non-financial reporting systems including those driven by TCFD and the EU Taxonomy regulation. **Failure to consider the interactions between energy efficiency first and these existing, mandatory or widely used operational policies and systems will hinder the operationalisation of energy efficiency first.** Financial and environmental risk assessment processes and methods need to be infused with energy performance considerations and transaction-level KPIs which lead to sustainable outcomes (like reduced energy intensity).

To put EE1st tools in context, we use a typical generic deal process model with five stages: development, due diligence, underwriting, deployment of capital, and operation. These stages are punctuated by an initial approval decision prior to committing resources through due diligence and a final approval decision as a result of underwriting, followed by on-going asset management for the life of the investment or loan. These stages and decision points

are illustrated in Figure 6. Most financial institutions have developed a tailored version of this generic approval process model.

Figure 6 illustrates this generic process overlaid with the three layers that need to be considered when developing tools to operationalise energy efficiency first: the policy and governance level; the portfolio level; and the deal level. For each level the types of questions that need to be answered to truly incorporate the energy efficiency first principle are shown as well as brief descriptions of the kinds of tools that are needed.

A draft contents list for a generic guide on adopting energy efficiency first is included in Appendix G.

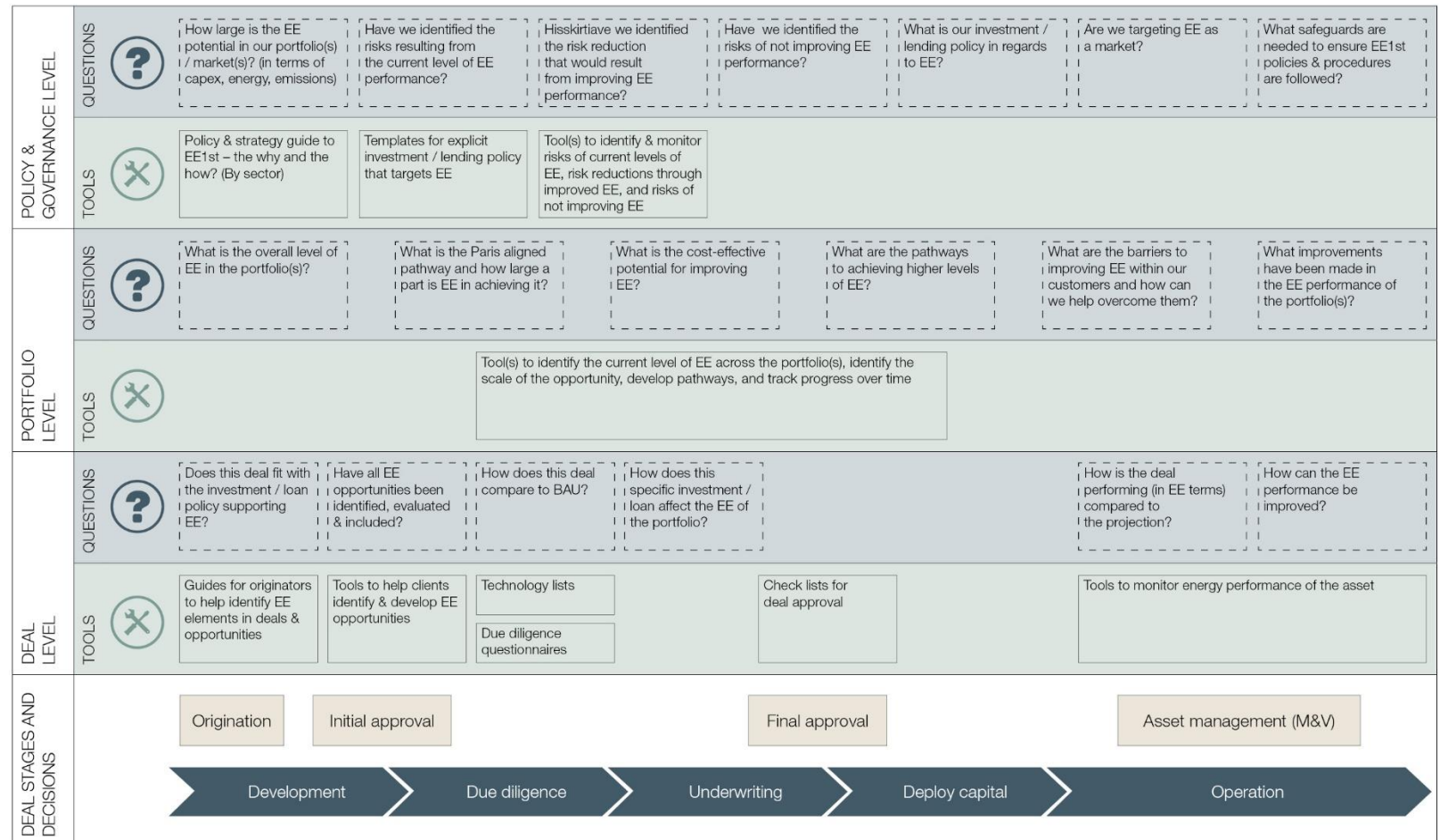


Figure 6: Stages of a transaction, question to be asked and types of tools required

## 5.2 Three different levels of tools are required

As discussed above there is a need for tools at three levels: policy and governance; portfolio; and deal level. The purpose, needs and characteristics of tools at each of these levels are discussed below.

### 5.2.1 Policy and governance level

As discussed in Chapter 2, to operationalise the energy efficiency first principle within financial institutions it is first necessary to include it in the organisation's sustainable finance policies and/or ESG/climate change strategy and in high-level and operational governance processes. Tools at this level should link to key legislation and regulations. Only by embedding the principle at this level will effective action occur at the operational levels.

The development of internal policy and governance level tools such as interpretive guidance, recognised processes, lists of standards, and reporting requirements can motivate senior management and board members to include energy efficiency in policy and strategy. The public and private sector case studies presented above show that there are examples of strong and effective policy and governance level tools, but undoubtedly they are not so widely established as to be said to set norms of market behaviour. Clearly putting energy efficiency on the Board's agenda, (in the way that sustainability and ESG have entered the agenda in the last few years), in the context of transactions where the energy dimension is material is a critical first step.

The tools at this level are linked to non-financial reports and can be as simple as a count of energy efficiency mentions in policies, or – as suggested by CREFC Europe in response to the survey – a simple link to (improved and sector-relevant) EC implementation guidelines, or inclusion of energy efficiency in board agendas. This is important because policy commitment is needed to help investors and lenders discriminate appropriately between assets with higher or lower levels of energy efficiency. Importantly, policy commitment also needs to recognise brown-to-green strategies and the deployment of green capital to improve the energy efficiency of real estate assets for which that is the right solution.

In private sector financial institutions, the strategic case has to be made that adopting an energy efficiency first policy has value to the organisation in commercial terms, as well as to its sustainability commitments and Paris alignment. Policy level commitments drive origination, so clarity is needed to define the importance of energy efficiency and translate that into organisational priorities.

#### **Design elements of policy and governance level tools**

The role of senior decision makers in the context of operationalising the energy efficiency first principle is threefold:

1. Understand the potential for improved energy efficiency both within existing portfolios and future planned products;
2. Steer the organisation to operationalise energy efficiency first by setting policy, initiating development of tools, and putting in place safeguards to embed energy efficiency into processes and performance measurement; and
3. Communicate the role and benefits of energy efficiency to the organisation.

These roles are shown in Figure 7 below:

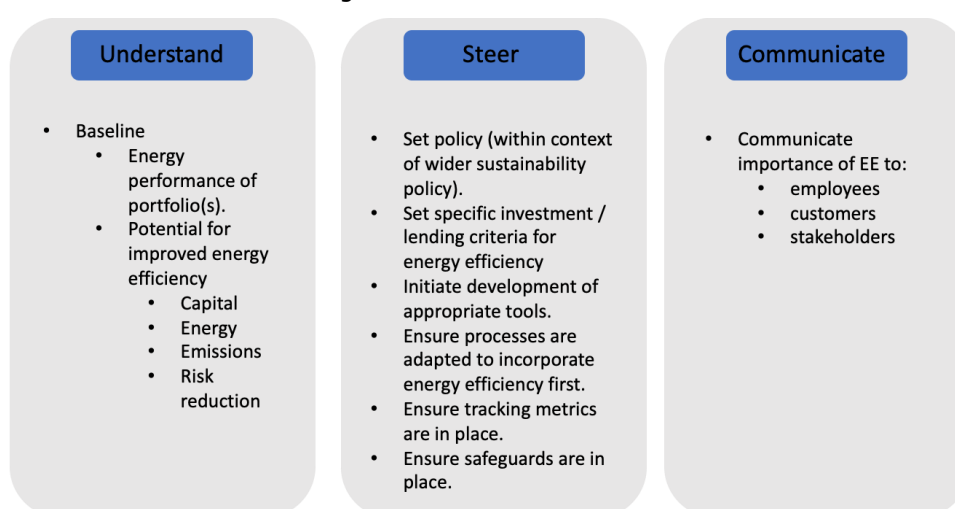


Figure 7: The roles of senior decision makers in adopting EE1st

In order to support senior decision makers in fulfilling these roles a number of tools can be envisaged. Policy and governance tools and guidance need to: a) motivate senior level decision makers within financial institutions to take action; and b) outline the actions they need to take: i.e. provide the 'why?' and the 'how?'.

Tools could include:

- > A company white paper as to why explicit focus on energy efficiency action as part of their sustainability and business strategy is a valuable approach for their business. A suggested content list is shown in Box 1 below.
- > A 'how to' guide for including energy efficiency first in non-financial reporting.
- > A 'how to' guide for including energy efficiency first into existing risk registers.

### Why this organisation needs to identify and invest in energy efficiency.

- Brief explanation of what is meant by energy efficiency including discussion of the strategic need to make it a priority.
- Explanation of the role of energy efficiency in decarbonisation with sectoral examples and how corporate sustainability targets can be achieved through energy efficiency investment.
- Common types of energy efficiency investments in relevant sectors.
- The opportunities presented by energy efficiency – including lending / investing more in more resilient projects and the creation of new markets driven by the long-term climate objectives and rising customer demands.
- The risks of not identifying and investing in energy performance on a timely basis for clients and for the institution.
- Consideration of multiple non-energy benefits of energy efficiency improvements (such as comfort, health, job creation, and improved energy security) and their long-term value impacts.
- Regulatory Compliance: The need to align with EC policy and the energy efficiency first principle to avoid stranded assets and manage regulatory risk.

*Box 1. A suggested contents list for a company White Paper on energy efficiency*

A suggested contents list for a 'how to operationalise energy efficiency first' guide is shown in Appendix H.

## 5.2.2 Portfolio level tools

Portfolio level tools help assess energy efficiency levels across a portfolio, (or portfolios) and can be used to track risk, progress and opportunities across a portfolio of similar assets such as residential mortgages, commercial real estate loans, SME loans, or industrial sector lending. At the portfolio level energy efficiency first has to become an aspect of portfolio management and deal level data from origination through to execution needs to be integrated at the level of operational division or department. Granular, timely energy usage data is an essential input for this, and technological platforms are likely to be a key tool for portfolio-level monitoring and the identification of opportunities for intervention.

### **Design elements of portfolio level tools**

Portfolio level tools are needed to report on energy and emissions across portfolios, and benchmark and track their improvements over time. Key questions that such tools need to answer include:



- > What is the current energy performance of the portfolio and how does that compare with:
  - > Comparable portfolios?
  - > Paris aligned targets?
- > What is the cost-effective energy efficiency potential within the portfolio?
- > What are the cost-effective options for improving the energy performance of the portfolio?
- > What are the barriers to improving energy efficiency amongst our customers and how can we help them over-come them?
- > What improvements have been made in the energy efficiency of the portfolio over time?

Portfolio tools are likely to be data intensive and clearly they will be based on pulling through and aggregating deal level data that is used in deal level tools.

The question of defining and measuring energy efficiency performance is central to the problem and appropriate sector specific metrics are needed but measuring energy efficiency performance, both at individual asset and portfolio level, is not straight forward. Many financial institutions with real estate investment portfolios, in the absence of real energy data, use EPCs as a proxy for actual performance despite the well documented inconsistencies of EPCs. Advancements in data gathering through smart meter data and techniques such as analysis of satellite imagery offer great promise, and are starting to be applied, although direct use of consumption data is constrained by data protection considerations.

In industry other metrics need to be used such as sector energy intensity but the choice of comparables is important. Many investments are labelled as 'energy efficiency' because they achieve a higher level of efficiency than the base line performance of the asset, or the average for the sector, but this is only because regulations and/or technology have improved. An energy efficiency first approach requires identifying and evaluating all energy efficiency opportunities and implementing cost-effective ones. This means going beyond 'business as usual'.

### 5.2.3 Deal level tools

Deal level tools need to enable non-technical operational staff to ensure that energy efficiency is considered in lending and investment decisions where energy use is material, and to measure the resulting impact. At the deal level, the technical specifics are the most detailed and energy saving opportunities, as well as their economics, will be driven by location, asset and sector specific factors. The tools will need to be set into the natural operational framework and systems of the financial operator, so that normal origination and approvals processes work seamlessly with the new energy efficiency specific elements.

In order for this to work, the necessary data inputs need to be readily available, recognised standards need to be in place to allow energy efficiency and changes in it to be measured, and the suite of actions to be undertaken by the organisation in particular deal contexts need to be clear and "on the shelf": not

only in the homogeneous context of retail mortgage lending but even in the much more heterogeneous context of commercial property lending, processes that embed EE1st need to be commoditised and integrated into deal flow behaviours. Transaction documentation standards need to evolve (probably at the market level) to allow the right information and intervention rights for driving EE1st performance improvements.

The tools at the deal level, like those at portfolio level, will have to be tailored to the specific needs of sub-sectors within the financial sector e.g. asset managers, commercial real estate lenders, commercial real estate equity investors, corporate lending, retail residential mortgages, bonds and so forth. Within particular sectors or markets, it can be important for market participants to agree on best practice standards, eliminating the frictional costs and confusion that can arise from unnecessary inconsistency.

Deal level tools can be further divided into those that are used pre-deal completion, and those that are used post-deal completion to monitor on-going energy efficiency performance level (as part of the asset management function) and compare it to the projected levels. Post-deal tools are likely to be best integrated into portfolio level asset management tools.

### Design elements of deal level tools

Key questions that deal level tools need to answer prior to the deal proceeding include:

- > How does the asset / project and the associated business plan fit with the institution's overall EE1st strategy and policies (e.g. brown-to-green strategy)?
- > Has the proposed asset / project been assessed to identify cost-effective energy efficiency solutions? (eg. Through an energy audit)
- > Has the asset / project incorporated all the potential cost-effective energy efficiency solutions? If not:
  - > What are the constraints and can they be overcome?
  - > What are the cost-effective energy efficiency solutions?
- > How does the energy performance of the asset / project compare to similar assets / projects in the same class?
- > How does the energy performance of the asset / project compare to Business as Usual? i.e. is it really energy efficient?
- > How does the energy performance of the asset / project compare to the average of the existing organisational portfolio and what effect will it have on portfolio-wide energy performance?
- > How does the energy performance of the asset / project compare to those required by the EU Taxonomy in respect of energy efficiency?
- > How does the energy performance of the asset / project compare to the Paris aligned 2030 and 2050 targets for the sector?

In addition, as illustrated by the ING REF example as well as the Lloyds Bank example (see below), financial institutions can be proactive in developing guidance and tools for customers and prospective customers to help steer them towards developing energy efficiency first solutions when considering replacing or upgrading buildings or assets.

Post-deal tools need to ask the questions:

- > How does the energy performance of the asset / project compare to the Paris aligned 2030 and 2050 targets for the sector?
- > What further improvements can be made in energy efficiency performance as energy costs, technological capabilities, capital costs and the regulatory environment change over the life of the asset?

The design of operational deal tools is necessarily sector specific but the questions above, along with appropriate metrics, can be included in due diligence questions to be used during deal development and in formal due diligence.

At the deal level there are clear connections between technical standards and best practices and tools for use within financial institutions will rely heavily on technical standards. As mentioned in Chapter 3, international standards are enabling & de-risking tools for financial institutions to operationalize the EE1st principle and embed them in their due diligence and underwriting procedures. They also provide materiality to accounting, reporting and disclosure. As well as international ISO or EN standards there are a number of other accepted protocols which are in wide use and need to be recognised by financial institutions, including the International Performance Measurement and Verification Protocol (IPMVP)<sup>70</sup>, and the protocols for energy efficiency project development from the Investor Confidence Project (ICP)<sup>71</sup>. Operational tools should make full use of appropriate technical standards which will often require specific technical assistance to the financial institution.

Different asset classes, financial instruments and types of financial institutions need different tools. In addition to classifying the three levels of tools that can support adoption of the energy efficiency first principle, WG members identified the different needs of different types of financial institution, financial instrument and asset class. Putting energy efficiency first in the execution of a mortgage by a retail bank requires a completely different approach and tools than to put energy efficiency first in the engagement strategy of a listed asset manager for a debt or equity fund, or a private equity or venture capital fund manager.

Suppliers of data and technology tools to different financial institutions appreciate the segmentation of that market and the different use-cases of their products and services. In essence, the same approach is required to operationalise the energy efficiency first principle within each of these types of organisations and tools will be needed at each of the three levels to answer the same questions. The tools, metrics and degree of influence will change. The

<sup>70</sup> <https://evo-world.org/en/products-services-mainmenu-en/protocols/ipmvp>

<sup>71</sup> <https://europe.eepformance.org>

precise mapping of the tools required by each type of institution, types of instrument and asset class goes beyond the scope of the work of the WG, but members have outlined a template (shown in Appendix F) which provides a frame for that mapping.

A tailored approach to operationalising and prioritising energy efficiency within different asset classes starts with a clear differentiation between equity investment processes and lending (debt). Within equity-style investment processes, the WG identified the need to segregate private equity, public market investments, project equity, growth capital, buy-out funds, real estate equity, and infrastructure equity. Although this may be considered a complication, the different processes and constraints within different sub-sectors necessitate sub-sector specific guidance and tools. There is a place for an overall, umbrella guidance, but this will necessarily be general and has to be followed up by sub-sector specific guidance and tools. The WG also noted that, in general, equity investing (except secondary share purchases) tends to have longer investment cycles and can exert greater leverage over project design and entity or project priorities than provision of debt. The asset class with the strongest link to energy efficiency first is real estate.

Among lending operations, the WG identified residential mortgages as distinct from commercial mortgage lending, general corporate lending, debt security underwriting, secondary debt market investing (e.g. bond funds), asset-backed structures and sovereign debt funds. The longer the lending cycle (e.g. project finance is longer than secondary sovereign bond purchase) and degree of structuring control of the underlying project (e.g. primary infrastructure debt structuring has greater asset design/ cash flow control than general corporate lending), the greater impact energy efficiency first inputs can have.

Finally, passive funds that invest in the secondary markets will have a lower potential to deploy energy efficiency first, whilst active investors in primary origination and deal structuring will have higher influence over improving energy performance.

Section 5.3 provides a deeper dive into the existing tools that are already considering energy efficiency in different organisations investing in different asset classes, and this clearly demonstrates some of the design features discussed here.

### 5.3 Summary of types of tools and examples

The following table summarises the questions and main types of tools by the three levels identified above and gives specific examples of tools identified by the WG which are described later in this chapter.

Level	Type of tool	Examples
Policy and governance	Policy & governance guide to EE1st – the why and the how? (by sector)	EBRD Green Economy Transition strategy, EIB Energy Lending Policy

	Explicit energy efficiency first policies.	EIB Energy Lending Policy, EBRD Green Economy Transition Approach 2021-2025, Aviva Real Estate Sustainable Transition Loan Framework ING REF lending policy
	Tools to identify & monitor risks of current levels of EE, risk reductions through improved EE, and risks of not improving EE.	CRREM
	Safeguards for EE1st policies and procedures	World Bank safeguards
Portfolio	Portfolio wide energy & emissions measurement	Allianz, Verco CRREM pathways tool, GRESB, GRI 302, d-fine & SkenData
	Identification of opportunities	Allianz, Verco CRREM pathways tool, eSave
	Identification of pathways	Allianz, Verco CRREM pathways tool
	Tracking progress over time	Allianz, Verco CRREM pathways tool, GRESB Portfolio Analysis Tool
Deal	Guides for originators to help identify EE opportunities	EIB PF4EE tools, EIB Green Eligibility Checker
	Explicit deal level targets e.g. for building energy performance	ING REF, Aviva, Société Générale, IFC Edge
	Tools to help clients identify EE opportunities	ING REF, Lloyds Bank, eSave FP, EBRD Green Technology Selector
	Due diligence questionnaires	CREFC Europe DD checklist
	Technology lists	EIB Green Technology List, EBRD Green Technology Selector
	Check lists for deal approval	SDCL
	Others	Taxonomy Compass, EEFIG Derisking Energy Efficiency Platform, EEFIG Underwriting Toolkit, IFC EDGE & other building design standards, IPMVP, Investor Confidence Project protocols,
	Tools to monitor performance of an asset	IPMVP

## 5.4 Examples of policy and governance tools

The following section summarises some of the tools identified by the Working Group in different sub-sectors and at different levels. Examples of selected tools on the policy and governance level that help senior decision makers answer questions on why and how to adopt EE1st and how to integrate energy efficiency into risk assessment and reporting processes. They include EBRD's Green Economy Transition (GET) strategy, EIB's Energy Lending Policy, World Bank safeguards; and the Aviva Real Estate Sustainable Transition Loan framework.

### 5.4.1 EBRD Green Economy Transition Approach 2021 – 2025

The EBRD's Green Economy Transition Approach 2021-2025 (GET 2.1) is an example of a policy and governance level tool that sets out the bank's approach to supporting the transition to a green, low-carbon and resilient economy by:

- > aligning its activities with the principles of international climate agreements, principally the Paris Agreement
- > enhancing policy engagement for the development of long-term low carbon strategies and the greening of financial systems; and
- > scaling up investment by innovating across a set of specific environmental and climate mitigation and adaptation thematic areas.

Within the GET 2.1 there are ten thematic areas with energy efficiency being one of its two cross-cutting thematic areas. The importance of energy efficiency within the GET 2.1 is reflected by the fact that it is mentioned 52 times in 84 pages. The GET 2.1 also defines metrics for energy efficiency and reports on performance to date.

### 5.4.2 EIB Energy Lending Policy

The EIB's Energy Lending Policy (2019) has four themes:

- > Unlocking energy efficiency
- > Decarbonising energy supply
- > Supporting innovative technologies and new types of energy infrastructure
- > Securing the enabling infrastructure.

The policy states:

*The bank recognises that the 'energy efficiency first' principle applies across all energy investment activities. This refers to the need "to consider, before taking energy ...investment decisions, whether cost-efficient, technically, economically and environmentally sound*

*alternative energy efficiency measures could replace in whole or in part the envisaged ....investment measures". For the Bank, this translates into a requirement to consider carefully the impacts of energy efficiency on future energy demand, when assessing the economic case for energy investments. In this sense, this principle applies to the entire energy lending policy.*

Within the Bank's operations energy efficiency is increasingly combined with other sector such as social housing, hospitals, schools, innovation etc.

### 5.4.3 World Bank safeguards

The World Bank's current environmental and social safeguard policies list the objectives which are then broken down into operational principles. One of the 11 Operational Policies is Performance Standards for Private Sector Activities which includes Performance Standard 3: Resource Efficiency and Pollution Prevention.

An Operational Manual is provided for each, consisting of policies (e.g. for *Piloting the Use of Borrower Systems to Address Environmental and Social Safeguard Issues in Bank-Supported Projects* 2. Equivalence and Acceptability; 3. Addressing Gaps; 4. Borrower Role and Obligations; 5. Bank Responsibility; 6. Changes in Borrower Systems and Bank Remedies; 7. Disclosure)<sup>72</sup> and procedures (e.g. for *Piloting the Use of Borrower Systems to Address Environmental and Social Safeguard Issues in Bank-Supported Projects* 1. Roles and Responsibilities; 2. Assessing Equivalence and Acceptability; 3. Early Notification and Disclosure; 4. Further Documentation and Disclosure; 5. Changes in Borrower Systems; 6. Supervision)<sup>73</sup>.

These environmental and social policies of the Bank are known as the "Safeguard Policies," the mechanism for addressing environmental and social issues in project design, implementation, and operation, and they provide a framework for consultation with communities and for public disclosure. In August 2016, the World Bank adopted a new set of environment and social policies called the Environmental and Social Framework (ESF), which became effective on 1.10.2018 and applies to all Investment Policy Financing (IPF) projects initiated after this date through 10 Environmental and Social Standards (ESS) that are designed to support Borrowers' environmental and social (E&S) risk management.

With existing projects continuing to apply the Safeguard Policies, the two systems will run in parallel for an estimated seven years. For each of the 10 ESS a detailed Guidance Note<sup>74</sup> is provided alongside other resources such as templates and checklists. ESS3 Resource Efficiency and Pollution Prevention and Management is the relevant standard that deals with energy efficiency.

<sup>72</sup> Available at <https://policies.worldbank.org/en/policies/all/ppfdetail/1564>

<sup>73</sup> Available at <https://policies.worldbank.org/en/policies/all/ppfdetail/1610>

<sup>74</sup> Available at <https://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards>

#### 5.4.4 Aviva Investors Real Estate Sustainable Transition Loan framework

Aviva Investors Real Estate has developed a Sustainable Transition Loan framework to support its long-term of originating at least £1 billion of Sustainable Transition Loans accredited to the framework by 2025, creating loan term incentives to ensure measurable improvements on buildings, and 'delivering tangible impact' with external verification through Second Party Opinions. The Sustainable Transition Loan framework is aligned to the SDGs, particularly SDG 7, 9, 11 and 13. It is aligned with the LMA Sustainability Linked Loan Principles and draws from the Climate Bond Initiative Standards and the EU Sustainable Finance Taxonomy.

On energy efficiency the Aviva framework has eligibility criteria (applicable to the project / business plan, note, not simply to the condition of the asset at the time of the proposed financing) such as:

- > Reduce energy demand by at least 30% in comparison to the energy performance of the building before the renovation, in line with the Taxonomy's 'Building renovation' (8.2) for 'Construction and real estate activities'; or
- > Improvement in energy efficiency through transition to EPC rating B or higher; or
- > Achieving green building certification through BREEAM excellent or outstanding accreditation.

As well as energy efficiency the framework has standards for renewable energy which align with RE100's technical criteria.

### 5.5 Examples of portfolio-level tools

The portfolio level tools enumerated in this subchapter answer questions such as what the energy efficiency performance of the existing portfolio is and how to improve it and include: Verco's net zero tool; GRESB Portfolio Analysis Tool; eSave's Financial Products; Mortgage Portfolio Standards; GRI Sustainability Reporting Standards: GRI 302 Energy; Lloyds Bank commercial lending for house builders; CRREM and Allianz Lebensversicherung's tool developed with d-fine and SkenData, also mentioned in its respective case study in sub-chapter 3.2.

#### 5.5.1 Verco CRREM pathways tool

Verco is a consultancy focused on net zero that works with several real estate companies and has developed a model to help assess the cost of net zero and the integral parts to achieving it: energy efficiency being the primary one. The model requires simple building characteristics like floor area and heating system type, and a few other key assumptions. The model also has access to a database of net zero interventions which came from a project for the UK government



where they looked at hundreds of building audits and their abatement potential, as well as thousands of remote surveys on energy efficiency potential.

For each building, the model creates an energy and carbon baseline and looks at a forecast pathway for energy and carbon reduction and compares this with industry frameworks (including Carbon Risk Real Estate Monitor, CRREM).

The model provides both absolute and marginal cost abatement options. Verco's strategy has largely been based on marginal costs to help clients pick the right intervention points, especially on deep retrofit projects. Verco's clients typically use the model to do initial high-level net zero pathway forecasts, both at asset and fund level, and they increasingly want to do bottom-up audits to provide detailed asset renovation plans. Only one client has so far committed to audit all the assets in their portfolio, with most clients starting with assets at highest risk and moving forward from there. The model can provide different scenarios, typically developing nuanced strategies for clients, looking at brown-to-green transition and do it as quickly as possible.

There are a fairly significant range of outcomes when comparing typical baselines of different asset types against the targets in different regions, the targets are a function of both the current status of national policy as well as asset types-specific characteristics. Verco conducted a detailed study of typical cost ranges for 18 identified buildings to show how CRREM 2050 targets might be met. The illustrations below show how the cost ranges are broken down by asset type and intervention (short and long payback, solar, heat decarbonisation and deep retrofit).

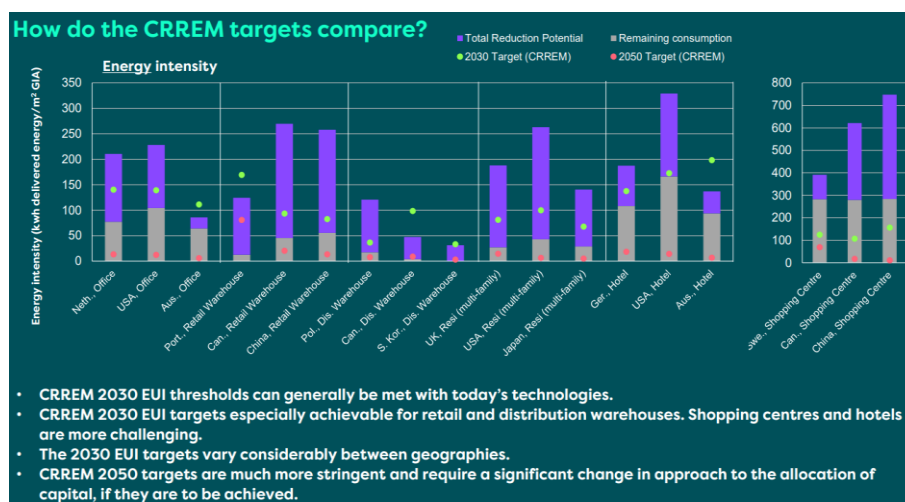


Figure 8. Output from the Verco tool. How do the CRREM targets compare?

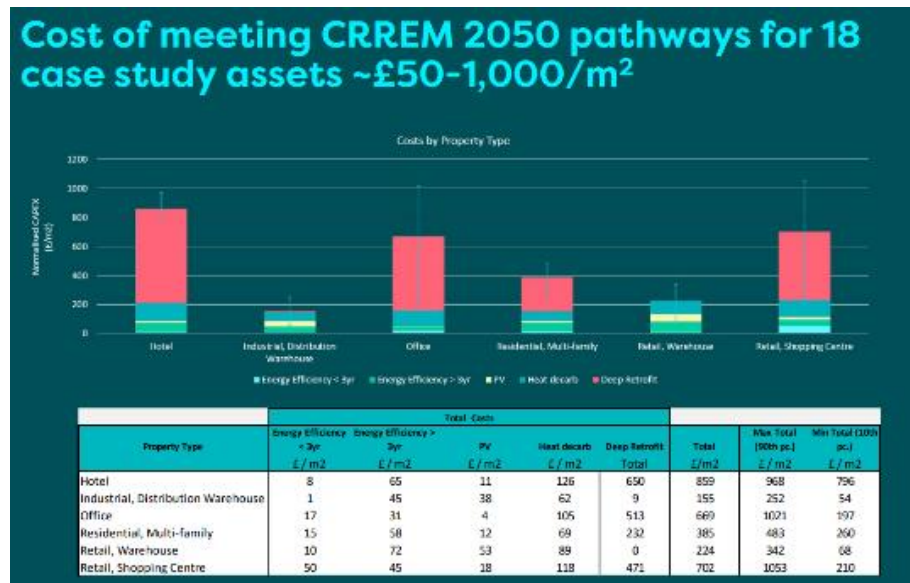


Figure 9. Output from the Verco tool. Cost of meeting CRREM 2050 pathways.

Another illustration of what the tool can do shows how at the portfolio level stranded asset risk is identified and how the percentage of portfolio that is stranded can be reduced by bringing forward the interventions in the model. The chart below shows cumulative cost build-up for a typical portfolio that models the investments required to keep portfolio aligned with CRREM in 5-year temporal buckets: initially you can maintain alignment with low-cost interventions and then investments have to increase.

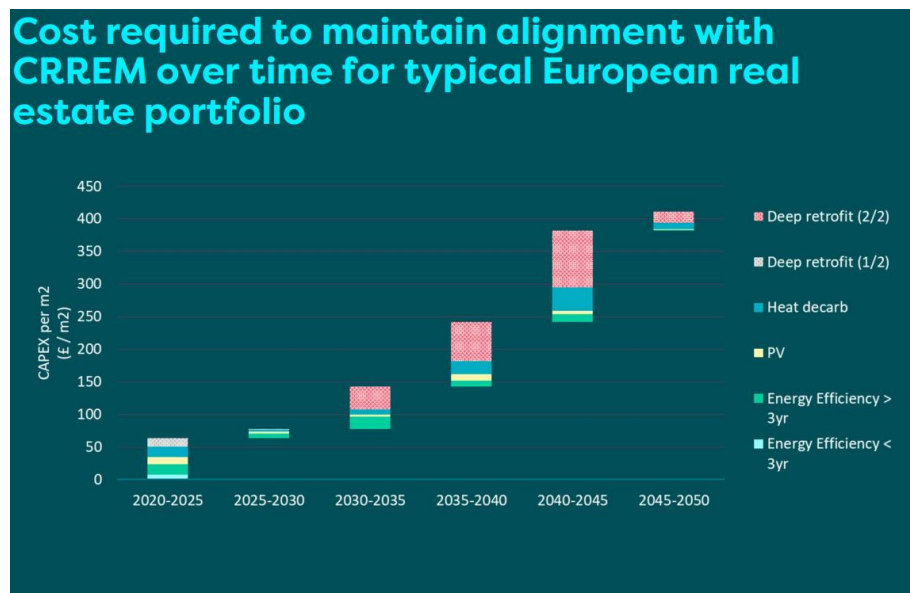


Figure 10. Output from the Verco tool. Costs required to maintain alignments with CRREM over time for a typical European real estate portfolio.

### 5.5.2 GRESB Portfolio Analysis Tool

GRESB was established in 2009 by a small group of investors in 2009 and is now used by more than 170 institutional and financial investors to monitor investments, engage with managers and make informed decisions. The portfolios of more than 1,500 real estate companies, REITs, funds and developers – and more than 700 infrastructure funds and asset operators – participate in GRESB Assessments. This broad market coverage provides investors with ESG data and benchmarks for more than \$6.4 trillion worth of assets under management.

GRESB offers its members a portfolio analysis tool to compare the relative performance of each real estate portfolio. This tool allows funds to:

- > Measure ESG performance against a self-selected benchmark based on location, legal structure, sector, and management style.
- > Calculate the environmental footprint of a portfolio.
- > Identify the investments in the portfolio that are leading on ESG performance and those that are underperforming.
- > Calculate the environmental efficiency of a portfolio in terms of energy consumption, greenhouse gas emissions, water usage and waste streams.
- > Improve ESG reporting to your stakeholders.
- > Determine if investment portfolios are being managed productively, efficiently and responsibly.

### 5.5.3 eSave Financial Products

eSave Financial Products<sup>75</sup> (eSave FP) is an online tool designed for banks and financial institutions which enables them to assess energy efficiency and renewable energy portfolios and credit lines. It currently includes over 60 RE/EE measures, and for most measures eSave FP calculates the energy savings in primary and secondary energy as well as reductions in CO<sub>2</sub> emissions.

### 5.5.4 Mortgage Portfolio Standards

The Mortgage Portfolio Standard (MPS) was initially defined and recommended in the recast Energy Performance of Buildings Directive published by the European Commission on 15<sup>th</sup> December 2021:

**Definition 36. (p. 41 EPBD recast):** ‘mortgage portfolio standards’ means mechanisms incentivising mortgage lenders to increase the median energy performance of the portfolio of buildings covered by their mortgages and to encourage potential clients to make their property more energy-performant along the Union’s decarbonisation ambition and relevant energy targets in the area of energy consumption in buildings, relying on the definition of sustainable economic activities in the EU Taxonomy.

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<sup>75</sup> <https://macsesave.com>

Supported by ambitious Member States, as a mechanism to promote private finance for renovation, the MPS definition remained unchanged in the “[General Approach EPBD text](#)” approved in October 2022 by Council for trilogues. This MPS definition is used in article 15.4 of the EPBD, where Member States are encouraged to promote the roll-out of enabling funding and financial tools such as mortgage portfolio standards:

***EPBD Article 15.4:*** *To support the mobilisation of investments, Member States shall promote the roll-out of enabling funding and financial tools, such as energy efficiency loans and mortgages for building renovation, energy performance contracting, fiscal incentives, on-tax schemes, onbill schemes, guarantee funds, funds targeting deep renovations, funds targeting renovations with a significant minimum threshold of targeted energy savings and **mortgage portfolio standards**.*

Mortgage Portfolio Standards (MPS) also received public endorsement from [IIGCC](#) (Institutional Investor Group on Climate Change with 300+ members representing EUR 37 trillion assets under management). [ING](#) already uses MPS (a leading EU retail bank with 57,000 employees serving 38 million customers in over 40 countries) as do ABN Amro and other mortgage lenders with Science Based Climate targets. MPS was included as a case study on page 38 of the IEA’s annual update on global developments in energy efficiency “[Energy Efficiency 2021](#)” and as #5 recommendation to financial institutions on [page 18 of their 5-year update](#) of the landmark EFIG report [launched in Glasgow](#).

However, lenders are not the owners of the underlying buildings in their loan portfolios, so the decision to improve the energy efficiency of properties is the choice and responsibility of borrowers, as owners, supported by lenders via specific instruments, such as energy efficient or green mortgages or renovation loans. The decision of how to align their mortgage portfolio with their institutional net-zero and Paris commitments should be left to the financial institutions, with input from their regulator to limit climate risks, to define their own path for renovating the properties underlying their mortgage portfolios.

### 5.5.5 GRI Sustainability Reporting Standards: GRI 302 Energy

The GRI is a globally recognized and used standard and it is issued by the Global Sustainability Standards Board (GSSB).

In the field of energy efficiency the “GRI 302: Energy” is a topic-specific GRI Standard in the 300 series (Environmental topics) and it provides disclosures on the management approach (as a narrative explanation of how an organization manages a material topic, the associated impacts, and stakeholders’ reasonable expectations and interests) and the following topic-specific disclosures:

Disclosure 302-1 Energy consumption within the organization

Disclosure 302-2 Energy consumption outside of the organization

Disclosure 302-3 Energy intensity, which requires the following information:

- Energy intensity ratio for the organisation
- Organisation specific metric (the denominator) chosen to calculate the ratio
- Types of energy included in the intensity ratio: whether fuel, electricity, heating, colling, steam, or all.
- Whether the ratio uses energy consumption within the organisation, outside of it or, or both.

Disclosure 302-4 Reduction of energy consumption, which requires the following information:

- Amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives
- Types of energy included in the reductions
- Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it
- Standards, methodologies, assumptions, and/or calculation tools used.

Disclosure 302-5 Reduction in energy requirements of products and services.

The use of GRI 302-3 and 302-4, if applied to a financial institutions portfolio could provide a portfolio level measurement and management tool for helping to target energy efficiency investments and prioritise energy efficiency. To compare data from different statements can be a valuable way to verify changes and improvements in energy efficiency within any organization.

However, the selection of a denominator for diverse portfolios will present challenges, for similar types of real estate floor area would be appropriate.

### 5.5.6 Carbon Risk Real Estate Monitor (CRREM)

Carbon Risk Real Estate Monitor Project (CRREM) is a science-based tool focused on carbon risk exposure and potential strategies to reduce this risk that offers reduction pathways in both carbon emissions and energy intensity. It considers the different energy intensities of buildings in different locations for portfolio pathways, and these portfolio pathways enable industry stakeholders to estimate carbon and stranding risks associated with premature obsolescence and write-downs due to changing market expectations and legal regulations.

CRREM aims to optimize the industry's investments in energy efficient retrofits by making risks related to specific buildings more transparent and by unveiling

opportunities for property owners and investors with its Excel tool which assess the risk of stranded assets, and provides applicable greenhouse gas-reduction pathways according to the Science-Based Targets Initiative, as well as provide reporting templates, in order to contribute to accelerating the decarbonisation of the EU building stock to both 1.5 and 2° C targets.

### 5.5.7 d-fine & SkenData tool

The lack of energy-related data, especially information derived from energy performance certificates (EPCs), is a common problem for financial institutions with mortgage portfolios. However, evaluating and predicting energy demand and emissions intensity is key to optimise the financed portfolio in terms of the energy efficiency first principle.

That is why the European management consultancy d-fine together with data integrator and model provider SkenData created a complex solution to close the above-mentioned data gaps by tapping into the potential of novel data services from satellite imagery.<sup>76</sup> The model uses minimum input information, i.e. address and year of construction, as well as official cadastre data and regional statistics mapped to aerial photography in order to create a digital representation of each building and its most relevant technical properties. The reliability of the model can be further enhanced if additional details, e.g. regarding the heating system or past refurbishments, are available. Eventually, all information is utilized to perform calculations of the energy performance at the specific asset level based on the same standards that provide the methodical foundation of the issuance of EPCs.

The obtained data is processed within a business intelligence tool and visualized in a dashboard at any aggregation. The tool also allows to simulate different portfolio strategies over time and to verify whether these strategies are aligned with mid-term and long-term objectives. The corresponding algorithm is embedded in a module that is capable to compute even extensive mortgage portfolios.

## 5.6 Examples of deal-level tools

Deal level tools that ask questions such as can the energy efficiency performance of an asset can be cost-effectively improved include: CREFC Europe's Due Diligence Tool for commercial real estate lenders; EBRD's Green Technology Selector; EIB's PF4EE WebCheck and EEQuest Tools and its Green Eligibility Checker; IFC's EDGE; and the ING REF app also mentioned in sub-chapter 3.2. in the ING case study.

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<sup>76</sup> M. Seifert, A. Pankiewicz, P. Wörner, et al.: Help from outer space – how to solve the green data challenge, Whitepaper, 2021, <https://www.d-fine.com/news/green-data-challenge/>

### 5.6.1 Derisking Energy Efficiency Platform (DEEP)

DEEP<sup>77</sup> is an open-source database for energy efficiency investments performance monitoring and benchmarking. It was developed during the EEFIG Derisking Project (2016-17) and has been kept up to date. The vision driving the development of DEEP is increased energy efficiency financing through improved understanding of the real risks and benefits of energy efficiency investments based on market evidence and investment track records.

DEEP currently (July 2023) has data on over 37,000 projects across Europe covering buildings and industry. Of these 20,144 are building projects with a median payback period of 5.9 years and a median avoided energy cost of 1.9 euro cents per kWh. In industry there are 17,688 projects with a median payback period of 2.9 years and a median avoided energy cost of 2.1 euro cents per kWh.

DEEP allows the user to access anonymized historical data which can be sorted in several ways such as by country or by project type and presented graphically. This can enhance understanding of and access to energy efficiency finance related business opportunities, streamline underwriting procedures, decrease due diligence and transaction costs, and improve risk assessment. It also allows users to upload their own individual projects or portfolios and benchmark them against user-selected sub-sets of projects in DEEP using a web interface, spreadsheet or API.

### 5.6.2 EEFIG Underwriting Toolkit

The EEFIG Underwriting Toolkit<sup>78</sup> was developed in 2016-17 alongside DEEP as part of the EEFIG Derisking Project. The toolkit is designed to assist financial institutions build capacity in their understanding of energy efficiency projects and their value and risk assessment. It was designed with several objectives in mind:

- > To help originators, analysts and risk departments better understand the nature of energy efficiency investments and therefore better evaluate both their value and risks.
- > To provide a common framework for evaluating energy efficiency investments that will allow training and capacity building around standardised processes and understanding.
- > To help developers and owners seeking to attract external capital to energy efficiency projects to develop projects in a way that better addresses the needs of the financial institutions.

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<sup>77</sup> <https://deep.eefig.eu>

<sup>78</sup> <https://valueandrisk.eefig.eu>

- To foster a common language between project developers, project owners and financial institutions.

Although the focus is on value and risk appraisal, additional material on the size of the potential market, methods of financing and the project life cycle is also included in order to help build capacity within financial institutions.

### 5.6.3 CREFC Europe Due Diligence Tool for commercial real estate lenders

CREFC Europe is a non-profit membership body for the European real estate finance markets with a focus on lending secured on commercially owned and operated buildings. It is focused on the B2B market and has about 150 member firms including more than 50 lenders across Europe. In May 2021, as part of its wider initiatives on ESG and climate, CREFC Europe published a Climate Due Diligence tool for its members in May 2021.

A CREFC Europe working group is currently working on a standard due diligence questionnaire for lenders to ask borrowers to complete. It is worth noting that despite very broad agreement among member firms that there is real value in agreeing voluntary industry good practice standards in this way, doing so is in practice a difficult and slow process, as firms struggle to set aside the resource required to do it and grapple with the competition law implications of sitting round the table together with competitors. In the absence of accepted industry standards, it is very difficult for EE1st to become a normal aspect of the real estate financing landscape.

The existing CREFC Europe tool includes preliminary due diligence questions and more detailed questions on different aspects including energy efficiency. The preliminary questions on energy efficiency are:

- To what extent has the borrower set minimum EPC targets
- To what extent does the borrower consider investing in energy efficient equipment or system within the property[ies]?
- To what extent does the borrower address occupiers' energy efficiency post-completion?

The guide then goes on to consider the asset's capacity for green or sustainable lending. More detail from the guide is in Appendix I.

### 5.6.4 EBRD Green Technology Selector

A key component of dedicated credit lines for energy efficiency or sustainable energy financing facilities (SEFFs) the European Bank for Reconstruction and Development (EBRD) has launched in 30 countries, including (PolSEFF in



Poland<sup>79</sup>, WeBSEFF in the Western Balkans<sup>80</sup>, MorSEFF in Morocco<sup>81</sup>, etc.) was the List of Eligible Materials And Equipment (LEME) – a list of technologies with energy efficiency performance higher than average in the market that automatically qualify for the programme’s financing. These provide the technical eligibility criteria and energy performance requirements for types of eligible individual measures and packaged solutions: they are in the form of online searchable catalogues of pre-approved energy-efficient products; in the case of PolSEFF the LEME continues to be widely used by lenders and borrowers, with more than 70 percent of products purchased and leased under PolSEFF coming from the catalogue<sup>82</sup>.

A typical LEME lists the Best Available Technology, the objective and applications, and the minimum performance criteria/minimum requirements.

LEME’s are evolving and non-exhaustive lists which can be updated regularly, and new items can be added as manufacturers and vendors can submit products for inclusion on the list.

In 2015, the EBRD launched their harmonised Green Technology Selector<sup>83</sup> and dedicated mobile applications to provide market-relevant information about best performing technologies in 20 languages. The platform influences the decisions of businesses and households when selecting equipment and materials, through improved access to technological guidance. It supports financial institutions to deploy best performing technologies by reducing transaction costs for small-scale financing. This pre-assessment tool also facilitates matchmaking opportunities across local and global supply chains and supports EBRD trade finance activities to accelerate the deployment of technologies for the transition to low carbon and climate resilient economies.

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<sup>79</sup> Polish Sustainable Energy Financing Facility programme, <https://www.ebrd.com/news/2014/-ebrd-launches-200-million-sustainable-energy-financing-facility-in-poland.html>

<sup>80</sup> Western Balkans Sustainable Energy Financing Facility programme, <https://www.ebrd.com/news/2013/75-million-for-new-western-balkans-sustainable-energy-financing-facility.html>

<sup>81</sup> Morocco Sustainable Energy Financing Facility, <https://www.ebrd.com/work-with-us/projects/psd/morocco-seff-morseff.html>

<sup>82</sup> <https://www.dai.com/our-work/projects/poland-polish-sustainable-energy-financing-facility-polseff>

<sup>83</sup> [www.techselector.com](http://www.techselector.com)

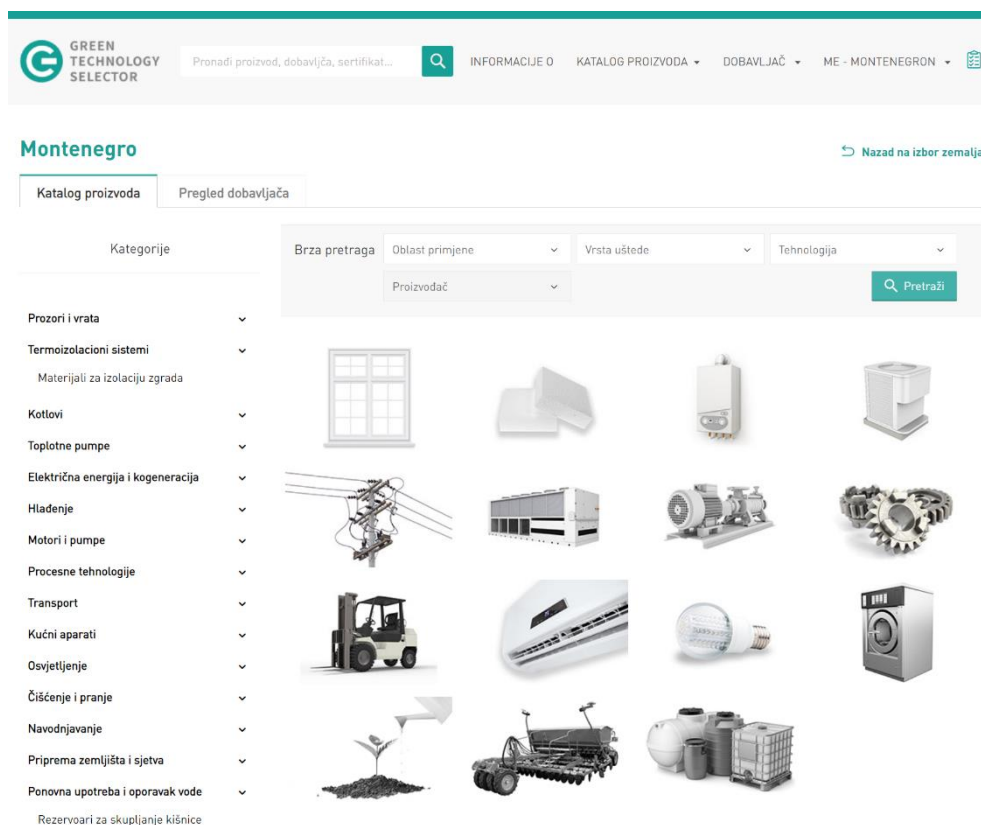


Figure 11: Screenshot of the EBRD Green Technology Selector to promote best available technologies in Montenegro

### 5.6.5 EIB's PF4EE tools: WebCheck Tool and EEQuest Tool

To support the Private Finance for Energy Efficiency (PF4EE) instrument programme by the EIB two tools have been developed to support financial intermediaries in marketing dedicated energy efficiency financing, raise awareness for the energy savings potential in different sectors, and facilitate on-lending for energy efficiency. The WebCheck Tool<sup>84</sup>, the predecessor of the Green Eligibility Checker, allows financial institutions and intermediaries to pre-check the eligibility of an energy efficiency project for PF4EE financing. The EEQuest<sup>85</sup> Tool provides users with an estimate of energy, cost and CO<sub>2</sub> savings for typical measures. EEQuest can be used to evaluate projects in the 27 countries of the EU (and the United Kingdom) and covers about 20 energy efficiency measures in buildings and industry. Both tools are co-owned by the European Commission and available free of charge and without registration.

### 5.6.6 EIB's Green Eligibility Checker

The Green Eligibility Checker<sup>86</sup> is an online tool to assess small-scale standardised projects implemented by SMEs and other eligible beneficiaries. It is primarily aimed at staff members of financial intermediaries, for example bank

<sup>84</sup> <https://pf4ee.eib.org/tools>

<sup>85</sup> [EEQuest | EEQuest \(eib.org\)](https://eequest.eib.org)

<sup>86</sup> <https://greenchecker.eib.org>

relationship managers or branch officers, who can use the Green Checker to assess green projects. 'Green' in this context is defined as 'EIB Green' which indicates alignment to EIB's climate action and environmental sustainability eligibility criteria adapted to the context of EIB's intermediated debt products. The basis for EIB Green definitions is listed in the EIB's Climate Bank Roadmap. The Green Eligibility Checker specifically contains energy efficiency measures.

### 5.6.7 EeMAP Valuation and Energy Efficiency Checklist

The EeMAP valuation checklist<sup>87</sup> is the result of in-depth consultation with valuers and mortgage lending banks from across Europe and is designed to complement existing instructions given to valuers. The checklist provides a list of property characteristics which may affect energy demand of the building such as insulation levels, heating system, structure and orientation. Although many of the indicators are already part of existing valuation instructions the difference is that using the checklist will ensure that they will be assessed specifically from an energy efficiency perspective.

### 5.6.8 Lloyds Bank sustainable finance framework for house builders

In the residential market Lloyds Bank has developed a sustainable finance framework for house builders and produced collateral to assist house builders ensure their developments meet the requirements of the framework and qualify for sustainability linked loans.

Qualifying loans are offered at a discount to normal loan margins and may also include margin premiums in the event of non-achievement of the standards. The terms of the loans are aligned with the Sustainability-Linked Loan Principles published by the LMA. The required standards all include an EPC rating of B for each individual unit and a project weighted average of 'EPC B+' or above, as well as compliance with industry standards such as recognised Green Building certifications or the Next Generation standard<sup>88</sup>. Lloyds are committed to reviewing the standards as requirements evolve.

### 5.6.9 IFC's EDGE and other building design standards

IFC's EDGE<sup>89</sup> ("Excellence in Design for Greater Efficiencies") is a free software tool to assist in the design of green buildings, as well as an international green building standard and a green building certification program. Its stated aim is that users discover technical solutions at an early design stage to reduce operational expenses and environmental impact. Based on the user's information inputs and selection of green measures, EDGE projects operational savings and reduced carbon emissions and this overall picture of performance helps to

<sup>87</sup> <https://energyefficientmortgages.eu/introducing-the-eemap-valuation-and-energy-efficiency-checklist/>

<sup>88</sup> A UK sustainability standard for house builders

<https://nextgeneration-initiative.co.uk/>

<sup>89</sup> <https://edgebuildings.com>

articulate a business case for building green. To achieve the globally defined EDGE standard, a building must demonstrate a 20% reduction in operational energy consumption, water use and embodied energy in materials as compared to typical local practices.

It should be noted that for the design of new buildings, as well as retrofits, a number of other internationally accepted standards exist including: BREEAM<sup>90</sup>; LEED<sup>91</sup>; Passivhaus<sup>92</sup>; and the Living Building Challenge<sup>93</sup>. These standards can be referenced and included in policy documents as well as operational level tools such as due diligence questionnaires. Another example of a building certification system being used as a tool by financial institutions is the Romanian Green Building Council's system which is used in its Green Mortgage programme<sup>94</sup>.

### 5.6.10 ING's Real Estate Finance (ING REF) app for commercial real estate

A notable example of a real estate lending organisation that has adopted energy efficiency first is ING REF who have an explicit policy of only lending to commercial real estate with an energy performance certificate above a set level. ING REF will only fund new buildings that achieve a 'green' level of performance and have proactively approached borrowers to promote energy efficiency upgrades. They have also developed a software app – the Energy Robot<sup>95</sup> – that compares data from a buildings smart energy meter to a benchmark for the specific building. This can identify up to 15% savings and helps developers and owners identify and evaluate energy efficiency upgrades and can provide additional finance for upgrades at a beneficial rate. The app is available to customers of ING REF.

### 5.6.11 Sustainability Guarantee Tool for EIF InvestEU

The Sustainability Guarantee Tool<sup>96</sup> is an advisory web tool, which aims to assist financial intermediaries and final recipients with the assessment of investment projects, in line with the eligibility criteria applicable under the European Investment Fund's (EIF) InvestEU Sustainability Portfolio Guarantee Product.

The tool was developed based on the Green Checker's blueprint, both web tools have been developed with the same underlying assessment methodologies and climate impact assessment models as part of the Green Gateway advisory programme funded by the European Investment Advisory Hub and there are limited differences between European Investment Bank's (EIB) green eligibility

<sup>90</sup> <https://bregroup.com/products/breem/>

<sup>91</sup> <https://www.usgbc.org/leed><https://www.usgbc.org/leed> <https://www.usgbc.org/leed>

<sup>92</sup> [https://passivehouse.com/03\\_certification/03\\_certification.htm](https://passivehouse.com/03_certification/03_certification.htm)[https://passivehouse.com/03\\_certification/03\\_certification.htm](https://passivehouse.com/03_certification/03_certification.htm)  
[https://passivehouse.com/03\\_certification/03\\_certification.htm](https://passivehouse.com/03_certification/03_certification.htm)

<sup>93</sup> <https://living-future.org/lbc/><https://living-future.org/lbc/> <https://living-future.org/lbc/>

<sup>94</sup> [http://www.rogbc.org/Downloads/Proiecte/GreenHomes/RoGBC\\_Green\\_Homes\\_and\\_Green\\_Mortgage\\_Toolkit\\_for\\_Residential\\_Investors.pdf](http://www.rogbc.org/Downloads/Proiecte/GreenHomes/RoGBC_Green_Homes_and_Green_Mortgage_Toolkit_for_Residential_Investors.pdf)

<sup>95</sup> <https://www.ing.com/Newsroom/News/R2-CO2-Robot-helps-buildings-save-energy.htm>

<sup>96</sup> <https://sustainabilityguarantee.eif.org/#avenue>

criteria and EIF InvestEU Sustainability Portfolio Guarantee Product eligibility criteria, reflecting that the Green Eligibility Checker is tailored for EIB funded operations, while the Sustainability Guarantee Tool reflects specificities of the EIF's InvestEU Sustainability Portfolio Guarantee Product. All the impact estimations are calculated with the same impact estimation calculation backend. It also targets financial institutions and their clients, for small scale projects. The main difference is it includes a lot of measures where the website merely describes the eligibility requirements, rather than assesses compliance with them.

### 5.6.12 Taxonomy Compass and other taxonomy compliance tools

The EU Taxonomy Navigator offers a series of tools to help users understand the EU Taxonomy. The Taxonomy Compass enables users to check which activities are Taxonomy eligible activities, to which objectives they substantially contribute and what criteria have to be met for activities to be considered Taxonomy aligned<sup>97</sup>.

There are also a number of proprietary, commercially available tools that offer Taxonomy compliance assessment, such as the TAXO TOOL<sup>98</sup> developed by VÖB and Dydon AG, or the Sustainable Finance Taxonomy Tool developed by PwC<sup>99</sup>. TAXO TOOL is an AI-powered solution where the aim is to map the technical evaluation criteria of the EU Taxonomy for sustainability in one system and to enable automated procedures. PwC's Sustainable Finance EU Taxonomy Tool gathers Taxonomy-eligibility and alignment data directly from counterparties and provides relevant and up-to-date requirements based on portfolio's economic activities and environmental objectives.

### 5.6.13 International Performance Measurement and Verification Protocol (IPMVP)

Savings from energy efficiency represent the absence of consumption or demand, making their measurement difficult. The IPMVP was originally developed to develop a consensus approach to measuring and verifying the performance of energy efficiency investments. IPMVP provides a framework that is used to:

- > Verify a project has the potential to perform and save energy
- > Quantify site-level energy and cost impacts from a targeted project.

Using the IPMVP's principles, framework, terms and process to determine and report verified energy savings facilitates reliable and translatable results. Its initial use case was for energy services companies and its original development

<sup>97</sup> <https://ec.europa.eu/sustainable-finance-taxonomy/home>

<sup>98</sup> [TAXO TOOL: EU Taxonomy AI Software – Dydon AI](#)

<sup>99</sup> [Sustainable Finance EU Taxonomy Tool \(pwc.nl\)](#)

supported by the US Department of Energy. The system is now globally recognised with certified IPMVP professionals in many countries and the system is maintained by a non-profit organisation, the Efficiency Valuation Organization (EVO)<sup>100</sup>.

#### 5.6.14 Investor Confidence Project (ICP)

The Investor Confidence Project (ICP), which began in the USA and was then adapted for use in Europe with the support of Horizon 2020, developed a set of protocols for developing energy efficiency projects. The ICP framework was developed in response to the need for standardisation and the observation that energy efficiency projects, even when they utilise the same technologies, are often developed in different ways by different consultants or contractors, thus increasing transaction costs as they each have to be independently verified, and increasing performance risk. Use of the ICP Protocols has been demonstrated to reduce transaction costs and reduce performance risks. The ICP developed a project certification process that is not currently in use in Europe, although it is being used in the USA and Canada, but the Protocols for project development, along with tools and templates, are publicly available for use by any project developer<sup>101</sup>.

#### 5.6.15 UNECE methodology to calculate economic viability of industrial decarbonization measures

The UNECE's Task Force on Energy Efficiency in Industry has started testing a methodology for assessing potential decarbonization measures<sup>102</sup>. The methodology consists of a dynamic Excel model that considers inputs such as energy costs, carbon prices and company priorities to calculate an array of measures to improve energy efficiency and reduce carbon footprint.

### 5.7 The importance of technical standards

As noted in Section 3.2, international standards, covering both technical and managerial systems, are a vital component of energy efficiency tools for financial institutions. At the portfolio and deal levels the tools for enabling energy efficiency first are likely to depend on, or link to specific technical standards. For example:

- > the due diligence requirements for financing a building could require an energy audit to have been carried out to the EN 16247-2<sup>103</sup> standard.
- > the reporting of energy efficiency performance should be based on the International Performance Measurement and Verification Protocol (IPMVP).

<sup>100</sup> <https://evo-world.org/en/products-services-mainmenu-en/protocols/ipmvp>

<sup>101</sup> <https://europe.eepperformance.org/protocols.html>

<sup>102</sup> <https://unece.org/climate-change/news/unece-tests-methodology-calculate-economic-viability-industrial-decarbonization>

<sup>103</sup> EN 16247 Energy audit- Part 2:Buildings

- > the development of energy efficiency projects could be based on standardised protocols such as those developed by the Investor Confidence Project.

This linkage means that financial institutions need to work with technical experts to identify appropriate technical standards and incorporate them into operational practices. There is also a need for appropriate technical input on due diligence and assessment of opportunities to ensure that they meet the relevant standards.

## 5.8 The need for sector guides to promote adoption of energy efficiency first

The tools described above are all examples of tools that are being used by financial institutions who, to a greater or lesser degree, have adopted energy efficiency first or targeted energy efficiency as an area for investment or lending. As well as these tools there is a need for tools to help the leadership of financial institutions who have not adopted energy efficiency first to do so that go beyond the guidance issued by the EC in 2021. Pressure from regulators is important to drive adoption but the majority of financial institutions also need guidance.

These could include the following, which should be sector or asset class specific:

- > A guide for financial institution boards on the energy efficiency first principle. This would cover why financial institutions should adopt energy efficiency (the why) as well as a high-level guide to how to implement it. A suggested contents list is shown in Appendix H.
- > Guidance on the links between energy efficiency levels and risks to financial institutions and how to assess risks resulting from the current level of energy efficiency across a portfolio, how to assess the potential for improved energy efficiency, as well as its potential contribution to a Paris aligned trajectory.
- > Guidance on the links between energy efficiency performance and non-financial reporting requirements such as the SFDR and TCFD as well as to the Taxonomy.

Given the differing requirements between sectors and asset classes (described in 5.3), and the benefits of co-developing the content, this guidance would probably be most effective if produced in consultation and collaboration with appropriate sector specific associations.

## 6 Recommendations for promoting energy efficiency first

In 2023, and on the basis of prior drafts of this report, the working group assessed the findings and results and proposed a number of recommendations to improve future EU policy design, assist financial institutions looking to implement energy efficiency first, and other influential stakeholders.

The following are the WG's recommendations for policy makers, for financial institutions (and financial sector associations), and other stakeholders considering the operationalisation of the energy efficiency first principle.

### 6.1 Recommendations for public policy makers

Overall, government policy and regulation is a critical driver of the market for energy efficiency as well as the specific responses of the financial sector to the need to scale up capital flows into energy efficiency. Clear and consistent public policy in support of energy efficiency helps provide the right signals to Member State governments, public funders and private sector financial institutions to create the conditions for scalable, bankable, and long-term investment opportunities. Policies and support mechanisms help mitigate and change the balance and perception of risk and reward in the case of energy efficiency projects. **However, current policies, guidance and regulations, are unlikely to ensure the fullest possible implementation of the energy efficiency first principle within the financial sector.**

A tighter dialogue between institutions and sustainable investments market players provides the dual advantages of tapping into new investment opportunities and reinforcing the alignment of the private finance to the sustainable transition objectives. Investment decisions are usually processed without specific expertise of the methods required to assess multiple benefits from energy efficiency deployment and their impact on the future asset's value. Public information and training campaigns, and partnerships in ad-hoc projects can partially address this asymmetry by exchanging the required technical knowledge. Topics for which exchanges are of paramount importance are:

- > Methodologies for cost-benefit analysis to prioritize energy efficiency interventions according to their energy saving and environmental impact;
- > Clustering techniques for aggregating small-scale energy efficiency projects based on objective (technical) parameters. These factors relate to energy performance-indicators and consistent energy demand forecast by type relevant characteristics of end-user;
- > Set-up of innovative financial instruments that allow optimal mix between private and public resources;
- > This capacity development must be supported by strategies for widening data availability. The implementation of energy efficiency solutions, in any sector, requires building scenarios upon the evaluation of direct and indirect benefits, micro and macro dimensional analysis (people behaviours, climate characteristics, etc.), different lifetime of technologies and materials.



Rigorous data-driven analysis is the key to engagement. Policy makers can promote actions to increase the access to and strengthen the quality of data, especially with boosting the interoperability and usability of different types of data sources.

One way to increase climate and energy efficiency-related engagement by financial institutions via regulations would be to mandate energy efficiency related financial disclosures through the ESRS under CSRD. EFRAG, as technical adviser to the EC, has released draft European Sustainability Reporting Standards (ESRS) including ESRS E1 Climate Change. Energy consumption and the split between renewable and non-renewable metrics are required metrics under ESRS 1 and energy efficiency is mentioned in connection to real estate categories but they could be strengthened by metrics that include for instance improvement in energy intensity.

**These climate-related financial disclosures should include explicit energy efficiency-related disclosures as a component, including the energy performance of buildings or other assets, improvements in energy intensity over time, and the requirements of corporate loans to have energy audits attached in due diligence.** Building on these disclosure requirements, end-investors (who are often different from deal originators) and others would have the information required to integrate energy efficiency in their financial decisions and reports.

Financial institutions could be required to disclose the following information in their non-financial and annual reports as a first step:

- > A description of how processes for identifying, assessing, and managing energy efficiency-related risks are integrated into the overall risk management process.
- > A description of the governance arrangements in relation to assessing and managing energy efficiency-related risks and opportunities.
- > A description of the actual and potential impacts of the principal energy efficiency risks and opportunities on the strategy and business model.
- > A description of each FI's energy savings products made available to their clients to support their energy efficiency investments.

This new energy performance disclosure regime could be phased in alongside other non-financial reporting requirements (e.g. CSRD and SFDR). The goals of mandatory energy efficiency-related disclosures would be to:

- > Help financial institutions better demonstrate corporate responsibility and foresight in their consideration of climate and energy efficiency issues.

- > Ensure that the impact of energy efficiency in reducing climate change risks is routinely considered in business, investment, lending and insurance underwriting decisions.
- > Lead to a more efficient allocation of capital, and help smooth the transition to a more sustainable, energy efficient, secure and low emissions economy.
- > Make lenders and investors a proactive part of building capacity in energy efficiency among their individual and corporate clients.

**More work should be done to understand the role of financial institutions in the transition of client companies and portfolio assets.**

Reporting frameworks need to promote active engagement and investment to improve energy performance of inefficient assets to “green them”, and not force their disposal (potentially at fire-sale prices) to unregulated or non-EU investor dark-pools. There is also a need for greater clarity in some cases. For example, there is a perception in some institutions that the SFDR does not allow for ‘brown to green’ funds which would prevent a fund designed to increase the energy efficiency of a portfolio of buildings from disclosing under Article 9 . The European Commission’s Recommendation (EU) 2023/1425 on facilitating finance for the transition to a sustainable economy<sup>104</sup> is a step forward in providing guidance for companies and the financial sector, but could not be analysed in detail as it was only published after the Working Group had completed its work.

**Most of the existing regulatory disclosure and reporting frameworks do not give weight to EE1st and brown-to-green transformational strategies.** Similarly, regulatory capital frameworks can make lending that supports such strategies unattractive by imposing higher risk weights because of the transitional or ‘value-add’ nature of the transaction. Even with minimum energy efficiency performance standards (MEPS), applicable at the building level, this weakness in disclosure and regulatory frameworks creates a mismatch between the regulatory incentives and priorities of financial institutions, and the capital actually required to decarbonise the built environment. For the EE1st principle to become mainstream, it is not sufficient for a bank to have to report its financed emissions; it should be required to report how the energy performance of the assets it finances has changed over a period, and how its strategy, policies and products have contributed to that. Such disclosures would require access to the underlying energy usage data flows from building users to be provided to building owners and their lenders. Lending to finance energy efficiency improvements should be recognised by regulatory capital frameworks as reducing climate-related obsolescence risk (as well as, or even instead of, presenting construction risk).

Meeting the EE1st challenge, and the wider climate challenge, involves a complex and iterative process in which policymakers must steer, but also listen to and learn from, industry and investors, and course-correct. CREEAs the policy and technological landscape evolves, there also needs to be room for innovation

<sup>104</sup> [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023H1425#ntr9-L\\_2023174EN.01003401-E0009](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023H1425#ntr9-L_2023174EN.01003401-E0009)

(including trial and error). Financial institutions should be encouraged to work together to develop suitable industry standards and best practice in a sandbox environment, protected from concerns that the effort to agree and promote higher standards may not be reconciled with narrowly defined fiduciary duties and competition law concerns.

In the real-estate finance sector, the EU Taxonomy provides a standard for green renovations, new constructions and acquisitions. Energy efficiency plays an important role in the assessment of the Taxonomy compliance of an investment. For financial institutions of all types the EU Taxonomy will play an increasing role in their business, especially as they will have to disclose their Green Asset Ratios starting from 2024. Thus, the recent FAQ and interpretation of the EU Taxonomy criteria given by the European Commission constitutes a guide for companies currently working on the implementation of the criteria. **However, policy makers could make the EU Taxonomy a more effective tool for pro-actively encouraging Taxonomy-aligned renovations<sup>105</sup> of the worst-performing buildings in the EU's building stock, where most progress can be achieved in terms of energy efficiency.** This could be achieved, for example, by giving extra weighting to such renovations in the asset portfolio. The EC's Recommendation on transition finance, published in June 2023<sup>106</sup> after this report was completed, may address this issue.

Often, the renovation of a building, commercial or residential, takes place as part of mortgage loan financing the acquisition of a property, where this loan also entails a part dedicated to the renovation. However, when purchasing a property, often only a small portion of the loan is allocated to renovation, especially in commercial real estate financing. And in most cases, although savings of more than 30% can be achieved, neither an EPC class A nor reaching the top 15% in terms of primary energy demand can be economically achieved after completion of major renovation works. The real estate acquisition criteria of the EU Taxonomy found in section 7.7 of Annex I to the Commission delegated regulation (EU) 2021/2139 (Acquisition and ownership of buildings) are hard to reach on a regular basis. Accordingly, large portions of many mortgages would not be available for refinancing with EU Green Bonds.

The Technical Expert Group in its Taxonomy report stated: "Certain types of financial instruments such as loans for acquisition and renovation of buildings may need to consider acquisition costs integrally with the eligible renovation costs if these costs cannot be practically separated in those types of financial instruments" (Technical Expert Group. 2020. Taxonomy report: technical annex, 367). This creates an opportunity to provide guidance for re-mortgages and

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<sup>105</sup> The Taxonomy allows capital expenditure to be Taxonomy-aligned if the Taxonomy performance levels are reached in 5 (and exceptionally 10 years).

Furthermore, the Commission recommendation on facilitating finance for the transition to a sustainable economy from June 2023 outlines ways how the Taxonomy can be used as a transition finance tool in various ways. Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023H1425>

renovations which deliver deep savings but not the criteria described in the current section 7.7 for new acquisitions.

**Finally, policy makers can encourage the drafting and dissemination of positioning guides to the energy efficiency first principle in key sectors which are targeted at financial institution boards and senior management, and which set out the benefits of adopting the principle, as well as give high-level advice on how to implement it.** As discussed in section 5.6 these should be sector and asset class specific and would best be authored and disseminated by relevant sector associations.

## 6.2 Recommendations for financial institutions

The case studies and examples described in this report show that financial institutions can play a catalytic role in improving energy efficiency within the sectors they serve but this requires adopting the energy efficiency first principle, and a more proactive approach to influencing customer behaviour than has been the norm.

**Putting energy efficiency first requires purposeful, systematic and wide-ranging action by financial institutions which needs to start with a commitment at board-level.** As outlined above, getting boards to take this decision will require more focused action by policy makers and other stakeholders including explicitly making the case for doing so (on a sector-by-sector basis), a case which will rest on several arguments including: saving costs, generating green value, addressing the climate crisis, risk reduction, and the business growth opportunity.

Once the decision to adopt the energy efficiency principle has been taken and in order to truly operationalise the energy efficiency first principle within financial institutions it is necessary to take action on the three levels described in the report, namely: policy and governance, portfolio, and deal.

**At the policy and governance level, financial institutions should:**

- > Identify the current levels of energy efficiency performance within their portfolios and target sectors, the potential for improving energy efficiency, including the likely capital requirements and impact on energy use and emissions, and the barriers to doing so.
- > Assess the risks inherent in the current levels of energy efficiency within their portfolio, including risks of non-repayment, stranded asset risk, and transition risk, and put in place mechanism to report on these risks as part of non-financial reporting.
- > Embed energy efficiency explicitly within wider sustainability policies and commitments.

- > Modify investment / lending policies to explicitly target projects / assets with a high level of energy efficiency performance, specifically better than BAU.
- > Adopt an explicit target for energy efficiency investment / lending in their portfolio and put in place mechanisms to track and report progress against the target.
- > Include energy efficiency reporting in board agendas.
- > Initiate the development, or adoption of appropriate tools at policy and governance level, portfolio level and deal level.
- > Identify the needs to build capacity amongst operational staff and any needs for external support and resource them appropriately.
- > Establish appropriate safeguards to ensure that energy efficiency policies and procedures are followed.

**At the portfolio level, financial institutions should:**

- > Develop or adopt tools to measure the energy efficiency performance of their portfolios.
- > Identify pathways to improve the energy efficiency of each asset class; and
- > Track progress over time.

These tools should link directly to risk management tools at the policy and governance level.

**At the deal level, financial institutions should:**

- > Identify and develop or adopt the most appropriate tools to help them identify and assess energy efficiency aspects of projects and assets to be financed. These tools can include:
  - > Guides for originators
  - > Due diligence check lists
  - > Questions for approval processes
  - > Mechanisms to measure and verify energy efficiency performance over time (i.e. during the asset management phase).
- > Identify and develop or adopt the most appropriate guides that could help customers develop more energy efficient projects and assets to be financed. These could include:
  - > Guides, apps and technical assistance packages.

- > Consider developing specific financial products that help increase demand for energy efficient options such as sustainability linked loans with lower interest rates tied to specific energy performance criteria.

The best served sector is real estate, which is appropriate given its visibility and relatively high proportion of energy use and emission, but many of the tools in real estate depend on EPCs as a proxy for real energy performance. One way out of today's limitation would be a Building passport which incorporates successively all data relevant to meet reporting requirements like EU-Taxonomy. The owner of the building is the owner of the data, but block chain technology ensures trustworthy information. Therefore each financial institution can rely on these data during any application of mortgage. And the lender receives during credit period any update like newly installed photovoltaics.

## 6.3 Recommendations for other stakeholders

The energy efficiency first message, and actionable advice, needs to be linked explicitly to the external processes and drivers such as TCFD and ESG frameworks developed by other stakeholders, including in the materials and compliance manuals disseminated by the various working groups for financial institutions such as GFANZ.

Currently energy efficiency is not mentioned explicitly enough in the documentation of these drivers of change of financial actors in sustainable finance and reporting. It is not sufficiently clear what exactly energy efficiency refers to, and what it means as a practical matter in the context of specific investment or lending activities (and as explained in section 1.2 above, confusion can arise in the real estate context in relation to how embodied carbon should be considered and how the concept of “stranded assets” should be understood). **This must change as financial institutions are, either by regulation or by choice, following the guidance and methodologies set out by these external organisations, and are often grouping around these practices to streamline and make more consistent their approaches.**

It is also important that there is alignment between the incentives created by disclosure frameworks, on the one hand, and the interventions that are desirable from an EE1st perspective. Those interventions do not always map clearly or correctly to those frameworks. For example, TCFD generally assumes investments in securities rather than buildings and has little to say about energy efficiency.

More specifically on EE1st, within the TCFD framework explicit mention should be made of the role of energy efficiency in the transition and its beneficial effects on financial, physical and transition climate risk reduction. It is important to emphasise that there are areas (specifically in relation to the built environment) where TCFD can be improved.

A group of real estate industry trade associations have made submissions highlighting the ways in which the real estate sector could be better served.<sup>106</sup> It's essential that the reporting framework for banks and other financial institutions is aligned and consistent with the information available from, and the impact they are able to have on, real estate investments, and that it incentivises brown-to-green strategies rather than simply rewarding low carbon investments/exposures. In most cases, the interests of EE1st will be best served by retrofitting and improving existing buildings.

<sup>106</sup> Available here: <https://hubble-live->

[assets.s3.amazonaws.com/crefc/file\\_asset/file/657/AREF\\_BPF\\_CREFCE\\_INREV\\_IPF\\_PFP\\_TGE\\_Working\\_Group\\_Submission\\_to\\_FCA\\_TCFD\\_ISSB\\_Proposals\\_ESG\\_Metrics\\_for\\_Real\\_Estate\\_21\\_December\\_2022.pdf](https://assets.s3.amazonaws.com/crefc/file_asset/file/657/AREF_BPF_CREFCE_INREV_IPF_PFP_TGE_Working_Group_Submission_to_FCA_TCFD_ISSB_Proposals_ESG_Metrics_for_Real_Estate_21_December_2022.pdf).

ESG frameworks do not generally include specific energy efficiency metrics. Metrics such as reduction in energy use (relative and absolute) would be useful indicators of action and possible drivers of investment.

If policymakers and regulators make core data and information resources accessible to financial institutions and put in place regulations (such as minimum energy performance standards) that force firms to pay attention to the data, industry associations can step up to develop market standards and promote the sharing of knowledge across their market.



## 7 Conclusions

**It is clear that having more financial institutions of all types adopt and implement the energy efficiency principle in the way that the exemplar public and private institutions have done already would have a major impact on improving levels of energy efficiency across all sectors.**

The level of adoption, and even understanding of the principle is, however, very limited outside these exemplar institutions, some of which are highlighted in this report. Even with the remarkable rise in sustainable investing in recent years, and current high energy prices and energy security concerns, viable energy efficiency opportunities are most often overlooked or neglected. Energy efficiency remains largely invisible within most investment and lending decisions that affect future energy use. Energy saving opportunities are typically not explicitly considered where they need to-be, and this leads to missed opportunities for cost-effective energy efficiency and locks in wasted energy for years, or even decades. Having more financial institutions embed the energy efficiency first principle within their policies and processes, and target energy efficiency will lead to an increased flow of capital into energy efficiency.

To address this gap, the leading EEFIG member case studies illustrate the following priorities:

1. **Financial institutions need to integrate energy efficiency into higher level, institutional sustainability and climate policies.** Energy efficiency cannot stand alone but must be integrated into broader sustainability initiatives, systems and procedure. This is about better managing financial risk (TCFD).
2. **Tools and constant support are needed** to enable staff within financial institutions to understand, identify and evaluate energy efficiency opportunities and appreciate their value proposition.
3. **Specific tools to assist customers identify and evaluate energy efficiency opportunities can steer capital deployment towards higher levels of energy efficiency.** To achieve this lenders can bundle advice and support services with the provision of finance to deliver investable pipeline.
4. **Safeguards that require energy performance considerations in due diligence and transaction origination-approval processes must ensure that energy efficiency opportunities are never missed.**
5. **Practical evidence is needed to make the case for putting energy efficiency first, when it competes with easy to install PV and larger scale supply-side projects.** When customers are proposing projects such as PV this is often an opportunity to include energy efficiency measures.

6. **Provide a consistent and comprehensive regulatory framework for MEPS at the building level through to disclosure and climate risk assessment frameworks for banks and other financial institutions that incentivise brown-to-green strategies.**
7. **Specifically in the real estate finance context, lenders can use technology and/or establish industry standards and best practices to bundle advice with finance to catalyse the adoption of EE1st upgrades across the 'long brown tail' of buildings** whose owners and occupiers may not otherwise focus on the need to decarbonise.
8. **Actual energy usage data should be more routinely available to financial institutions capable of influencing the energy efficiency of a building<sup>107</sup>**, so that EE1st interventions can be designed, delivered and subsequently monitored and validated against actual energy performance and not against imperfect proxies (including EPC ratings).

**The guidance issued by EC on the application of energy efficiency first within different sectors can be further amplified and made more operational through integration into sector tools for different classes of financing.** This is best done with specific sector guidance, (meaning in this context sectors within the financial industry), and supported by targeted technical assistance to assist financial institutions to: a) fully understand the energy efficiency first principle and its benefits at board level; and b) assist in the implementation of the principle across the institution.

**Examples of the different types of tools to assist financial institutions in adopting energy efficiency first exist and are in use in some leading institutions and in some sub-sectors, and these can be adopted or adapted to other financial institutions and sub-sectors.** The best served sector is real estate, which is appropriate given its visibility and relatively high proportion of energy use and emission, but many of the tools in real estate depend on EPCs as a proxy for real energy performance. The limitations of EPCs are well documented and financial institutions wish to move towards the use of actual energy performance data. Access to energy data is often restricted due to data privacy concerns linked to GDPR and there are clearly real issues about residential energy data which can show occupancy patterns but it is questionable whether this is truly applicable to commercial buildings. **Data privacy concerns (linked to GDPR) need to be urgently addressed through anonymization and exceptions for accredited renovation contractors to remove this oft cited barrier to progress.**

The Working Group was unable to identify tools for all sectors and there are clear gaps e.g. in SME lending, listed equity and private equity funds as well as others. **There is a need to extend energy efficiency enabling tools to these sectors to gain a fuller understanding of what further tool development work is needed.** The principles behind the tools, and what they

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<sup>107</sup> Recognising the challenges presented by GDPR and data security concerns

need to deliver, are however common across sub-sectors and so even in sectors where tools are absent or less developed, the required functionality is clear.

The route to developing new tools includes close cooperation between the financial sector, or sub-sectors, and specific technical sector experts who can advise on appropriate metrics, the potential for improved energy efficiency, the technologies required and the barriers to investment.

**The drivers that are fuelling the remarkable growth of sustainable finance, such as the common sustainability and ESG frameworks and reporting systems, typically do not give enough attention to energy efficiency.** Despite the very significant contribution energy efficiency can make to delivering emissions reduction targets, as well as to risk reduction, and increased energy resilience (at the corporate level and at national level) energy efficiency is routinely overlooked.

**The role of energy efficiency in reducing risks, including credit risk (as was addressed by the EEFIG WG on risk assessment<sup>108</sup>), climate risk and transition risk, need to be more widely recognised and disseminated, and incorporated into risk management and reporting systems.** This would accelerate if the potential role of improved energy efficiency in reducing these risks, and particularly climate risks, was specifically highlighted in risk reporting frameworks such as TCFD. This linkage can be improved through upgraded financial regulations.

Finally, financial institutions operate in a competitive environment and are driven by rewards, risks and regulations as well as market and social pressures. **The regulatory environment must be changed to further encourage adoption of the energy efficiency first principle and the positive business case for financial institutions to adopt the principle must be better articulated, disseminated and used to drive change.**

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<sup>108</sup> <https://op.europa.eu/en/publication-detail/-/publication/32387875-b94b-11ec-b6f4-01aa75ed71a1/language-en/format-PDF/source-256261518>



## Appendices

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Appendix C	Case studies on energy efficiency first within public banks (EBRD, EIB, KfW and WBG)
Appendix D	KfW note on energy efficiency activities in the context of energy efficiency first
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Appendix H	Draft contents for guidance on operationalizing energy efficiency first within financial institutions
Appendix I	Extracts from CREFC Europe due diligence questionnaire

## Appendix A EEFIG Working Group 14B members

Name	Organization	Type of organization
<b>Isidoro Tapia</b>	EIB	Public sector bank
<b>Sumeet Manchanda</b>	EBRD	Public bank
<b>Alex Hadzhiivanov</b>	EBRD	Public bank
<b>Lorenzo Pezatti</b>	EBRD	Public bank
<b>Ian Smith</b>	EBRD	Public bank
<b>Murray Birt</b>	DWS	Financial Investor
<b>Alex Betts</b>	Aquila Capital	Financial Investor
<b>Bettina Dorendorf</b>	KfW	Public bank
<b>Jasmin Cantzler</b>	KfW	Public bank
<b>Matthew Ulterino</b>	UNEP FI	Association (Finance Sector)
<b>Nicholas Stancioff</b>	Funding for Future	Financial Investor
<b>Paul Kearney</b>	Solas Capital AG	Financial Investor
<b>Ville Satka</b>	OP Financial Group	Private Sector Bank
<b>Nathalie Cliquot</b>	CINEA	EU Commission
<b>Peter Cosmetatos</b>	CREFC Europe	Association (Real Estate Finance Sector)
<b>Jonathan Maxwell</b>	SDCL	Financial Investor
<b>Peter Hobson</b>	SDCL	Financial Investor
<b>Simona Calin</b>	Ministry of Finance, Romania	Public Administration
<b>George Guran</b>	Ministry of European Funds, Romania	Public Administration

Name	Organization	Type of organization
<b>Gabriela Prata Dias</b>	Copenhagen Center on Energy Efficiency	Research Institution
<b>Fiona Riddoch</b>	Personal application. Linked organisations: Honeywell UK Pension Scheme, Coalition for Energy Savings	Financial Investor
<b>Susann Bollmann</b>	DENEFF e. V.	Association (Industrial)
<b>Adrian Joyce</b>	EuroACE - Energy Efficient Buildings	Association (Industrial)
<b>Linda Lowson</b>	GLOBAL ESG FINANCIAL REGULATORY INSTITUTE	Consultancy
<b>Ettore Piantoni</b>	CEN CENELEC SFEM & JTC14: Vice Chair SFEM (Sector Forum Energy Management, Energy Transition); Chair JTC 14 (Joint Technical Committee) "Energy management and energy efficiency, in the framework of energy transition".	Other
<b>Alessandro Fiorini</b>	ENEA	Other
<b>Raphael Prioleaud</b>	Verband deutscher Pfandbriefbanken e. V.	Association (Finance Sector)
<b>Benjamin Langer</b>	Allianz Lebensversicherungs-AG	Financial Investor
<b>Bolesław Meluch</b>	Polish Bank Association	Association (Finance Sector)
<b>Angela Sheehan</b>	Federated Hermes	Financial Investor

Name	Organization	Type of organization
<b>Richard Craddock</b>	LaSalle Investment Management	Financial Investor
<b>Yannis Konsolas</b>	Piraeus Bank	Private sector bank
<b>Kostas Pavlou</b>	Piraeus Bank	Private sector bank
<b>Alexander Piur</b>	ING REF	Real estate investor
<b>Gaston Richter</b>	ING REF	Real estate investor
<b>Veronika Jiříčková</b>	EC	
<b>Hannah Vanstone</b>	Loan Market Association	Association (Finance sector)
<b>Gemma Lawrence-Pardew</b>	Loan Market Association	Association (Finance sector)
<b>Baysa Naran</b>	Climate Policy Initiative	NGO
<b>Vincent van Bijleveld</b>	GREEN	Association (Finance Sector)
<b>Simon Whistler</b>	UNPRI	
<b>Peggy Lefort</b>	UN	
<b>David Worthington</b>	Verco	Consultant
<b>Philippe Weill</b>	Societe Generale	Bank
<b>Eduardo Brunet</b>	Greenward	Energy efficiency investor
<b>Steven Fawkes</b>	ep group	EEFIG Consortium
<b>Peter Sweatman</b>	Climate Strategy	EEFIG Consortium
<b>Leo Bedford</b>	Ep group	EEFIG Consortium
<b>Dinne S. Hansen</b>	COWI	EEFIG Consortium
<b>Mark Hafner</b>	COWI	EEFIG Consortium
<b>Gianluca Trotta</b>	COWI	EEFIG Consortium



## Appendix B 14B Real estate finance sub-group paper

### EEFIG Energy Efficiency 1<sup>st</sup> Working Group: Real Estate Finance

#### **Context and background**

Our towns and cities are made up of buildings that we use for residential or commercial purposes. These buildings account for a significant component of carbon emissions<sup>109</sup>, and thus offer obvious scope for emissions reductions. However, buildings are long-term, capital intensive assets, whose construction, management and performance are affected by, and affect, many different stakeholders. The different stages in a building's life-cycle (construction, operation, refurbishment, demolition) have quite different energy and carbon implications, raising complex questions about how to balance embodied and operating carbon.

An added complication in decision-making about buildings is the fact that the numerous and diverse group of people who own and manage them are often different from those (even more diverse and numerous) occupy and use them, with the relationship between owners and occupiers typically regulated under long-term lease contracts. The common focus of EPCs on building specification (rather than in-use performance) fails to incentivise owners and occupiers to work together to achieve better outcomes. Instead, owners and occupiers have little reason to share data, misaligned interests (with the costs and benefits unevenly distributed between them) and a contractual and legal framework that does not facilitate finding solutions.

It is common for the construction and acquisition of a building to be funded partly by secured debt, which is generally lower risk than equity capital, and comes at a lower (and capped) cost. Like commercial leases, commercial mortgage loan agreements normally regulate the lender/borrower relationship for several years. An important aspect of the real estate debt market is that a small number of lenders can reach a very large number of property-owning borrowers.

Over recent years, there has been a big increase in awareness and interest among real estate lenders regarding decarbonisation (including energy efficiency) as a key aspect of the wider ESG agenda. The lender's influence is of course limited when it comes to how buildings are developed, operated and improved: the owner of the building is in control of all that, while how the building is actually used depends on the occupiers. However, lenders account for a substantial proportion of the overall capital invested in real estate; given that climate-related obsolescence risk can affect them too, they should regard themselves (and be regarded) as key stakeholders in the decarbonisation transition. Importantly, lenders can provide a unique combination of advice and finance to the many building owners who are not experts on sustainability, acting as the catalyst for decarbonising our built environment.<sup>110</sup>

In this paper, the "Recommendations for Lenders" section sets out practical advice from sustainability leaders in the real estate lending space for strategies and transactions with a view to decarbonising buildings. The "Policy Recommendations" section suggests ways policymakers can help the market deliver energy efficiency and decarbonisation in the built environment.<sup>111</sup> It's worth emphasising the role of regulation and clarity about its future trajectory. Real estate is a long-term sector, but for most investors, lenders and assets, and in most respects, it is not so long-term that the direct physical risks of future climate change are decisive; regulation and other transitional risks matter much more.

<sup>109</sup> As noted in the opening paragraph of section 4.4 (Buildings) of the [Annex to the Commission Recommendation on Energy Efficiency First](#) (of 28 September 2021, C(2021)7014 final).

<sup>110</sup> The use of tools like [CFP Green Buildings](#) by banks in the Netherlands and, more recently, in other countries, is a good example of what is possible.

<sup>111</sup> Our focus is on the financing of buildings that are constructed, owned and operated commercially. While that includes residential property, we do not cover retail mortgages relating to home sales to the public.

## **Recommendations for Lenders**

### **1. General policy/approach**

To build a sustainable lending business focused on low carbon construction/retrofit:

- Establish a suitable standard, with appropriate benchmarks/baselines in the relevant market, measure to that standard, with appropriate third party validation.
- Focus on data collection and the systems and processes that can facilitate that in a simple and standardised way, and the assessment, analysis and reporting of data and outcomes.
- Consider real estate lending against overall ESG strategy, including net zero pathways, so as to unlock better understanding of climate risk and the ability to offer better terms for the right loans.
- Work collaboratively, through industry associations as well as with clients, professional advisers and other transaction parties and market participants, to build market recognition of and support for useful standards and practices (perhaps with an initial focus on borrowers, valuers, architects, contractors, brokers, intermediaries and advisers who are already sustainability-oriented).
- Where they are available, take advantage of special programmes offered by organisations such as the EIB or EBRD to support sustainable finance.
- Aim for a comprehensive approach to ESG that incorporates not only energy efficiency aspects of sustainability but also water and waste, circular economy, and wider considerations such as biodiversity, health and wellbeing.
- Publicise successes by promoting case studies, and where possible share data, evidence and standards in a way that allows review and adoption by others.<sup>112</sup>

### **2. Underwriting / Early Stage Decision Making**

Early consideration of the ESG risks of an asset/transaction should be a key pillar in risk evaluation and screening (alongside market risk, counterparty risk, etc.). ESG risk spans legal, regulatory and future collateral value considerations. While energy efficiency is only one aspect of ESG risk, it is an important aspect of green transition and relatively easily measured and monitored.

To filter out insufficiently sustainable transactions while also signalling interest in sustainability and energy efficiency and assessing likely attitude of borrower and relevant data availability:

- Consider rejecting an opportunity if the asset does not meet current energy efficiency requirements (where applicable), unless the borrower is seeking finance to address that problem.<sup>113</sup>

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<sup>112</sup> Competition law compliance concerns may inhibit collaboration/ sharing despite clear benefits.

<sup>113</sup> Such requirements have been a powerful influence on the market in the Netherlands and the UK.

- Consider rejecting an opportunity if the asset merely meets current legal requirements but the borrower has no credible strategy or intention for, nor interest in, improving it during the life of the loan.<sup>114</sup>
- Consider rejecting an opportunity if the borrower is unable to provide an up-to-date EPC (where one is required) and/or at least some actual energy use data (a reasonable minimum would be data relating to energy procured and controlled by the borrower).
- Consider challenging the whole life / embodied carbon behind a new, 'green'-certified building (should a pre-existing building have been refurbished rather than demolished?).<sup>115</sup>
- Ideally, do not refuse to lend against a 'brown' building if the borrower does have a credible strategy, intention or desire to improve it (brown-to-green strategies are key to decarbonisation).
- Establish at an early stage the borrower's own sustainability targets/aspirations and measurement framework (e.g. EPC upgrade, RIBA Climate Challenge targets, BREEAM, *Passivhaus*).

### 3. Commercial Terms Agreed / Financial Incentives

- Ask valuers to reflect energy performance and other ESG factors when providing their advice. This is a difficult area, however, whether in terms of market value or mortgage lending value, or for emerging concepts such as "prudently conservative" value<sup>116</sup>. The valuation profession will need more time and data to advise on the value implications of the energy efficiency of buildings.
- Consider the whole life carbon impact of proposed measures and ask about supply chains for equipment and materials.<sup>117</sup>
- Explore borrower appetite for agreeing margin ratchet (discount or increase) and other financial levers (e.g., performance-linked exit fees) to incentivise verifiable improvements to the building during the life of the loan. Is there an overlap between the level of incentive that makes economic sense for the lender and the level of incentive required to make investing in improvements attractive to the borrower? Improvements should be verified and validated through approved third party accreditation before being rewarded.
- In calculating transaction cash flows and setting financial covenants, give credit where possible for savings expected to result from energy efficiency and similar initiatives.
- Seek borrower agreement for emissions/energy related data, certifications and information to be reported, monitored and verified/audited throughout the life of the loan.<sup>118</sup>

<sup>114</sup> Legal requirements (current and expected) will likely evolve during the life of the loan, so a building that is merely compliant today may be impossible to refinance in a few years' time without significant cap ex.

<sup>115</sup> It should be for building regulations to prioritise refurbishment over demolition and new build, but until they do, such lender challenge could play a role.

<sup>116</sup> The "prudently conservative" valuation concept in Basel III finalisation (see [here](#), para 20.75) appears likely to be incorporated into the EU's CRR framework.

<sup>117</sup> This question highlights the need for an integrated approach to ESG: it is not sustainable to focus solely on energy efficiency at the expense of broader environmental, social or governance considerations.

<sup>118</sup> Ideally, such ESG-related reporting should form an element of industry standard commercial terms (rather than needing to be negotiated deal by deal) and it should cover embodied as well as operational carbon.

- Alongside actual energy data, using internationally recognised certifications and credentials can be a helpful mechanism for assessing progress during the life of a loan.
- If using special programmes offered by international financial institutions to support sustainable financing, aim to maximise the benefit passed on to borrowers.

#### 4. Credit/Investment Committee Approvals

- Sustainability / energy efficiency elements should be 'add-ons' to existing practices and processes, not a deviation from them (all the usual credit/investment considerations remain relevant).
- Sustainability / energy efficiency elements and their potential impacts on risk and returns should be clearly presented under a specific ESG risk section in the template materials for and structure of credit and investment committee proceedings.
- Consider bringing specialist sustainability expertise onto the membership of credit/investment committees so that consideration of ESG matters is appropriately informed and rigorous.
- Assess creditworthiness on a comparative basis (having regard to preferential terms for financing energy efficiency goals and terms of a regular loan)
- Consider valuation information comparing buildings with and without energy efficiency enhancements in the market (including, to the extent possible, on a forward-looking basis over the life of the loan)
- Assess the cash flow impact for the borrower of energy efficiency enhancements (lower energy consumption costs, any associated investment/financing costs)
- Assess the impact of credit risk mitigation on mortgage loans scoring systems.

#### 5. Due Diligence

Climate risk should be seen as a central element of due diligence, and third-party specialist advisers should be appointed to assess risks and opportunities for improvement.

- Consider using carbon auditors to establish baseline performance and advise on potential pathways to improved performance.
- A comprehensive list of data points, documentation and evidence should be agreed between the parties, and approved by any relevant specialist third party advisers / accreditation providers as appropriate and adequate for the proposed asset/works.
- Ask about EPC and other ratings and certifications (including operational energy certificates and third-party sustainability ratings), and whether the asset is included within the scope of a certified energy or environmental management system (**EMS**).
- Ask about extent of use of green leases.
- Ask about data availability regarding energy use by tenants/occupiers, and about the granularity of energy use data generally (e.g. sub-meters for major plant, half-hourly metering, etc.).
- Ask about any on-site renewables or low carbon technology.

- Ask about emissions, energy, climate and ESG policies, commitments and strategy, including use of [CRREM](#) pathways, participation in [GRESB](#), etc.
- Explore, confirm and validate all sustainability related factors that affect building performance, borrower strategy, deliverability of objectives, availability of relevant data, etc.

## 6. Transaction Documentation

- Ensure the documentation contains everything required to reflect agreements reached (data reporting, representations and covenants relating to borrower actions, outcomes to be achieved, etc., including certifications, calculations and timeframes for meeting, and confirming satisfaction of, agreed sustainability / energy efficiency objectives).
- Use loan documentation to seek maximum transparency in the provision of energy performance data via reporting obligations, encouraging the borrower to capture and monitor such data, including from occupiers to the degree possible.
- Consider seeking borrower commitment to a 'charter' of agreed behaviours and practices to drive improving sustainability (via energy efficiency, but also ESG and business culture more broadly).

## 7. Monitoring / Asset Management

- Use all the rights embedded in the documentation to monitor performance, achievements, strategy execution, etc. – ongoing monitoring and scoring of sustainability-related progress should be undertaken (as would be normal for a regular construction project).
- Comprehensive and regular information about actual energy use should be a monitored goal, if not immediately achievable, with available data collected and reviewed. Where actual data is limited, consider carbon re-auditing to help identify opportunities for energy efficiency improvements.
- Consider embodied carbon and circular economy readiness, as well as operating carbon impact, in the context of development, refurbishment and retrofit interventions.
- Seek and use opportunities to collect feedback from the borrower and other transaction parties (including occupiers, if possible) to identify potential learnings for the future.
- Consider preparing and tracking performance against KPIs for the mortgage portfolio and (home) renovation loans by reference to EPC ratings.<sup>119</sup>
- Consider using a smart tool like [CFP Green Buildings](#) to identify, recommend and finance potential retrofit interventions that should reduce energy use and improve the building's sustainability on a cost effective basis (this can be used in addition to whatever is agreed in loan documentation).
- Monitor the evolving regulatory environment and market sentiment, as these are dynamic risk factors that may affect asset value and stranding risk during the life of a loan and for refinancing.

<sup>119</sup> This suggestion links to the EBA's advice to the Commission on KPIs and disclosure methodology for credit institutions and investment firms under the NFRD, which we understand included the recommendation that such exposures can be assessed according to the Taxonomy Regulation based on the energy performance of the underlying asset. We do not comment on the merits of that recommendation.

## 8. Refinancing / Exit

- 1 To the extent the nature of the transaction allows, collect information regarding premiums that purchasers / tenants are willing to pay for assets with stronger sustainability / energy efficiency characteristics, as this can form an important part of the evidence base for future transactions.<sup>120</sup>
- 2 Historically, it has been common for real estate investors to under-invest in the maintenance and upkeep of their assets (which by their nature depreciate over time). Transitional climate risk materially increases the risks associated with such under-investment. Lenders should be prepared for the possibility that a building that seemed fine when a loan was made requires significant cap ex to meet now current market expectations or regulatory requirements – the lender may need to partner with the borrower in a way that does not come naturally, to protect its own position.

### **Policy Recommendations**

- Improve data availability regarding energy use by requiring building occupiers to share data with building owners/managers in accessible formats – that way, building owners and their lenders can make decisions (as well as making their own disclosures) based on actual data rather than on proxy, modelled or estimated data. Whether in conjunction with such a measure or not, it would also be helpful if building owners/managers were required to capture and record energy performance data (for common parts, for which they are responsible, plus for areas for which occupiers are responsible to the extent available), so that it might be shared with lenders.
- Improve data availability and market incentives by promoting public performance-based ratings of buildings (the Australian [NABERS](#) scheme, now being rolled out [in the UK](#), is a good example), as well as emerging industry standards for assessing climate risk (e.g. [CRREM](#)).
- EPC data should be routinely publicly accessible in a useful format, allowing aggregation, analysis and tracking of changes over time. Capturing the cost and impact of specific retrofit interventions and equipment in a publicly accessible database could be especially valuable in driving broader awareness and adoption of measures to promote energy efficiency.
- Ensure that legislation, regulation and disclosure frameworks affecting banks, fund managers and others, positively incentivise brown-to-green transition (including through energy efficiency improvements). This is a relatively risky form of investment/lending, so if firms do not feel encouraged to engage in it by their regulators, many may opt to deploy their capital elsewhere.
- Competition law should not stand as a barrier to cooperation among competitors to drive the adoption of market standards for sustainable investment and finance.<sup>121</sup>
- A higher price for carbon and/or reduced scope for use of carbon offsets would help focus attention on reducing demand and improving efficiency, thus bringing actual emissions down.

<sup>120</sup> That evidence base may be further enhanced by data showing negative impact on sale prices or rent levels where assets are perceived to fall short of desirable sustainability / energy efficiency standards.

<sup>121</sup> See for example [this recent story](#) in the Financial Times; we note the encouraging reactions reported [here](#).

- Raise the bar through regulation, making the simplest sustainability and energy efficiency improvements standard, and taking account of circular economy considerations and whole life carbon (rather than focusing solely on operating carbon).
- Ultimately, policymakers may need to be prepared to explore how public schemes/funds might most appropriately and efficiently be used to support the improvement of buildings that cannot cost-effectively be retrofitted to a zero or low carbon status. However, this should be a last resort – the primary focus should be on promoting market acceptance and adoption of data, measurement and performance standards, supported by regulatory clarity.

## Appendix C Case studies on energy efficiency first (EBRD, EIB, World Bank Group)

### European Bank for Reconstruction and Development (EBRD) and Energy Efficiency: State of play

Documents reviewed:

1. EBRD, 2020. Green Economy Transition Approach 2021-2025.  
<https://www.ebrd.com/documents/comms-and-bis/get-20212025.pdf?blobnocache=true>
2. EBRD, 2019. Environmental and Social Policy.  
<https://www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html>
3. EBRD, 2022. Focus on Environment.  
<https://www.ebrd.com/focus-on-environment.pdf>
4. EBRD, 2018. Implementing the EBRD Green Economy Transition.  
<https://www.ebrd.com/documents/climate-finance/implementing-the-ebrd-green-economy-transition.pdf>
5. EBRD 2020. Strategic and Capital Framework  
<https://www.ebrd.com/what-we-do/strategies-and-policies/strategic-and-capital-framework-2021-2025.pdf>
6. EBRD, 2020. Financial Sector Strategy 2021-2025  
<https://www.ebrd.com/news/2021/ebrd-approves-financial-sector-strategy.html>

### Summary

The key role of energy efficiency in reducing energy intensity in different sectors is emphasised in most EBRD documents. Energy efficiency is also recognised as a cross-cutting theme relevant to most thematic areas. Moreover, the recently released Focus on Environment document (EBRD, 2022) describes the three types of bonds issued by the EBRD. Two of them have a clear focus on energy efficiency. However, there is no mention of energy efficiency under the Environmental and Social Policy document (EBRD, 2019). Finally, none of the documents reviewed explicitly mention or refer to “energy efficiency first-principle.”

Strategy level
<ul style="list-style-type: none"> <li>- The EBRD launched the Green Economy Transition (GET) approach in 2015 to put investments that bring environmental benefits at the heart of its mandate. The GET approach aimed to increase green financing to approximately 40% of total EBRD financing by 2020.</li> <li>- The new Green Economy Transition (GET) 2021-25 sets a green financing target of more than 50% by 2025.</li> <li>- EBRD is committed to promoting “environmentally sound and sustainable development” in the full range of its investment and technical cooperation activities. In doing so, EBRD has adopted a set of specific Performance Requirements (PRs) for key environmental and social sustainability areas that projects are required to meet. However, energy efficiency is not one of the key areas under the Environmental and Social Policy document (EBRD, 2019).</li> </ul>
Sector level
<ul style="list-style-type: none"> <li>- The main sector/sub-categories considered with respect to energy efficiency projects are as follows: (i) industry in existing facilities; (ii) existing commercial, public and</li> </ul>



<p>residential buildings; (iii) utility sector and public services; (iv) vehicle fleet; (v) new commercial, public, and residential buildings; (vi) energy audits.</p> <ul style="list-style-type: none"> <li>- Energy efficiency is considered as a cross-cutting theme with relevance across most thematic areas/sectors.</li> </ul>
<b>Portfolio level</b>
<p>Bonds issued by the EBRD:</p> <ul style="list-style-type: none"> <li>- Environmental Sustainability Bonds (ESBs). Support energy efficiency projects.</li> <li>- Climate Resilience Bonds (CRBs). Projects other than energy efficiency.</li> <li>- Green Transition Bonds (GTB). Support energy efficiency projects.</li> </ul>
<b>Project level</b>
<ul style="list-style-type: none"> <li>- From 2016 to 2019, “energy efficiency projects” accounted for 29% of the GET activities</li> <li>- All projects undergo environmental and social appraisal both to help EBRD decide if the project should be financed and, if so, how environmental and social risks and impacts should be addressed in planning, implementing, and operating a project. The exact scope of the appraisal is determined on a case-by-case basis.</li> <li>- EBRD lists the type of activities not eligible for funding. Moreover, projects are categorized according to the nature and significance of any actual or potential environmental or social impacts. Category “A” projects are associated with high potential risks; category “B” projects are associated with fewer risks, and so on.</li> <li>- EBRD also distinguishes between brownfield and energy efficiency, greenfield and energy efficiency, capacity extension and energy efficiency, and resource efficiency and energy efficiency projects.</li> </ul>

Strategy (S), Sector (SE), Portfolio (PO), Project (P) level	Document	Key findings
S	EBRD, 2020. Green Economy Transition Approach 2021-2025	<p>The new Green Economy Transition (GET) 2021-25 sets a green financing target of more than 50% by 2025 – GET 2.1.</p> <p>The EBRD supported the development of national energy efficiency action plans and national renewable energy action plans in Albania, Georgia, Kazakhstan, Turkey, and Uzbekistan.</p>
S	EBRD, 2019. Environmental and Social Policy	<p>EBRD is committed to promoting “environmentally sound and sustainable development.” EBRD has adopted a set of specific Performance Requirements (PRs) for key environmental and social sustainability areas that projects are required to meet. Energy efficiency is not one of the key areas.</p>
SE	EBRD, 2018. Implementing the EBRD Green Economy Transition	<p>The main sub-categories/sectors considered with respect to energy efficiency projects are as follows:</p> <p>(i) industry in existing facilities; (ii) existing commercial, public and residential buildings; (iii) utility sector and public services; (iv) vehicle fleet; (v) new commercial, public, and residential buildings; (vi) energy audits.</p>

PO	EBRD, 2022. Focus on Environment	<p>The document <b>Focus on Environment (EBRD, 2022)</b> describes the different types of bonds issued by the EBRD. These include:</p> <ul style="list-style-type: none"> <li>- Environmental Sustainability Bonds (ESBs).</li> <li>- Climate Resilience Bonds (CRBs).</li> <li>- Green Transition Bonds (GTB)</li> </ul> <p>The Environmental Sustainability Bonds and the Green Transition Bonds have a clear focus on energy efficiency projects.</p>
P	EBRD, 2019. Environmental and Social Policy	<p>All projects undergo environmental and social appraisal to help EBRD decide if the project should be financed and, if so, how environmental and social risks and impacts should be addressed in planning, implementing, and operating a project. The exact scope of the appraisal is determined on a case-by-case basis.</p> <ul style="list-style-type: none"> <li>- <b>Annex 1</b> lists the types of activities that EBRD does not finance (e.g., upstream oil exploration).</li> <li>- <b>Appendix 2</b> lists the “category A projects” that could result in potentially significant environmental and/or social impacts.</li> </ul> <p>No explicit mention of energy efficiency.</p>
P	EBRD, 2018. Implementing the EBRD Green Economy Transition	<p><b>Annex 5.</b> EBRD also distinguishes between brownfield and energy efficiency, greenfield and energy efficiency, capacity extension and energy efficiency, and resource efficiency and energy efficiency projects.</p>

## 1. STRATEGY LEVEL

EBRD published its third annual report (<https://www.ebrd.com/tcf-report-2021.pdf>) based on the voluntary reporting framework of the Task Force on Climate-Related Financial Disclosures (TCFD). **Page 12 of the TCFD report “Chapter 3.1 Overview of the EBRD’s climate related strategies”** lists the Bank’s strategies relevant to climate considerations, including:

- The **Strategic and Capital Framework** is the EBRD’s primary planning instrument, approved every five years by the Board of Governors. At the EBRD’s 2020 Annual Meeting, the EBRD’s shareholders unanimously approved the SCF 2021-25, which includes supporting the transition to a green, low-carbon economy as one of its three strategic themes.
- The GET Approach
- Paris Agreement alignment
- Country Strategies
- Industry Sector Strategies including the **Financial Sector Strategy 2021-2025**, which prioritises:
  - i. **Developing financial sector partnerships to drive the transition to green, low-carbon economies.** Scaling up green financing is a central objective, aiming to support the sector’s resilience, governance and inclusiveness, to achieve impact at two levels: – For sub-borrowers: helping increase efficiency, through a broader, evolving product range to enhance green financing, especially for underserved segments. – For partner banks: scaling up institution building to drive change at the systemic level. FIs in the EBRD region will need to improve their climate risk management, governance and disclosures, and align their operations with the objectives of the Paris Agreement.

- ii. **Boosting inclusive economic development to drive equality of opportunity through the financial sector.** By promoting a level playing field, investments will help support the economic inclusion of SMEs, micro-enterprises, women and youth and regional integration.
- iii. **Strengthening the financial sector's readiness to respond to challenges by 'future-proofing' it.** It is essential for the Bank to continue to provide capital, support privatisations and encourage capital market development, all while adding a strong digitalisation push, both with existing clients and with new fintech market participants.

The EBRD launched the Green Economy Transition (GET) approach in 2015 to put investments that bring environmental benefits at the heart of its mandate. The GET approach aimed to increase green financing to approximately 40% of total EBRD financing by 2020. From 2016 to 2019, "energy efficiency projects" accounted for 29% of the GET activities, followed by municipal and environmental infrastructure projects (22%), Green Economy Financing Facilities through financial institutions (18%), renewable energy (17%), and cleaner energy production (13%).

The new Green Economy Transition (GET) 2021-25 sets a green financing target of more than 50% by 2025 – GET 2.1 (**EBRD, 2020. Green Economy Transition Approach 2021-2025**). Although there is no explicit mention of the "energy efficiency first" principle, the document emphasizes the important role of energy efficiency in achieving international climate targets. Energy efficiency is one of the main thematic/focus areas of the EBRD. **Energy efficiency** is also considered as a **cross-cutting theme** with relevance across most thematic areas (e.g., green buildings, cities, and environmental systems, green financial systems, etc.). The following **potentials of energy efficiency** are emphasized: **primary energy intensity per unit of GDP reduction, energy dependence reduction, long-term buildings renovation strategies, low-carbon pathways for hard-to-abate sectors such as cement and steel, and tools for mobility.**

The **Green Economy Transition Approach 2021-2025** (EBRD, 2020) describes the availability of **external funds** and **partnerships** supporting energy efficiency projects such as Eastern Europe Energy Efficiency and Environment Partnership (E5P) and the Western Balkans Regional Energy Efficiency Programme (REEP). In addition, to provide funding, the EBRD supported the development of national energy efficiency action plans and national renewable energy action plans in Albania, Georgia, Kazakhstan, Turkey, and Uzbekistan.

The Environmental and Social Policy is one of the Bank's three good governance policies and a document that guides the EBRD's commitment to promoting "environmentally sound and sustainable development" in the full range of its investment and technical cooperation activities (**EBRD, 2019. Environmental and Social Policy**). The document describes the EBRD commitments and project requirements should meet to be eligible for fundings. EBRD has adopted a set of specific Performance Requirements (PRs) for key environmental and social sustainability areas that projects are required to meet. The PRs are as follows: PR 1 Assessment and Management of Environmental and Social Risks and Impacts; PR 2 Labour and Working Conditions; PR 3 Resource Efficiency and Pollution Prevention and Control; PR 4 Health, Safety, and Security; PR 5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; PR 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources; PR 7 Indigenous Peoples; PR 8 Cultural Heritage; PR 9 Financial Intermediaries; PR 10 Information Disclosure and Stakeholder Engagement. The document provides a good level of detail of information at the PR level (e.g., objective, scope, requirements, security, etc.). However, energy efficiency is not one of the key areas. Moreover, there is **no mention of "energy efficiency" in the entire document, let alone "energy efficiency first."**

## 2. SECTOR LEVEL

Energy efficiency is one of the main categories of potential projects recognized by the EBRD (**EBRD, 2018. Implementing the EBRD Green Economy Transition**). For each activity that qualifies for GET, the physical environmental benefits are estimated. Energy efficiency project

impacts are calculated on the basis of the annual primary energy savings, whereas primary energy use per activity data is used to compare different projects. **The main sub-categories/sectors considered with respect to energy efficiency projects are as follows: (i) industry in existing facilities; (ii) existing commercial, public and residential buildings; (iii) utility sector and public services; (iv) vehicle fleet; (v) new commercial, public, and residential buildings; (vi) energy audits.**

### 3. PORTFOLIO LEVEL

The document **Focus on Environment (EBRD, 2022)** describes the EBRD's different types of financial bonds. These include:

- **Environmental Sustainability Bonds (ESBs).** The proceeds of ESBs are specifically earmarked to support the Green Project Portfolio ("GPP")<sup>122</sup>, comprising investments in **energy efficiency**, among others. ESBs finance specific projects that target substantial cost-effective improvements in energy efficiency and the expansion of renewable energy production as well as the provision of credit lines to local financial institutions. These facilities promote energy efficiency and small-scale renewable energy to SMEs, corporate and residential borrowers, and renewable energy project developers. GPP selection criteria based on: Threshold of at least 90% of the funding needs to be directed to environmental goals. Exclusion criteria: fossil fuel production, projects funded via equity and credit impaired projects. The GPP criteria are reviewed on a regular basis. EBRD provides up-to-date reporting on the GPP about the use of proceeds (e.g., time period, geographical coverage) and impact reporting (e.g., GHG savings). EBRD reports on the expected environmental impacts based on the relevant committed amounts of energy efficiency projects.
- **Climate Resilience Bonds (CRBs).** The proceeds of CRBs are specifically earmarked to support the Climate Resilience Portfolio ("CRPP"), comprising investments in: (i) Climate Resilient Infrastructure; (ii) Climate Resilient Business & Commercial Operations; (iii) Climate Resilient Agriculture & Ecological Systems. The focus of CRBs is not on energy efficiency but rather on i) increased water availability in water-stressed regions; ii) increased energy availability despite growing climatic variability; iii) increased agriculture in the face of extreme and unpredictable weather patterns; iv) improved human health and productivity despite climate variability; v) reduced weather-related disruption; and vi) reduced weather-related damage.
- **Green Transition Bonds (GTB).** It finances investments in key sectors of the economy that today are highly dependent on the use of fossil fuels. The proceeds of GTBs are specifically earmarked to support the Green Transition Portfolio ("GTPP"), comprising investments in: (i) **energy efficiency**; (ii) resource efficiency including the circular economy; and (iii) sustainable infrastructure (including low carbon transport and green logistics). GTPP selection criteria based on: decarbonisation and resource efficiency in key sectors of the economy that contribute to or enable green transition. Exclusion criteria: fossil fuel production, projects signed before 2016. The GTPP criteria are reviewed on a regular basis. EBRD provides up to date reporting on the GTPP about the use of proceeds (e.g., time period, geographical coverage) and impact reporting (e.g., GHG savings). EBRD reports on the expected environmental impacts based on the relevant committed amounts of energy efficiency projects.

The "Focus on Environment" document concludes by providing case studies (Annex A) and a description of the use of proceeds bond documentation and SDG mapping (Annex B).

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<sup>122</sup> "Green Project Portfolio" shall mean, as determined by the Issuer, the sum of all loans and investments that are funded, in whole or in part, by the Issuer and in respect of which the entire or substantially the entire amount disbursed or invested is directed at, as determined by the Issuer, any of the following areas: energy efficiency, renewable energy, water management, waste management, air pollution prevention and sustainable transport (EBRD, 2022. Focus on Environment).

#### 4. PROJECT LEVEL

**All projects undergo environmental and social appraisal** both to help EBRD decide if the project should be financed and, if so, the way in which environmental and social risks and impacts should be addressed in planning, implementing and operating a project. "Whilst the exact scope of the appraisal will be determined on a case-by case basis, it will be appropriate to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts." The appraisal will assess the environmental and social risks and impacts of the project and the capacity and commitment of the client to implement the project in accordance with the relevant PRs (**EBRD, 2019. Environmental and Social Policy**).

**Annex 1** lists the types of activities that EBRD does not finance (e.g., upstream oil exploration) (**EBRD, 2019. Environmental and Social Policy**).

**Appendix 2** lists the "category A projects" that could result in potentially significant environmental and/or social impacts that are additional and new and therefore require an environmental and social impact assessment. The categorisation of each project will depend on the nature and significance of any actual or potential environmental or social impacts that are additional and new, as determined by the specifics of nature, location, sensitivity and scale of the project (e.g., crude oil refineries, large-scale sea ports) (**EBRD, 2019. Environmental and Social Policy**).

**Annex 5** of the **Implementing the EBRD Green Economy Transition (EBRD, 2018)** provides guidance on the specific project categories. In order to qualify **brownfield** energy efficiency projects for GET, old technologies must be replaced with substantially more efficient new technologies. For **greenfield** energy-efficiency projects installation qualifying for GET include: new co-generation plants, energy efficiency activities in urban transport projects, production of components, equipment and infrastructure dedicated to energy efficiency and/or GHG reduction. In cases where energy efficiency investments result in an **extension of the capacity** of the existing installation, the existing capacity is treated as brownfield and the additional capacity as greenfield. The GET finance will be attributed pro-rata. Projects that **reduce the use of resources** other than energy, for example, activities in water and materials efficiency, can also have significant climate mitigation impacts.

Moreover, the EBRD recognizes that for GET qualification, several benefits might not be within the physical boundaries of the project and might also occur elsewhere in the product life cycle. Finally, consideration to energy efficiency improvements is also given to the buildings, transport, and desalination projects areas (**EBRD, 2018. Implementing the EBRD Green Economy Transition – Annex 5**).

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#### European Investment Bank and Energy Efficiency: State of play

Documents reviewed:

1. EIB Energy Overview 2021.  
[https://www.eib.org/attachments/thematic/energy\\_overview\\_2021\\_en.pdf](https://www.eib.org/attachments/thematic/energy_overview_2021_en.pdf)
2. EIB Energy lending policy, 2019 - Under review  
[https://www.eib.org/attachments/strategies/eib\\_energy\\_lending\\_policy\\_en.pdf](https://www.eib.org/attachments/strategies/eib_energy_lending_policy_en.pdf)
3. EIB Group Environmental and Social Policy, 2022.  
[https://www.eib.org/attachments/publications/eib\\_group\\_environmental\\_and\\_social\\_policy\\_en.pdf](https://www.eib.org/attachments/publications/eib_group_environmental_and_social_policy_en.pdf)
4. EIB Group Climate Bank Roadmap 2021-2025, 2020.  
[https://www.eib.org/attachments/thematic/eib\\_group\\_climate\\_bank\\_roadmap\\_en.pdf](https://www.eib.org/attachments/thematic/eib_group_climate_bank_roadmap_en.pdf)
5. Environmental and Social Standards, 2022.  
[https://www.eib.org/attachments/publications/eib\\_environmental\\_and\\_social\\_standards\\_en.pdf](https://www.eib.org/attachments/publications/eib_environmental_and_social_standards_en.pdf)

6. EIB Guide to Economic Appraisal (2013 – under review, and draft version 2021)  
[https://www.eib.org/attachments/thematic/economic\\_appraisal\\_of\\_investment\\_projects\\_en.pdf](https://www.eib.org/attachments/thematic/economic_appraisal_of_investment_projects_en.pdf)

## Summary

The EIB explicitly refers to “energy efficiency first” in several documents, namely the EIB Energy lending policy (2019 – currently under review), the EIB Group Environmental and Social Policy (2022) and the revised EIB Guide to Economic Appraisal. Among those reviewed, the EIB Energy lending policy and the EIB Guide to Economic appraisal are the most relevant documents. The other documents refer to “energy efficiency” in the broader sense. Under the EIB Guide to Economic Appraisal (2013 – under review, draft version 2021 consulted) there is an explicit reference to the energy efficiency first principle at the project level. In addition, the multiple benefits of energy efficiency are recognized, and a case study presents the methodology to quantify them at project level.

<b>Strategy level</b>
<ul style="list-style-type: none"> <li>- By 2025, the level of support to climate action and environmental sustainability will be increased by 50%.</li> <li>- By 2020, all financing activities aligned with the Paris Agreement.</li> <li>- Investment in energy efficiency must double in volume during the coming decade. The EIB will consider financing up to 75% of eligible capital expenditures of a project.</li> <li>- The EIB Group, as the EU climate bank, will align its tracking methodology for climate action and environmental sustainability (“green”) finance with the framework defined by the EU Taxonomy Regulation, as this develops over time.</li> </ul>
<b>Sector/Portfolio level</b>
<p>Annex I of EIB's Energy lending policy (2019 - under review):</p> <ol style="list-style-type: none"> <li>1. Buildings</li> <li>2. Industry and SMEs</li> <li>3. Public lighting</li> <li>4. Cogeneration</li> </ol> <p>Annex 2 of EIB Group Climate Bank Roadmap 2021-2025 (mainly Table A “Energy” and table D “Buildings”):</p> <p>Supported and non-supported energy-related areas (e.g., energy efficiency of industrial facilities, coal mining, respectively)</p> <p>Annex 4 “Alignment with the EU Taxonomy” of EIB Group Climate Bank Roadmap 2021-2025:</p> <ul style="list-style-type: none"> <li>- Major buildings renovation – Energy Performance Building Directive</li> <li>- Individual building renovation – Energy Performance Building Directive</li> </ul>
<b>Project level</b>

EIB Guide to Economic Appraisal (2013 – under review, draft version 2021)

With regard to the technical and economic appraisal of the projects, there is an explicit reference to “energy efficiency first.” The economic profitability analysis of the energy efficiency (and district heating) projects is based on a cost-benefit analysis. On the cost side, the key challenge is to separate the energy efficiency component from the overall capital investment. On the benefit side, the economic value of energy (including externalities) is accounted for based on expected annual savings in electricity and heat as compared to the baseline scenario. The challenge is how to account for other benefits. Since 2017, the Bank has incorporated in the CBA methodology the multiple benefits generated by energy efficiency projects, as now requested by the EU Energy Efficiency Directive. The methodology used by the EIB includes multiple benefits as the extension of the economic life of the assets and the reduction of operation and maintenance costs, and on a case-by-case basis other benefits, when the available information is reliable and sufficient to produce robust estimates.

Strategy (S) or Sector/Portfolio (SP) level	Document	Key findings
S + SP	EIB's Energy lending policy, 2019 - Under review	The Bank recognises that the “energy efficiency first” principle applies across all energy investment activities. The EIB's Energy lending policy includes several annexes providing further details on the EIB's energy lending policy (eligibility criteria and technical and economic assessment criteria). Annex I of EIB's Energy lending policy (2019) covers energy efficiency in buildings, industry and SMEs, public lighting, cogeneration
S + SP	EIB Group Climate Bank Roadmap 2021-2025, 2020	Energy efficiency is explicitly mentioned in four out of twelve focus areas: “Focus 2: Making homes energy-efficient”, “Focus 3: Promoting clean energy”, “Focus 5: Striving for greener industry” and “Focus 11: Leading the green change globally.” The EIB Group, as the EU climate bank, will align its tracking methodology for climate action and environmental sustainability (“green”) finance with the framework defined by the EU Taxonomy Regulation, as this develops over time. At the level of a project, risk assessment is based on the Paris alignment framework underpinned by climate-related due diligence. At the level of counterparties, climate risk screening tools have been developed for each of the EIB's main credit segments to assess climate risk, and for the EIF's equity portfolio
(SP)	EIB Environmental and Social Standards, 2022	The project promoter shall demonstrate, on request, that due consideration has been given to alternatives to minimise project-related GHG emissions. These measures may include, but are not limited to: the use of best available techniques (BAT) and/or any emerging



		techniques, energy efficiency, resource efficiency, adoption of less carbon-intensive or renewable energy sources, or the reduction of fugitive emissions
S	EIB's Energy Overview 2021	Given the pressing need to accelerate market uptake for energy efficiency measures, the EIB will consider financing up to 75% of a project's costs.
S	EIB Group Environmental and Social Policy, 2022	The Group will seek to stimulate investment to meet the temperature goal of the Paris Agreement. Within the EU, this amounts to reaching net-zero greenhouse gas emissions (GHG) by 2050. This requires increased investment in energy efficiency, in line with the energy efficiency first principle.

## 1. STRATEGY LEVEL

The EIB will increase its level of support to climate action and environmental sustainability to exceed 50% of its overall lending activity by 2025 and beyond, and thus help to leverage €1 trillion of investment by the EIB Group over the critical decade ahead. Moreover, the EIB aims at ensuring that “all financing activities are aligned to the goals and principles of the Paris Agreement by the end of 2020.” (**EIB Group Climate Bank Roadmap 2021-2025, 2020**). This requires increased investment in energy efficiency, in line with the energy efficiency first principle (**EIB Group Environmental and Social Policy, 2022**). Investment in energy efficiency, especially in residential buildings, must double in volume during the coming decade; a persistent investment gap remains. Given the pressing need to accelerate market uptake for energy efficiency measures, the *EIB will consider financing up to 75% of eligible capital expenditures of a project*. In cooperation with the European Commission, the EIB will set up a European Initiative for Building Renovation (EIB-R) to support new ways of financing building rehabilitation. (**EIB Energy Overview 2021; EIB Energy lending policy, 2019**).

The EIB has scaled-up its financing of EE projects in recent years. EIB overall financing of energy efficiency projects increased from around EUR 1.1bn in 2012 to 5.8bn in 2020. Energy efficiency is now the largest energy subsector and one of the main largest contributors to the EIB Climate Action financing.

The three major areas on which the Bank will focus in the years ahead: an initiative to increase the renovation rates of buildings; support for high levels of energy performance in new *buildings*; and the increase of energy efficiency investment by *SMEs and industry* more broadly (**EIB lending energy policy, 2019**).

The EIB Group support for climate action and environmental sustainability outlines the climate goals of the EIB in supporting the European Green Deal. The Roadmap identifies 12 focus areas for EIB finance. Energy efficiency is explicitly mentioned in four focus areas: “Focus 2: Making homes energy-efficient”, “Focus 3: Promoting clean energy”, “Focus 5: Striving for greener industry” and “Focus 11: Leading the green change globally”. (**EIB Group Climate Bank Roadmap 2021-2025, 2020**).

The EIB Group, as the EU climate bank, will align its tracking methodology for climate action and environmental sustainability (“green”) finance with the framework defined by the EU Taxonomy Regulation, as this develops over time (**EIB Group Climate Bank Roadmap 2021-2025, 2020**).

## 2. SECTOR/PORTFOLIO LEVEL – SAFEGUARD



A core component of the **energy lending policy (2019)** is that the Bank recognises that the “energy efficiency first” principle applies across all energy investment activities. This refers to the need “to consider, before taking energy...investment decisions, whether cost-efficient, technically, economically and environmentally sound alternative energy efficiency measures could replace in whole or in part the envisaged...investment measures”. For the Bank, this translates in practice into a requirement to consider the impacts of energy efficiency on future energy demand, when assessing the economic case for energy investments. In this sense, this principle applies to the entire energy lending policy. The Bank supports energy projects that contribute to Sustainable Development Goal 7. The EIB's Energy lending policy includes several annexes providing further details on the EIB's energy lending policy (eligibility criteria and technical and economic assessment criteria).

**Annex 1 of EIB's Energy lending policy (2019)** covers energy efficiency in buildings, industry and SMEs, public lighting, cogeneration. It does not cover energy efficiency in transport. It sets out the eligible type of projects; what kind of projects have a high alignment with EIB lending policy and technical and economic assessment criteria. To be eligible on energy efficiency grounds, a project needs to demonstrate credible energy savings compared to a baseline.

**Annex 2** (Paris alignment framework – low carbon) of the **EIB Group Climate Bank Roadmap 2021-2025** describes the activities that the EIB Group will support and those that it will not support any longer. Table A (page 88) reports the supported and non-supported activities for the energy sector (**EIB Group Climate Bank Roadmap 2021-2025, 2020**). For example, coal mining and oil extraction are activities that are not supported; energy efficiency of industrial facilities and SMEs, if primarily motivated by energy savings and will not increase the capacity of the facility significantly are supported activities.

At the level of a project, risk assessment is based on the Paris alignment framework underpinned by climate-related due diligence. At the level of counterparties, climate risk screening tools have been developed for each of the EIB's main credit segments to assess climate risk, and for the EIB's equity portfolio. Initially, the screening tool will be used for portfolio monitoring as well as internal reporting and disclosures. It will provide transparency on the EIB Group's exposure to climate risk and allow informed risk management decisions (**EIB Group Climate Bank Roadmap 2021-2025, 2020**).

The **EIB Environmental and Social Standards** Handbook is composed of 11 standards. “Energy efficiency” is explicitly mentioned under two standards, namely “Standard 3 – Resource Efficiency and Pollution Prevention” and “Standard 5 – Climate Change”. Under standard 3, for projects that are subject to an Environmental and/or Social Impact Assessment (ESIA), the promoter needs to provide the EIB the ESIA report with a description of the proposed technology and other techniques for reducing emissions to air, generation of waste, etc., as well as enhancing energy efficiency. Under standard 5, the project promoter shall demonstrate, on request, that due consideration has been given to alternatives to minimise project-related GHG emissions. These measures may include, but are not limited to: the use of best available techniques (BAT) and/or any emerging techniques, energy efficiency, resource efficiency, adoption of less carbon-intensive or renewable energy sources, or the reduction of fugitive emissions (**EIB Environmental and Social Standards, 2022**).

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## World Bank and Energy Efficiency: State of play

Documents reviewed:

1. The World Bank, 2016. The World Bank Environmental and Social Framework. <https://thedocs.worldbank.org/en/doc/837721522762050108-0290022018/original/ESFFramework.pdf>

2. The World Bank, 2016. Guidance Note for Borrowers. Environmental & Social Framework for IPF Operations.  
<https://documents1.worldbank.org/curated/en/112401530216856982/ESF-Guidance-Note-3-Resource-Efficiency-and-Pollution-Prevention-and-Management-English.pdf>
3. The World Bank Group, 2021. Climate Change Action Plan 2021-2025.  
<https://openknowledge.worldbank.org/bitstream/handle/10986/35799/CCAP-2021-25.pdf?sequence=2&isAllowed=y>
4. The World Bank Group, 2021. From crisis to green, resilient, and inclusive recovery.  
<https://documents1.worldbank.org/curated/en/120541633011500775/pdf/The-World-Bank-Annual-Report-2021-From-Crisis-to-Green-Resilient-and-Inclusive-Recovery.pdf>
5. The World Bank Group, 2021. World Bank Group Support to Energy Efficiency: An Independent Evaluation of Demand-Side Approaches.  
<https://documents1.worldbank.org/curated/en/673731629998649246/pdf/World-Bank-Group-Support-to-Energy-Efficiency-An-Independent-Evaluation-of-Demand-side-Approaches-Approach-Paper.pdf>

## Summary

No explicit mention of energy efficiency first. Scant or only very broad reference to energy efficiency in official documents<sup>123</sup>. Energy efficiency is identified as one of the largest untapped opportunities in the Bank Group's Climate Change Action Plan 2021–2025 and scaling it up is a critical element of the energy transition. Some relevant information found in the Guidance Note for Borrowers in the Environmental and Social Framework (2016), which became effective on 1.10.2018 and applies to all Investment Policy Financing (IPF) projects initiated after this date through 10 Environmental and Social Standards (ESS) that are designed to support Borrowers' environmental and social (E&S) risk management; ESS3 is the relevant standard that deals with energy efficiency.

Strategy level
<ul style="list-style-type: none"> <li>- WBG is committed to aligning its financing flows with the objectives of the Paris Agreement. WB will align all new operations by the start of fiscal year 2024. IFC and MIGA, 85% of Board-approved real sector operations starting July 2023 and a 100% starting July 2025 (The World Bank Group, 2021. Climate Change Action Plan 2021-2025).</li> <li>- Across the entire WBG the commitment is to achieving 35% of total financing in climate, as an average over the five years of 2021–2025 (The World Bank Group, 2021. Climate Change Action Plan 2021-2025).</li> </ul>
Sector/Portfolio level
<ul style="list-style-type: none"> <li>- The Bank Group is one of the largest providers of financing for renewable energy and energy efficiency projects in developing countries, committing \$8.4 billion over the past five years and helping mobilize private capital for the sector (The World Bank Group, 2021. From crisis to green, resilient, and inclusive recovery).</li> <li>- The World Bank and IFC have increased and broadened support for energy efficiency since 2014 in alignment with the Climate Change Action Plan. The World Bank has contributed to more than 2.8 million megawatt hours of energy savings annually for its clients (countries and firms) in the FY11–20 period (The World Bank Group, 2021).</li> </ul>

<sup>123</sup> However, energy efficiency issues are discussed in the "Live Wire," which is the World Bank's series of online knowledge notes on energy and extractives sector development issue. Live Wire is a vehicle for Bank Group staff to share findings drawn from project and analytical work. <https://openknowledge.worldbank.org/discover>

<p>World Bank Group Support to Energy Efficiency: An Independent Evaluation of Demand-Side Approaches).</p> <ul style="list-style-type: none"> <li>- WB has used investment project financing (IPF) more than development policy financing (DPF), and IFC has used debt more than equity instruments for energy efficiency.</li> <li>- Energy efficiency support includes investment loans (IPFs, including trust funded operations), DPFs with energy efficiency-related prior actions by the line ministries responsible for energy, transport, and water, and Program-for-Results financing. DPFs that support energy efficiency are a small share of operations and are often part of broader multisectoral policy programs. Climate informed DPFs support sustainable and resilient growth through climate policy actions, including the introduction of energy efficiency requirements for buildings. For IFC, debt instruments have been used more than equity. The World Bank's Energy and Extractive Industries Global Practices makes up 80 percent of the energy efficiency portfolio. IFC's Manufacturing and Services project portfolio makes up 58 percent of the total energy efficiency portfolio. It includes advisory services work on industrial efficiency, green buildings, and certification (The World Bank Group, 2021. World Bank Group Support to Energy Efficiency: An Independent Evaluation of Demand-Side Approaches).</li> </ul>
<p><b>Project level</b></p>
<ul style="list-style-type: none"> <li>- Generally, the WBG will support projects both on the supply side (in power generation and by reducing transmission and distribution losses) and the demand side (industry, municipalities and other public sector users, residential buildings, and agriculture). Also, energy efficiency is seen as a means for improving energy access and reducing stress on the overall power system (The World Bank Group, 2021. Climate Change Action Plan 2021-2025).</li> <li>- ESMAP, a multidonor trust fund, supports energy efficiency programmatically, focusing on both supply- and demand-side issues through City Services and Efficient and Sustainable Buildings. ESMAP is also supporting the development of public-private approaches and mechanisms to unlock private sector capital for investments in energy efficiency infrastructure.</li> </ul> <p>The GBMTP is part of IFC's programmatic approach to steer construction in rapidly urbanizing economies onto a lower-carbon path. The program targets developers, owners, governments, banks and building professionals. It outlines the benefits of working together to unblock the potential for an era of green construction and development. The program supports building certifications and standard-setting work, in addition to catalyzing financial intermediation through commercial banks and capital markets in alignment with environment, social, and governance best practices (The World Bank Group, 2021. World Bank Group Support to Energy Efficiency: An Independent Evaluation of Demand-Side Approaches).</p>

Strategy (S) or Sector/Portfolio (SP), or Project (P) level	Document	Key findings
S+SP	The World Bank Group, 2021. Climate Change Action Plan 2021-2025.	Energy efficiency cited as one of the largest untapped sources of energy, scaling it up identified as critical element of the energy transition. WBG will support projects both on the supply side and the demand side. IFC and MIGA aim to scale their energy efficiency finance through credit lines, green bonds, green loans,

		and guarantees and will work with real sector clients on large-scale energy efficiency investments, helping them to identify opportunities within larger projects. This work will support financial institutions' financing of energy efficiency projects, including industrial and building retrofits.
SP	The World Bank, 2016. Guidance Note for Borrowers. Environmental & Social Framework for IPF Operations.	The efficient use of energy is identified as important way to sustainable development. When a project is a significant user of energy, the borrower will adopt the resource efficiency requirements laid down in the ESS as well as follow the relevant guidelines in the WB's Environmental, Health, and Safety Guidelines. The WBG supports all sectors.
SP	The World Bank Group, 2021. World Bank Group Support to Energy Efficiency: An Independent Evaluation of Demand-Side Approaches	<p>The World Bank and IFC have increased and broadened support for energy efficiency since 2014 in alignment with the Climate Change Action Plan. The World Bank has contributed to more than 2.8 million megawatt hours of energy savings annually for its clients (countries and firms) in the FY11–20 period.</p> <p>WB has used investment project financing (IPF) more than development policy financing (DPF), and IFC has used debt more than equity instruments for energy efficiency. Energy efficiency support includes investment loans (IPFs, including trust funded operations), DPFs with energy efficiency-related prior actions by the line ministries responsible for energy, transport, and water, and Program-for-Results financing.</p>
P	The World Bank Group, 2021. World Bank Group Support to Energy Efficiency: An Independent Evaluation of Demand-Side Approaches	The WBG will support projects both in the demand and supply side.
P	The World Bank Group, 2021. World Bank Group Support to Energy Efficiency: An Independent Evaluation of Demand-Side Approaches	<p>ESMAP, a multidonor trust fund, supports energy efficiency programmatically, focusing on both supply- and demand-side issues.</p> <p>The GBMTP is part of IFC's programmatic approach to steer construction in rapidly urbanizing economies onto a lower-carbon path.</p>

## 5. STRATEGY LEVEL

The WBG is committed to aligning its financing flows with the objectives of the Paris Agreement. They define alignment as providing support to clients that is consistent with pathways toward

low-carbon and climate-resilient development. For the World Bank, the plan is to align all new operations by July 1, 2023, the start of fiscal year 2024. For IFC and MIGA, 85 percent of Board-approved real sector operations will be aligned starting July 1, 2023, and 100 percent two years later, starting July 1, 2025. To achieve this, both institutions will begin aligning 100 percent of their projects at the concept stage iv Executive Summary ahead of July 1, 2023. Once a methodology for financial institutions and funds is finalized among multilateral development banks (MDBs), a similar approach will be taken for this business as well **(The World Bank Group, 2021. Climate Change Action Plan 2021-2025).**

## 6. SECTOR LEVEL

Generally, the WBG will support energy efficiency projects in different sectors such as industry, municipalities and other public sector users, transport, residential buildings, and agriculture **(The World Bank Group, 2021. Climate Change Action Plan 2021-2025).**

## 7. PORTFOLIO LEVEL

The World Bank and IFC have increased and broadened support for energy efficiency since 2014 in alignment with the Climate Change Action Plan. The World Bank has contributed to more than 2.8 million megawatt hours of energy savings annually for its clients (countries and firms) in the FY11–20 period (The World Bank Group, 2021. World Bank Group Support to Energy Efficiency: An Independent Evaluation of Demand-Side Approaches).

The International Finance Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA) anticipate increasing support for energy efficiency projects. The COVID-19 crisis has reduced financial capacity across sectors to invest in clean technologies, threatening to stall progress. Looking ahead, the energy industry can respond quickly to new incentives, scale up readily available technologies, and create substantial savings and earnings for households and businesses in a post pandemic recovery. IFC and MIGA aim to scale their energy efficiency finance through credit lines, green bonds, green loans, and guarantees and will work with real sector clients on large-scale energy efficiency investments, helping them to identify opportunities within larger projects. This work will support financial institutions' financing of energy efficiency projects, including industrial and building retrofits **(The World Bank Group, 2021. Climate Change Action Plan 2021-2025).**

## 8. PROJECT LEVEL

The WBG will support projects both on the supply side (in power generation and by reducing transmission and distribution losses) and the demand side (industry, municipalities and other public sector users, residential buildings, and agriculture) **(The World Bank Group, 2021. Climate Change Action Plan 2021-2025).**

The efficient use of energy is an important way in which the Borrower can contribute to sustainable development. When the project is a potentially significant user of energy, in addition to applying the resource efficiency requirements of this ESS, the Borrower will adopt measures specified in the EHSGs to optimize energy usage, to the extent technically and financially feasible.

GN6.1. Sectors that typically make significant use of energy include, for example, industrial production, resource extraction, water pumping, or transport. However, projects in other sectors may also be significant users of energy; these include waste management, agriculture, education, and health.

GN6.2. As indicated in ESS1, technical feasibility is based on whether the proposed measures and actions can be implemented with commercially available skills, equipment, and materials, taking into consideration prevailing local factors such as climate, geography, demography, infrastructure, security, governance, capacity, and operational reliability. Financial feasibility is based on relevant financial considerations, including relative magnitude of the incremental cost of adopting such measures and actions compared to the projects investment, operating, and maintenance costs, and on whether this incremental cost could make the project nonviable for the

Borrower (**The World Bank, 2016. Guidance Note for Borrowers. Environmental & Social Framework for IPF Operations**).

## Appendix D KfW draft note on energy efficiency activities in the context of energy efficiency first

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### Background

KfW, headquartered in Frankfurt/Main, is one of the world's leading promotional banks and provided EUR 107 bn of financing in 2021. It is the promotional bank of Germany with 100% public shareholders (80% Federal Republic/20% Federal States). It has been established in 1948 as Kreditanstalt für Wiederaufbau.

The bank has been committed to improving economic, social and environmental living conditions across the globe on behalf of its shareholders. Its financing and promotional services are aligned with the United Nations' Agenda 2030 and contribute to the achievement of the 17 Sustainable Development Goals (SDGs).

KfW does not have any branches and does not hold customer deposits. Domestically, KfW operates with the so-called on-lending approach, marketing and channeling the promotional products through a broad network of financing partners.

It funds its promotional business in a responsible manner and almost entirely via the international capital markets.

Headquartered in Berlin and Bonn, at its subsidiaries KfW IPEX-Bank, DEG and KfW Capital, it employs over 7,300 members of staff. It is represented at around 80 locations worldwide.

KfW benefits from explicit and direct statutory guarantee and institutional liability by the Federal Republic of Germany. KfW holds a AAA/AAA/Aaa-rating due to the Federal guarantee.

### Energy efficiency finance - embedded in the strategic promotional financing goals

Offering sustainable promotion to support the transformation of economy and society to improve the economical, ecological and social living conditions worldwide is the purpose of KfW promotional business activities.

Providing finance to address climate change and support environmental protection belongs to KfW's core strategic business targets: at least 38% of new financings have to be dedicated to this area, which **strongly focuses on energy efficiency** besides renewable energies and biodiversity inter alia.

The required quota is usually more than just fulfilled: in 2021, the share of new financing dedicated to climate change and environmental protection **carving out the volume dedicated to temporary corona-aid programs - was even 53%** (source: KfW Sustainability report 2021).

The share of financing supporting **energy efficiency** in **domestic** promotion was [TBC]%. **Share of efficiency finance of overall KfW activities in 2022: [TBC]%**

### Business divisions and their specific engagement in energy efficiency finance

For all main business divisions, energy efficiency plays an important role.

### Domestic promotional business

**With more than 75%, the domestic business represents a large share of KfW overall business (2021: EUR 83bn).**



In its domestic business, KfW operates exclusively with **a mandate of the German Government**. The promotional elements – interest rate subsidy, partial debt relief and investment grants – are **financed with a dedicated public budget** provided to KfW for this purpose. That said, with its promotional financing activities targeting energy efficiency, **KfW is supporting the transposition of the Efficiency First Principle on behalf of the Federal Government**.

#### **SME Bank & Private Clients**

The business division, representing around 80% of the domestic business, is focused on the highly standardized, high-volume business using digital processes for application and approval. The loans are provided using the so-called on-lending model whereby KfW is distributing the products via a broad network of financing partners.

The business sector is broken down into two segments - **SME Bank** is geared towards corporate clients while the other segment targets **private customers**, supporting the German economy with a wide range of loans and grants in the **priority areas of energy efficiency and renewable energy**, the environment and sustainability, innovation, corporate investment and entrepreneurship.

#### **Main programs targeting energy efficiency:**

##### **Buildings:**

**Transposing the efficiency first principle in the building sector** is supported by KfW through the long-standing provision of loans and investment grants for energy efficiency investments in all building types (residential, commercial, public). The product structure and features are broadly regarded as best practice.

This promotional offer belongs to KfW's most important domestic promotional financing activities, which since July 2021 are integrated into the "Federal promotional support for energy efficiency in buildings" - "BeG" (Bundesförderung für effiziente Gebäude/Bundesförderung für effiziente Gebäude – the new German national support programme for buildings, bundling all existing German support activities for energy efficiency in the building sector under one roof. Under this scheme, KfW is now in charge of providing loans (with partial debt relief) whereas investment grants since July 2022 are entirely deployed by the Federal Agency for Export Control (BAFA).

**Since its inception in 2006, the programmes formerly named Energy Efficient Construction and Refurbishment provided finance to more than 6.5 million housing units (by end of year 2021 2021), leading to CO2-savings of 12 million t/ p.a..**

**Blending loans and grants:** Interest subsidy as well as a partial debt relief are the main support elements of the promotional finance offer.

The promotion is based on the so-called Efficiency House approach: promotional support is only provided if the energetic level reached is more ambitious than the legal requirements outlined in the building code. The higher the energy efficiency level reached as a result of the investments, the higher the level of promotional / financial support provided.

The Efficiency House became a market standard in Germany - thus creating broad awareness for the availability of financial support for ambitious efficiency measures.

**Mandatory involvement of an Energy Expert:** Transposing the efficiency first principle is further supported by the requirement to involve an energy expert in the application and approval process for promotional loans. In particular for private investors, the energy expert provides guidance and orientation throughout the planning process for the energy efficiency investment. The cost is partly covered by the promotional loan offer.



Program successes include effectively establishing technical standards that exceed regulatory standards for renovation and new construction, conducting quality control through a broad network of dedicated energy efficiency experts, and developing general awareness of the financing and the ecosystem.

### **Important information:**

**The structure and promotional conditions for the buildings related promotional products are currently under review with major changes expected in 2023, introducing a stronger focus on CO2-savings.**

### **Corporates**

KfW supports the **efficiency first principle in the corporate sector** via a number of specific promotional loan programs.

#### ***(a) KfW Energy Efficiency Program - Production facilities/processes Energy efficiency in companies"***

With this program, KfW provides low interest rate loan financing for energy efficiency measures in commercial enterprises. The program's focus is on **production plants and production processes** of commercial enterprises. There is the recommendation to involve an energy consulting prior to applying for a loan.

The program targets **companies** of all size including service providers acting in the context of a contracting agreement.

Funding is available for all investment measures that achieve energy savings of at least 10%, for example in the areas of:

- Machinery/equipment/process technology; Compressed air/vacuum/extraction technology; Electric drives/pumps; process heat; Process cooling, cold stores, cold rooms; Heat recovery/waste heat utilization (for production processes); Measurement and control technology; Information and communication technology.
- **Volume 2021:** EUR 2bn

#### ***(b) "Federal funding for energy and resource efficiency in the economy"***

The program focuses on the **use of highly efficient technologies**.

KfW supports measures to **save energy and resources and reduce carbon dioxide emissions in Germany** by providing low-interest loans from KfW in conjunction with high repayment subsidies – up to 55% - from funds of the Federal Ministry for Economic Affairs and Energy.

It is available for domestic and foreign companies in the commercial sector.

**The financing offer is structured into 4 modules, of which 3 focus on energy efficiency:**

- **Module 1:** Cross-cutting technologies: individual investment measures to increase energy efficiency through the use of highly efficient technologies available on the market.
- **Module 2:** Process heat from renewable energies
- **Module 3:** Measurement and control technology, sensors and energy management software
- **Module 4:** Energy- and resource-related optimization of plants and processes

There is cost coverage for the involvement of an energy expert for preparation and implementation of the measures as well as development of savings concept.

- **Promotional volume 2021:** EUR 0.4 bn

#### ***(c) "Environmental Innovation Program" offered by the Federal Ministry of Environment, Nature Conservation, Nuclear Safety and Consumer Protection***

**With this program, KfW supports large-scale projects** which for the **first time realize advanced technological processes** and process combinations for the avoidance or reduction of environmental pollution by providing low interest rate loans.

The goal is to operate economically successfully, with as little environmental impact and as little use of resources as possible.

The program is available for a broad range of applicants including domestic and foreign companies in the commercial sector as well as other natural and legal entities under private law and companies with a majority municipal shareholder background, with a preference to small and medium-sized enterprises.

Funding is available for structural, mechanical or other investments in Germany including inter alia climate protection measures such as **energy efficiency**, energy conservation, use of renewable energies and others.

- **Volume 2021 (grants, partly used for energy efficiency related measures):** EUR 50m

### Customized Finance & Public Clients

**The Business sector Customized Finance & Public Clients provides** tailored promotional solutions for companies and banks as well as finance for municipalities. This sector is split into three business segments: the municipal and social infrastructure segment covers the wide range of basic promotion offers for municipalities, municipal companies and non-profit organisations with a focus on climate change and the energy transition, social change and digitalisation. Standardised loans are issued either on a direct basis (business with municipalities) or through on-lending (municipal and social companies) or as grants.

#### Main programs targeting energy efficiency:

The financing offer includes promotional finance for energy efficiency in public buildings, which is a component of the **Federal Finance for Energy Efficiency in Buildings**.

Finance for energy efficiency measures is also available in the context of **additional promotional products**, where energy efficiency is not directly the focus:

The program "Energetic urban redevelopment" provides finance for energy efficient water supply and waste-water disposal in urban quarters.

The program called „Investment loan for municipal and social enterprises" allows inter alia for financing municipal infrastructure and in this context more precisely investments into energy savings measures and investments to switch to environmentally friendly energy sources.

As of October 2022, there will be a new product named "Syndicated loan for sustainable Transformation". It will provide a module under which financing for energy efficiency measure will be granted.

- **Volume 2021:** approx. EUR 1bn

### KfW Capital

With support from the ERP Special Fund, the subsidiary KfW Capital invests in venture capital (VC) and venture debt funds on equal terms in collaboration with other investors via the ERP-VC Fund Investments and ERP/Future Fund – Growth Facility programmes. KfW Capital also holds stakes in the co-investment fund named Coparion and in three generations of the High-Tech Gründerfonds (HTGF) for start-ups. At this moment, there are no dedicated financing activities targeting energy efficiency.

### KfW IPEX bank

**KfW IPEX-Bank** is the commercial arm of KfW, legally independent group subsidiary responsible for export and project finance within KfW Group. It supports German and European companies operating in key industrial sectors in global markets by structuring medium- and long-term financing for German and European exports, through infrastructure investments, by securing raw materials and by carrying out environmental and climate action projects all over the world. At the same time, it is committed to the Equator Principles and – in addition to economic factors – also expressly incorporates social and environmental aspects in the decision-making process for granting loans. IPEX does not offer dedicated loan products for energy efficiency.

However, there a specific energy efficiency related conditions under which loans are regarded as financing targeting environmental and climate protection and in this case also qualify for the **Green Loan Framework**. There is the requirement to proof a 15% energy savings compared to

the national average in case of a new investment and 20% in case of a replacement investment, respectively.

### Development finance

The business sector **Promotion of developing countries and emerging economies** includes the business division KfW Development Bank and the subsidiary DEG. KfW Development Bank finances and supports programs and projects that mainly involve public-sector players in developing countries and emerging economies on behalf of the German Federal Government and other commissioning partners such as the European Commission. The objective is to support partner countries in alleviating poverty, securing peace, protecting the environment, mitigating climate change and ensuring fair globalisation.

**Supporting energy efficiency investments** in developing countries plays an increasingly important role for the business division KfW Development bank. It provides finance for energy efficiency demand side, covering buildings, industry and private households. In support of energy efficiency on the supply side, KfW financially supports the establishment of efficient energy transmission and distribution infrastructure.

The funds are made available through local and regional banks using a system similar to the KfW domestic lending model. In the last five years, the business division provided finance with a volume of EUR 9.7 bn for the energy sector, of which EUR 2.2 bn for demand side energy efficiency measures and EUR 3 bn for supply side energy efficiency measures. A massive increase of energy efficiency measures is regarded focal in order to achieve a rapid transformation of the energy systems making energy efficiency an increasingly important topic in development policy.

**The wholly owned subsidiary DEG – (Deutsche Investitions- und Entwicklungsgesellschaft mbH/German development and investment company)** is in charge of advising, financing and structuring investments of private companies in developing countries and emerging economies in order to foster sustainable economic development, ensure local added value and promote the expansion of the private sector as an important driving force for development.

In the corporate sector, DEG primarily finances extension and modernization investments where improvements of energy efficiency play a major role. It is estimated that about 20-25% of the financing provided by DEG for corporate investments (506 Mio EUR in 2021) are directly related with equipment replacement, improvements of energy efficiency and the optimization of energy systems.

In addition to financing, DEG has developed technical assistance programs to support its partner companies in their climate transformation process, offering a wide range of standard and tailor-made energy efficiency analyses and advisory instruments. In the last 5 years, DEG has implemented 34 Resource and Energy Efficiency Checks for companies that spend more than 1 Mio USD/year on energy costs. In subsequent steps, those companies were further supported in the introduction of energy management systems and in the preparation of energy efficiency investments. In March 2022, DEG has started the program CARI (Climate Advisory and Reduction Initiative) that among other aspects has the goal to help companies in the development of cutting-edge innovative energy efficiency solutions.

### KfW Green Bond issuance and the green bond principles

It can be assumed that the efficiency first principle is also supported by the issuance of Green Bonds. Since 2014, KfW is an issuer of green bonds and belongs to the largest issuers worldwide with a total volume of green bonds issued of more than EUR 50 bn and since 2019, energy efficiency loans can be used as underlying. The loans focus of energy efficiency investments in the building sector (in particular the "Federal Funding for Efficient Buildings (BEG)") as well as for renewable energy and since 2022 also clean transportation.

### TCFD framework

The Task-Force-on Climate Related Financial Disclosures (TCFD), has been launched by the Financial Stability Board (FSB) in 2015 in order to identify the information needed by investors, lenders, insurance underwriters to assess and price climate-related risks and opportunities and make recommendations for company disclosures helping financial market participants understand their climate-related risks. There is no direct link to energy efficiency or the efficiency first principle.

Based on 2017 recommendations, the focus is on a framework for disclosing climate related risks and opportunities addressing the areas of governance, strategy, risk managements and metrics.

### Link to the EU Taxonomy

The **efficiency first principle** does not play an explicit role in the context of the EU Taxonomy. For those economic activities which address energy efficiency (such as for instance building renovation) there are technical criteria which have to be met in order to qualify as environmentally sustainable in the context of the EU Taxonomy.

### Conclusion

KfW provides a broad spectrum of energy efficiency related promotional financing products across its business divisions. With most of its financing activities, KfW is acting based on a mandate of the German Government, and within this mandate, actively supporting the transposition of the efficiency first principle.

# Appendix E Discussion Papers on energy efficiency first and the Taxonomy, TCFD and ESG frameworks

## EU taxonomy and Energy Efficiency for Financial Institutions

### **EU taxonomy in brief**

The EU Taxonomy is a classification system for sustainable economic activities. It classifies sustainable activities by setting performance thresholds, outlined in the "Technical Screening Criteria," to help parties identify environmentally friendly activities. The EU has defined six environmental objectives:

- Climate mitigation
- Climate adaptation
- Sustainable Use and Protection of Water and Marine Resources
- Transition to a Circular Economy
- Pollution Prevention and Control
- Protection and Restoration of Biodiversity and Ecosystems

The EU Taxonomy translates the climate and environmental objectives into clear criteria - list of Taxonomy-eligible activities- that may substantially contribute to that environmental objective by complying with the Technical Screening Criteria.<sup>124, 125</sup>

The EU Taxonomy is an important element of a much broader sustainable finance framework that will deliver a complete toolkit for financing the transition. It sets out four conditions that an economic activity has to meet to be recognised as Taxonomy-aligned:

- Making a substantial contribution to at least one environmental objective;
- Complying with the technical screening criteria;
- Doing no significant harm to any other environmental objective;
- Complying with minimum social safeguards..

The EU Taxonomy includes sectors with the highest contribution to CO<sub>2</sub> emissions (energy, manufacturing, transport, buildings), as well as activities enabling their transformation (Table 1).

**Table 1. Sectors and activities EU taxonomy-relevant.**<sup>126</sup>

<sup>124</sup> [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI\\_COM:C\(2021\)2800&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:C(2021)2800&from=EN)

<sup>125</sup> <https://ramboll.com/-/media/files/rm/eu-taxonomy-quick-guide.pdf?la=en>

<sup>126</sup> The EU Taxonomy can be downloaded at <https://ec.europa.eu/sustainable-finance-taxonomy/documents/taxonomy.xlsx>

Sector	Activity number	Activity
Forestry	1.1	Afforestation
Forestry	1.2	Rehabilitation and restoration of forests, including reforestation and natural forest regeneration after
Forestry	1.3	Forest management
Forestry	1.4	Conservation forestry
Environmental protection and restoration act	2.1	Restoration of wetlands
Manufacturing	3.1	Manufacture of renewable energy technologies
Manufacturing	3.2	Manufacture of equipment for the production and use of hydrogen
Manufacturing	3.3	Manufacture of low carbon technologies for transport
Manufacturing	3.4	Manufacture of batteries
Manufacturing	3.5	Manufacture of energy efficiency equipment for buildings
Manufacturing	3.6	Manufacture of other low carbon technologies
Manufacturing	3.7	Manufacture of cement
Manufacturing	3.8	Manufacture of aluminium
Manufacturing	3.9	Manufacture of iron and steel
Manufacturing	3.10	Manufacture of hydrogen
Manufacturing	3.11	Manufacture of carbon black
Manufacturing	3.12	Manufacture of soda ash
Manufacturing	3.13	Manufacture of chlorine
Manufacturing	3.14	Manufacture of organic basic chemicals
Manufacturing	3.15	Manufacture of anhydrous ammonia
Manufacturing	3.16	Manufacture of nitric acid
Manufacturing	3.17	Manufacture of plastics in primary form
Energy	4.1	Electricity generation using solar photovoltaic technology
Energy	4.2	Electricity generation using concentrated solar power (CSP) technology
Energy	4.3	Electricity generation from wind power
Energy	4.4	Electricity generation from ocean energy technologies
Energy	4.5	Electricity generation from hydropower
Energy	4.6	Electricity generation from geothermal energy
Energy	4.7	Electricity generation from renewable non-fossil gaseous and liquid fuels
Energy	4.8	Electricity generation from bioenergy
Energy	4.9	Transmission and distribution of electricity
Energy	4.10	Storage of electricity
Energy	4.11	Storage of thermal energy
Energy	4.12	Storage of hydrogen
Energy	4.13	Manufacture of biogas and biofuels for use in transport and of bioliquids
Energy	4.14	Transmission and distribution networks for renewable and low-carbon gases
Energy	4.15	District heating/cooling distribution
Energy	4.16	Installation and operation of electric heat pumps
Energy	4.17	Cogeneration of heat/cool and power from solar energy
Energy	4.18	Cogeneration of heat/cool and power from geothermal energy
Energy	4.19	Cogeneration of heat/cool and power from renewable non-fossil gaseous and liquid fuels
Energy	4.20	Cogeneration of heat/cool and power from bioenergy
Energy	4.21	Production of heat/cool from solar thermal heating
Energy	4.22	Production of heat/cool from geothermal energy
Energy	4.23	Production of heat/cool from renewable non-fossil gaseous and liquid fuels
Energy	4.24	Production of heat/cool from bioenergy
Energy	4.25	Production of heat/cool using waste heat
Water supply, sewerage, waste management and rem	5.1	Construction, extension and operation of water collection, treatment and supply systems
Water supply, sewerage, waste management and rem	5.2	Renewal of water collection, treatment and supply systems
Water supply, sewerage, waste management and rem	5.3	Construction, extension and operation of waste water collection and treatment
Water supply, sewerage, waste management and rem	5.4	Renewal of waste water collection and treatment
Water supply, sewerage, waste management and rem	5.5	Collection and transport of non-hazardous waste in source segregated fractions
Water supply, sewerage, waste management and rem	5.6	Anaerobic digestion of sewage sludge
Water supply, sewerage, waste management and rem	5.7	Anaerobic digestion of bio-waste
Water supply, sewerage, waste management and rem	5.8	Composting of bio-waste
Water supply, sewerage, waste management and rem	5.9	Material recovery from non-hazardous waste
Water supply, sewerage, waste management and rem	5.10	Landfill gas capture and utilisation
Water supply, sewerage, waste management and rem	5.11	Transport of CO2
Water supply, sewerage, waste management and rem	5.12	Underground permanent geological storage of CO2
Transport	6.1	Passenger interurban rail transport
Transport	6.2	Freight rail transport
Transport	6.3	Urban and suburban transport, road passenger transport
Transport	6.4	Operation of personal mobility devices, cycle logistics
Transport	6.5	Transport by motorbikes, passenger cars and light commercial vehicles
Transport	6.6	Freight transport services by road
Transport	6.7	Inland passenger water transport
Transport	6.8	Inland freight water transport
Transport	6.9	Retrofitting of inland water passenger and freight transport
Transport	6.10	Sea and coastal freight water transport, vessels for port operations and auxiliary activities
Transport	6.11	Sea and coastal passenger water transport
Transport	6.12	Retrofitting of sea and coastal freight and passenger water transport
Transport	6.13	Infrastructure for personal mobility, cycle logistics
Transport	6.14	Infrastructure for rail transport
Transport	6.15	Infrastructure enabling low-carbon road transport and public transport
Transport	6.16	Infrastructure enabling low carbon water transport
Transport	6.17	Low carbon airport infrastructure
Construction and real estate	7.1	Construction of new buildings
Construction and real estate	7.2	Renovation of existing buildings
Construction and real estate	7.3	Installation, maintenance and repair of energy efficiency equipment
Construction and real estate	7.4	Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to
Construction and real estate	7.5	Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy perform
Construction and real estate	7.6	Installation, maintenance and repair of renewable energy technologies
Construction and real estate	7.7	Acquisition and ownership of buildings
Information and communication	8.1	Data processing, hosting and related activities
Information and communication	8.2	Data-driven solutions for GHG emissions reductions
Professional, scientific and technical activities	9.1	Close to market research, development and innovation
Professional, scientific and technical activities	9.2	Research, development and innovation for direct air capture of CO2
Professional, scientific and technical activities	9.3	Professional services related to energy performance of buildings

### **Application of the EU Taxonomy for Financial Institutions**

Financial companies can use the EU Taxonomy to design credible green financial products. Large financial and non-financial companies that fall under the scope of the Non-Financial Reporting Directive will have to disclose to what extent the activities that they carry out meet the criteria set out in the EU Taxonomy. Likewise, financial market participants (such as asset managers) will have to disclose to what extent the activities that their financial products fund meet the EU Taxonomy criteria.<sup>127</sup>

The EU taxonomy regulation for the objective assessment of the sustainability of economic activities considers different circumstances and obligations for different economic actors. It is divided into the following three groups:

Companies (over 500 employees) that fall under the non-financial reporting directive (CSRD)

Financial market participant, including occupational pension providers, that offer and distribute financial products in the EU (including those from outside the EU).

EU and its member states when setting public measures, standards or labels for green financial products or (corporate) bonds.

The requirements differ for financial market participants and companies that do not offer financial products. Some companies/financial market participants can fall into both categories (depending on size and economic activity). All financial market participants offering financial products including occupational pensions in the EU must disclose how and to what extent their economic activity includes, promotes or finances sustainable projects according to criteria of the EU taxonomy. For each relevant product, the following must be disclosed:

- How and to what extent the taxonomy has been applied in determining the sustainability of the underlying investments.
- To which environmental objective(s) the investments contribute.
- The share of sustainable investments expressed as a percentage of the investment, fund or portfolio based on the criteria of the EU taxonomy.
- When indicating the shares, a distinction should be made between transition activities and enabling activities.

The information must be provided within the framework of the existing pre-contractual periodic contribution obligation. In general, taxonomy reporting is required for all financial products offered and distributed in the EU (including fixed income products). Individual financial instruments, such as bonds, are not directly included in the taxonomy regulation. If for specific reasons the financial product is not subject to the EU taxonomy regulation, this should be indicated in a disclaimer.<sup>128</sup>

### **EU taxonomy and Energy Efficiency for Financial Institutions**

Table 2 show a selection of the sectors and activities energy efficiency-relevant and their specific contribution to the Climate change mitigation objective.<sup>129</sup> However, a clear focus on energy efficiency criteria can only be found in the "construction and real estate" sector.

**Table 2. Technical screening criteria<sup>130</sup> of the sectors and activities energy efficiency-relevant**

Sector	Activity	Substantial contribution to climate change mitigation
Manufacturing	3.5 Manufacture of energy efficiency equipment for buildings	The economic activity manufactures one or more of the following products and their key components <sup>94</sup> : (a) windows with U-value lower or equal to 1,0 W/m <sup>2</sup> K; (b) doors with U-value lower or equal to 1,2 W/m <sup>2</sup> K; (c) external wall systems with U-value lower or equal to 0,5 W/m <sup>2</sup> K;

<sup>127</sup> [https://ec.europa.eu/info/sites/default/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/sustainable-finance-taxonomy-faq\\_en.pdf](https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/sustainable-finance-taxonomy-faq_en.pdf)

<sup>128</sup> <https://eu-taxonomy.info/info/eu-taxonomy-for-financial-institutions>

<sup>129</sup> The other five environmental objectives (Climate adaptation, Sustainable Use and Protection of Water and Marine Resources, Transition to a Circular Economy, Pollution Prevention and Control, Protection and Restoration of Biodiversity and Ecosystems) are considered less relevant for energy efficiency solutions.

<sup>130</sup> [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI\\_COM:C\(2021\)2800&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:C(2021)2800&from=EN)



		<p>(d) roofing systems with U-value lower or equal to 0,3 W/m<sup>2</sup>K;</p> <p>(e) insulating products with a lambda value lower or equal to 0,06 W/mK;</p> <p>(f) household appliances falling into the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 of the European Parliament and of the Council<sup>95</sup> and delegated acts adopted under that Regulation;</p> <p>(g) light sources rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation;</p> <p>(h) space heating and domestic hot water systems rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation;</p> <p>(i) cooling and ventilation systems rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation;</p> <p>(j) presence and daylight controls for lighting systems;</p> <p>(k) heat pumps compliant with the technical screening criteria set out in Section 4.16 of this Annex;</p> <p>(l) façade and roofing elements with a solar shading or solar control function, including those that support the growing of vegetation;</p> <p>(m) energy-efficient building automation and control systems for residential and non-residential buildings;</p> <p>(n) zoned thermostats and devices for the smart monitoring of the main electricity loads or heat loads for buildings, and sensing equipment;</p> <p>(o) products for heat metering and thermostatic controls for individual homes connected to district heating systems, for individual flats connected to central heating systems serving a whole building, and for central heating systems;</p> <p>(p) district heating exchangers and substations compliant with the district heating/cooling distribution activity set out in Section 4.15 of this Annex;</p> <p>(q) products for smart monitoring and regulating of heating system, and sensing equipment.</p>
Energy	4.16 Installation and operation of electric heat pumps	<p>The installation and operation of electric heat pumps complies with both of the following criteria:</p> <p>(a) refrigerant threshold: Global Warming Potential does not exceed 675;</p> <p>(b) energy efficiency requirements laid down in the implementing regulations under Directive 2009/125/EC are met.</p>
Water supply, sewerage, waste management and remediation	5.2 Renewal of water collection, treatment and supply systems	<p>The renewal of the water supply system leads to improved energy efficiency in one of the following ways:</p> <p>(a) by decreasing the net average energy consumption of the system by at least 20% compared to own baseline performance averaged for three years, including abstraction and treatment, measured in kWh per cubic meter produced water supply;</p> <p>(b) by closing the gap by at least 20% either between the current leakage level averaged EN 117 EN over three years, calculated using the Infrastructure Leakage Index (ILI) rating method and an ILI of 1.5207, or between the current leakage level averaged over three years, calculated using another appropriate method, and the threshold value established in accordance with Article 4 of Directive (EU) 2020/2184. The current leakage level averaged over three years is calculated across the extent of water supply (distribution) network where the works are carried out, i.e. for the renewed water supply (distribution) network at district metered area(s) (DMAs) or pressure managed area(s) (PMAs).</p>
Water supply, sewerage, waste management and remediation	5.4 Renewal of waste water collection and treatment	<p>1. The renewal of a collection system improves energy efficiency by decreasing the average energy consumption by 20% compared to own baseline performance averaged over three years, demonstrated on an annual basis. That decrease of energy consumption can be accounted for at the level of the project (i.e. the collection system renewal) or, across the downstream waste water agglomeration (i.e. including the downstream collection system, treatment plant or discharge of waste water).</p> <p>2. The renewal of a waste water treatment plant improves energy efficiency by decreasing the average energy consumption of the system by at least 20% compared to own baseline performance averaged over three years, demonstrated on an annual basis.</p> <p>3. For the purposes of points 1 and 2, the net energy consumption of the system is calculated in kWh per population equivalent per annum of the waste water collected or effluent treated, taking into account measures decreasing energy consumption relating to source control (reduction of storm water or pollutant load inputs) and, as appropriate, energy generation within the system (such as hydraulic, solar, thermal and wind energy).</p> <p>4. For the purpose of point 1 and 2, the operator demonstrates that there are no material changes relating to external conditions, including modifications to discharge authorisation(s) or changes in load to the agglomeration that would lead to a reduction of energy consumption, independent of efficiency measures taken.</p>
Transport	6.8 Inland freight water transport	<p>1. The activity complies with one or both of the following criteria:</p> <p>(a) the vessels have zero direct (tailpipe) CO<sub>2</sub> emission;</p> <p>(b) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, the vessels have direct (tailpipe) emissions of CO<sub>2</sub> per tonne kilometre (gCO<sub>2</sub>/tkm), calculated (or estimated in case of new vessels) using the Energy Efficiency Operational Indicator, 50% lower than the average reference value for emissions of CO<sub>2</sub> defined for heavy duty vehicles (vehicle subgroup 5- LH) in accordance with Article 11 of Regulation 2019/1242.</p> <p>2. Vessels are not dedicated to the transport of fossil fuels.</p>



Transport	6.10 Sea and coastal freight water transport, vessels for port operations and auxiliary activities	<p>1. The activity complies with one or more of the following criteria:</p> <p>(a) the vessels have zero direct (tailpipe) CO<sub>2</sub> emissions;</p> <p>(b) until 31 December 2025, hybrid and dual fuel vessels derive at least 25 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports;</p> <p>(c) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, and only where it can be proved that the vessels are used exclusively for operating coastal and short sea services designed to enable modal shift of freight currently transported by land to sea, the vessels have direct (tailpipe) CO<sub>2</sub> emissions, calculated using the International Maritime Organization (IMO) Energy Efficiency Design Index (EEDI)<sup>246</sup>, 50 % lower than the average reference CO<sub>2</sub> emissions value defined for heavy duty vehicles (vehicle sub group 5-LH) in accordance with Article 11 of Regulation 2019/1242;</p> <p>(d) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, the vessels have an attained Energy Efficiency Design Index (EEDI) value 10 % below the EEDI requirements applicable on 1 April 2022<sup>247</sup> if the vessels are able to run on zero direct (tailpipe) CO<sub>2</sub> emission fuels or on fuels from renewable sources<sup>248</sup>.</p> <p>2. Vessels are not dedicated to the transport of fossil fuels.</p>
Transport	6.11 Sea and coastal passenger water transport	<p>The activity complies with one or more of the following criteria:</p> <p>(a) the vessels have zero direct (tailpipe) CO<sub>2</sub> emissions;</p> <p>(b) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, hybrid and dual fuel vessels derive at least 25% of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports;</p> <p>(c) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, the vessels have an attained Energy Efficiency Design Index (EEDI) value 10% below the EEDI requirements applicable on 1 April 2022, if the vessels are able to run on zero direct (tailpipe) emission fuels or on fuels from renewable sources.</p>
Construction and real estate	7.1 Construction of new buildings	<p>Constructions of new buildings for which:</p> <p>1. The Primary Energy Demand (PED), defining the energy performance of the building resulting from the construction, is at least 10 % lower than the threshold set for the nearly zero-energy building (NZEB) requirements in national measures implementing Directive 2010/31/EU of the European Parliament and of the Council<sup>282</sup>. The energy performance is certified using an as built Energy Performance Certificate (EPC).</p> <p>2. For buildings larger than 5000 m<sup>2</sup>, upon completion, the building resulting from the construction undergoes testing for air-tightness and thermal integrity, and any deviation in the levels of performance set at the design stage or defects in the building envelope are disclosed to investors and clients. As an alternative; where robust and traceable quality control processes are in place during the construction process this is acceptable as an alternative to thermal integrity testing.</p> <p>3. For buildings larger than 5000 m<sup>2</sup>, the life-cycle Global Warming Potential (GWP) of the building resulting from the construction has been calculated for each stage in the life cycle and is disclosed to investors and clients on demand.</p>
Construction and real estate	7.2 Renovation of existing buildings	<p>The building renovation complies with the applicable requirements for major renovations. As set in the applicable national and regional building regulations for 'major renovation' implementing Directive 2010/31/EU. The energy performance of the building or the renovated part that is upgraded meets cost-optimal minimum energy performance requirements in accordance with the respective directive.</p> <p>Alternatively, it leads to a reduction of primary energy demand (PED) of at least 30 %. The initial primary energy demand and the estimated improvement is based on a detailed building survey, an energy audit conducted by an accredited independent expert or any other transparent and proportionate method, and validated through an Energy Performance Certificate. The 30 % improvement results from an actual reduction in primary energy demand (where the reductions in net primary energy demand through renewable energy sources are not taken into account), and can be achieved through a succession of measures within a maximum of three years.</p>
Construction and real estate	7.3 Installation, maintenance and repair of energy efficiency equipment	<p>The activity consists in one of the following individual measures provided that they comply with minimum requirements set for individual components and systems in the applicable national measures implementing Directive 2010/31/EU and, where applicable, are rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation:</p> <p>(a) addition of insulation to existing envelope components, such as external walls (including green walls), roofs (including green roofs), lofts, basements and ground floors (including measures to ensure air-tightness, measures to reduce the effects of thermal bridges and scaffolding) and products for the application of the insulation to the building envelope (including mechanical fixings and adhesive);</p> <p>(b) replacement of existing windows with new energy efficient windows;</p> <p>(c) replacement of existing external doors with new energy efficient doors;</p> <p>(d) installation and replacement of energy efficient light sources;</p> <p>(e) installation, replacement, maintenance and repair of heating, ventilation and air-conditioning (HVAC) and water heating systems,</p>

		including equipment related to district heating services, with highly efficient technologies; (f) installation of low water and energy using kitchen and sanitary water fittings which comply with technical specifications set out in Appendix E to this Annex and, in case of shower solutions, mixer showers, shower outlets and taps, have a max water flow of 6 L/min or less attested by an existing label in the Union market.
Information and communication	8.1 Data processing, hosting and related activities	1. The activity has implemented all relevant practices listed as "expected practices" in the most recent version of the European Code of Conduct on Data Centre Energy Efficiency <sup>307</sup> , or in CEN-CENELEC document CLC TR50600-99-1 "Data centre facilities and infrastructures - Part 99-1: Recommended practices for energy management" <sup>308</sup> . The implementation of those practices is verified by an independent third-party and audited at least every three years. 2. Where an expected practice is not considered relevant due to physical, logistical, planning or other constraints, an explanation of why the expected practice is not applicable or practical is provided. Alternative best practices from the European Code of Conduct on Data Centre Energy Efficiency or other equivalent sources may be identified as direct replacements if they result in similar energy savings. 3. The global warming potential (GWP) of refrigerants used in the data centre cooling system does not exceed 675.

## References

COMMISSION DELEGATED REGULATION (EU) .../...of 4.6.2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI\\_COM:C\(2021\)2800&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:C(2021)2800&from=EN)

What is the EU Taxonomy? EU Taxonomy Regulation Quickguide to the New Standard for Green Transition <https://ramboll.com/-/media/files/rm/eu-taxonomy-quick-guide.pdf?la=en>

EU Taxonomy Criteria. <https://ec.europa.eu/sustainable-finance-taxonomy/documents/taxonomy.xlsx>

FAQ: What is the EU Taxonomy and how will it work in practice? [https://ec.europa.eu/info/sites/default/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/sustainable-finance-taxonomy-faq\\_en.pdf](https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/sustainable-finance-taxonomy-faq_en.pdf)

EU Taxonomy info. Application of the EU Taxonomy for Financial Institutions. <https://eu-taxonomy.info/info/eu-taxonomy-for-financial-institutions>

## Task Force on Climate-related Financial Disclosure (TCFD) and Energy Efficiency for Financial Institutions

The Task Force on Climate-Related Financial Disclosures (TCFD) was created in 2015 by the Financial Stability Board (FSB) to develop consistent climate-related financial risk disclosures for companies, banks, and investors in providing information to stakeholders.

This document summarizes the main findings of the TCFD Framework<sup>131</sup> and TCFD Playbook<sup>132</sup> that were created to assist in the development of a financial institution's TCFD report. Moreover, it presents findings from the latest TCFD 2021 Status Report.<sup>133</sup> Energy efficiency is barely mentioned in the TCFD documents analysed. When analysing practical examples of TCFD such as the one of the EBRD and, especially Fifth Third, it was found that energy efficiency issues are discussed under the Strategy / Climate-related risks and opportunities disclosure.

<sup>131</sup> <https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf>

<sup>132</sup> <https://www.unepfi.org/wordpress/wp-content/uploads/2020/09/UNEP-FI-IIF-TCFD-Report-Playbook.pdf>

<sup>133</sup> [https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Status\\_Report.pdf](https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Status_Report.pdf)

Table 1 shows the TCFD recommended disclosures, which allow comparability between institutions, while making it explicitly clear which disclosures are being implemented.

**Table 1. Elements of Recommended Climate-Related Financial Disclosures.**

TCFD elements	TCFD recommended disclosures
<b>1. Governance</b> The organization's governance around climate-related risks and opportunities	a. Board oversight
	b. Management's role
<b>2. Strategy</b> The actual and potential impacts of climate-related risks and opportunities for the organization's businesses, strategy and financial planning	a. Climate-related risks and opportunities
	b. Impact on the organization's businesses, strategy and financial planning
	c. Resilience of the organization's strategy
<b>3. Risk management</b> The processes used by the organization to identify, assess and manage climate-related risks	a. Risk identification and assessment processes
	b. Risk management process
	c. Integration into overall risk management
<b>4. Metrics and targets</b> The metrics and targets used by the organization to assess and manage relevant climate-related risks and opportunities	a. Climate-related metrics in line with strategy and risk management process
	b. Scope 1, 2, 3 greenhouse gas (GHG) metrics and the related risks
	c. Climate-related targets and performance against targets



Below, the main elements of the TCFD are described. These include, the introduction and report overview, governance, strategy, risk management, and metrics and target. Finally, we conclude by providing two examples of practical implementation of TCFD.

### 1. Introduction and report overview

The introduction should explain to readers why the company has prepared and published this report and how the information within is decision-useful to stakeholders. It should explain why climate change is important to the sector and the company, explain why the report has been prepared, identify the intended stakeholder audience(s) for the report. At the end of the introduction, it can be useful to briefly summarize the specific TCFD disclosures covered by the report.

### 2. Governance

It defines, in the form of a board-approved charter and governing policies, the roles, responsibilities and decision-making mechanisms by which a financial services firm defines and delivers on its climate-related commitments to key stakeholders such as customers, investors and the communities in which the institution operates. The Governance disclosure should make it clear to all key stakeholders and other interested parties the commitments the institution has made and how they intend to realize them.

#### 1. Board oversight

This disclosure provides (i) a clear description of the board's structure and experience relating to climate change and (ii) details the process by which the board is informed of and manages climate-related risks and opportunities.

#### 2. Management's role

This disclosure provides (i) a clear description of management’s organizational and reporting structure, (ii) details the process by which management is informed of and manages climate-related risks and opportunities and (iii) should detail the methodology for incentivizing management’s role in managing climate-related risks.

### 3. Strategy

The Strategy pillar of the TCFD disclosures is intended to provide important insight to the type, magnitude and time horizon of climate-related exposures. It is also expected to provide information on the nature and potential impact of the risks and opportunities associated with the exposures.

#### 1. Climate-related risks and opportunities over the short, medium and long term

This disclosure (i) details the time horizons used by the organization, as well as their justification, (ii) details the methodology and processes used to identify and assess climate-related risks and opportunities.

#### 2. Impact on business, strategy and financial planning

This disclosure (i) details the process and methodology used to identify impacts of climate-related risks and opportunities, (ii) and details how the organization manages the impacts of climate-related opportunities and risks.

#### 3. Scenario analysis and resilience strategy

This disclosure (i) briefly details the purpose, assumptions, approach, and results of scenario analysis activities, and (ii) incorporates results from the scenario analysis into the organization’s resilience strategy.

### 4. Risk management

The risk management disclosures address how the enterprise identifies, measures, monitors, manages and reports climate-related risks. They provide important insight to how the climate-related risks are integrated within the firmwide risk management framework.

#### 1. Process for identifying and assessing risks

This disclosure briefly summarizes the enterprise’s current risk assessment framework and introduces climate-related risks.

#### 2. Process for managing risks

This disclosure discusses how climate-related risks are managed and prioritized both independently and relative to other risks.

#### 3. Integration into overall risk management

This disclosure discusses how climate-related risks are integrated into the enterprise’s risk management framework.

### 5. Metrics and targets

Financial services firms’ metrics and targets provide investors and other stakeholders important insight on how the capital allocation to carbon intensive sectors is changing. Coalitions aiming to introduce science-based targets for portfolios rely on clear quantification of capital allocation to carbon-intensive sectors. Metrics and targets are the mechanism for measuring and disclosing progress versus the commitments made to stakeholders with respect to managing and mitigating the impact of climate change.

#### 1. Metrics

This disclosure summarizes the climate-related metrics listed earlier in the report and introduces new metrics as relevant. Additionally, this section contextualizes climate-related metrics in relationship to other metrics, linking financial indicators when possible.

#### 2. Scopes I, II and III emissions

This section discloses scope I, II and III GHG emissions.

#### 3. Targets

This disclosure item pertains to targets for climate-related risks and opportunities. Where appropriate, targets should be set relative to metrics described in the preceding disclosures.

From the TCFD status report 2021 – TCFD 2021 year in review.



### ***Examples of TCFD Reports: EBRD and Fifth Third***

The *EBRD* became a supporter of the TCFD in May 2018 and was the first multilateral development bank to sign up to the initiative. The TCFD report<sup>134</sup> outlines the Bank's ambition in relation to climate policy, including its new Green Economy Transition target and plans for alignment with the goals of the Paris Agreement. Energy efficiency and climate change feature among the Bank's strategic and operational priorities (climate-related opportunities). However, with particular reference to energy efficiency, no details are provided.

In 2019, *Fifth Third* became the first regional bank to publish a Climate-related Financial Disclosure Report following the recommendations of the TCFD. Energy efficiency features among the Bank's strategic and operational priorities (climate-related opportunities). Energy efficiency opportunities are defined as investments or financing related to energy efficiency projects and technologies that are designed to enable energy and emissions reductions, such as energy efficient heating (excluding those powered by fossil fuels) and cooling. Energy efficiency is considered a core component of sustainability and climate emissions reduction. Fifth Third has reduced energy use by 25%. They invested in LED lighting, HVAC upgrades and building controls and made improvements that allowed them to use less space. They have expanded the sustainability of new construction, renovation and facilities-related operations and maintenance practices. It is stated that they will continue to assess new technologies across our portfolio to manage their energy needs and improve the performance of their buildings. "We anticipate clients will pursue energy efficiency projects in their transition to a low-carbon future and we will support them in those endeavors."

<sup>134</sup> <https://www.ebrd.com/tcfid-report-2020.pdf>

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## Environmental, Social, and Governance (ESG) frameworks for Financial Institutions and energy efficiency first

The objective of ESG reporting is to report on relevant environmental, social, and governance information.

The Environmental category encompasses elements such as climate change mitigation, greenhouse gas (GHG) emissions reduction, and natural resource management.

The Social pillar includes elements such as poverty alleviation, data privacy and security, employee engagement, and diversity, equity, and inclusion best practices.

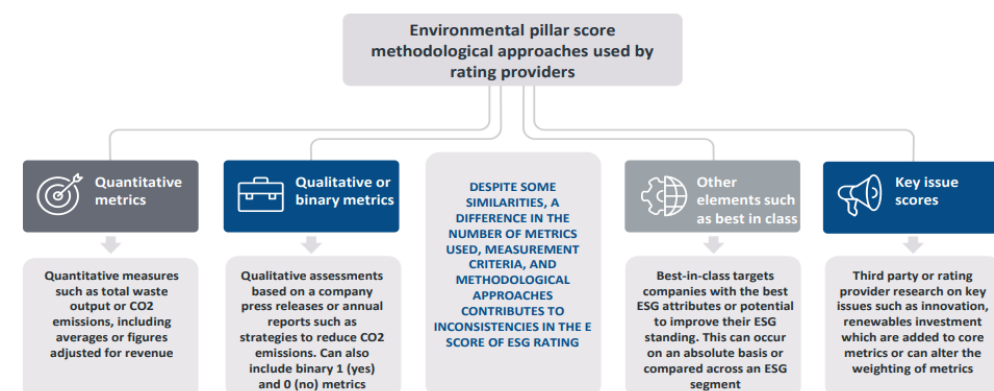
Governance includes the policies, procedures, and structures that are in place to support organizational accountability, such as executive pay, board diversity, and fair tax strategy.

ESG reporting can be done through sustainable reports, financial statements, executive summaries, or stand-alone ESG reports. This acts as a way to encourage organizations to adopt sustainable practices and provides stakeholders with the relevant information they need to make an informed decision about their investments of whether or not support an organization.

**ESG considerations are unique to each organization, therefore there is no standard framework or approach that is a one-size-fits-all solution, making it hard if not impossible to compare ESG reporting and performance across organizations** (OECD, 2020). Moreover, there is still no regulatory definition for ESG criteria, rating agencies use a wide variety of definitions for the environmental, social and governance aspects they actively consider (Sipiczki, 2022). While environmental pillar scores have the potential to unlock information on organizations' exposure to climate transition, the extent to which these factors are captured in ESG ratings by leading rating providers (e.g., [Sustainalytics](#)) is heavily dependent on methodologies and calculation of metrics that vary substantially across rating providers (OECD, 2021).

The figure below shows the mix of approaches used by rating providers to score the environmental pillar (OECD, 2021).





Source: OECD authors' illustration

Given the difficulty in reporting metrics related to sustainability, different stakeholders have called for the need to have more standardised reporting guidelines. For example, in December 2020, five leading framework and standard-setting organizations—CDP, CDSB, GRI, IIRC and SASB—co-authored an illustration of how their current frameworks, standards and platforms, along with the elements set out by the Task Force on Climate-related Financial Disclosures (TCFD), can be used together to provide a running start for development of global standards that enable disclosure of how sustainability matters create or erode enterprise value (CDP, CDSB, GRI, IIRC and SASB, 2020). This type of reporting is distinct from sustainability reporting, which is designed to illuminate an organization's most significant impacts on the environment, people and economy.

The need and pressure for higher quality ESG disclosure standards are thus increasing but there is still some way to go before widely accepted solutions are implemented. On a positive note, the debate on proper ESG disclosures is shifting from its initial focus – lack of disclosure – to the more sophisticated issue of quality of disclosure (Scope, 2021).

### **Most popular ESG frameworks**

#### **SASB**

According to a joint statement from SASB and GRI, SASB provides "industry-specific standards identify the subset of sustainability-related risks and opportunities most likely to affect a company's financial condition (i.e., its balance sheet), operating performance (i.e., its income statement) or risk profile (i.e., its market valuation and cost of capital). SASB metrics cover 77 standards that are divided into five broad "sustainability dimensions": Environment; Social Capital; Human Capital; Business Model & Innovation; Leadership and Governance.

#### **Global Reporting Initiative (GRI)**

The Global Reporting Initiative (GRI) is the independent international organization that helps businesses, governments, and other organizations understand and communicate their impacts. The GRI Standards are the world's most widely used for sustainability reporting. According to GRI, "organizations can either use the GRI Standards to prepare a sustainability report in accordance with the Standards, or they can use selected Standards, or parts of their content, to report information for specific users or purposes, such as reporting their climate change impacts for their investors and consumers."

#### **Carbon Disclosure Project (CDP)**

Over 6,800 companies use Carbon Disclosure Project (CDP) to verify their carbon emissions. CDP is a nonprofit that surveys respondents, verifies results, and then issues ratings for companies that do the best job reporting on greenhouse gas emissions and water usage. It does not provide specific guidance on what to report on or how to measure it, but taking their survey can help ESG leaders think about aspects of their business they can measure and improve upon.

### Science Based Targets

The Science Based Targets initiative (SBTi) mobilizes companies to set science-based targets and boost their competitive advantage in the transition to the low-carbon economy. The initiative is a collaboration of CDP, WRI, WWF, and the UN Global Compact. It launched the world's first "Net Zero Standard," which gives companies science-based certification of their net-zero targets.

### UN Global Compact

UN Global Compact (UNGC) is as a network for companies who are committed to helping achieve the SDGs. As part of this, UNGC does ask companies to report on progress towards the SDGs, and provides the use of its Value Driver Model to help companies show the financial benefits of helping achieve the SDGs.

### B Impact Assessment

B Labs has popularized the idea of the Benefit Corporation, which is a new type of legal entity that exists explicitly for and publicly reports on social and environmental impact. B Corporation status is earned upon completing, and scoring high enough, on the B Impact Assessment. However, the B Impact Assessment is not an ESG report or framework, but rather an overall approach to corporate social responsibility. In fact, it may be useful to think of the B Corporation structure as the only CSR framework that provides guidance, evaluation, and audit, all in one.

### Task Force for Climate Related Disclosures (TCFD)

The Task Force for Climate-Related Financial Disclosures (TCFD) helps organizations across the globe articulate how ESG performance is most likely to materially impact future financial performance and value creation. Broken into four pillars, TCFD addresses disclosure requirements related to: Metrics & Targets: What are the measurements in assessing material climate-related risks and opportunities?; Risk Management: How does the organization define, assess, and manage climate-related risks?; Strategy: What is the tangible material impacts of climate-related risks and opportunities on the whole business, including strategy and financial planning?; Governance: How does the organization's governance structure address climate-related risks and opportunities?

While different companies/organizations combine multiple frameworks in different ways, here is a helpful way to think about how to approach them:

- SASB tells companies what ESG factors they should measure and report on to investors.
- GRI tells companies how to measure and report on those metrics.
- CDP is an accompanying framework specifically for carbon, water, and forest related reporting
- Science Based Targets are an accompanying framework specifically for Net-Zero standards.
- The UN Global Compact helps companies set targets to report on that are in line with the Sustainable Development Goals (SDGs).
- The B Impact Assessment helps companies identify all the ways they can improve CSR performance (not limited to ESG).
- TCFD is explicitly designed to address climate risks to the business, falling squarely within the 'E' of ESG reporting.

**Both reporting standard framework and rating providers use a long list of different environmental pillar metrics. Energy efficiency is often not included in the list of metrics. TCFD seems to be the one where energy efficiency is more explicitly mentioned.** See Annex A for a comparison of environmental pillar metrics across selected rating providers and reporting standards frameworks ([Boffo et al., 2020](#))

**Below, different types of ESG reporting frameworks from various financial institutions are provided.**



### **European Investment Bank – ESG framework**

- [EIB Group Sustainability Report 2020](#)
- [EIB Group 2020 Sustainability reporting disclosures in accordance with the GRI Standards](#)
- [EIB 2020 Sustainability Disclosures in accordance with SASB Framework](#)
- [EIB Group Task Force on Climate-related Financial Disclosures \(TCFD\) Report 2020](#)

### **European Bank and Reconstruction Development – ESG framework**

- [Sustainability report 2021](#)
- [TCFD report 2019](#)

### **World Bank – ESF (Environmental and Social framework)**

- [The World Bank Environmental and Social Framework](#)

### **European Investment Fund – ESG framework**

- [EIF Environmental, Social and Corporate Governance \(ESG\) Principles](#)

### **Barclays – ESG framework**

- [Barclays – Environmental, Social and Governance \(ESG\) 2021 Reporting Framework](#)

### **BNP Paribas – ESG framework**

- [ESG scoring framework](#)

### **HSBC– ESG framework**

- [Annual Report and Accounts 2021](#)
- [Advancing HSBC's transition to net zero ambition](#)
- [ESG Datapack 2021](#)
- [Financed Emissions Methodology](#)

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CEN CENELEC European Standards for the SDGs: CEN and CENELEC developed a new mapping tool <https://www.cencenelec.eu/news-and-events/news/2022/press-release/2022-05-02-sdgs-mapping-tool/>

## Appendix F Table of tools across asset classes, financial instruments and financial institutions

Asset class or financial instrument	Financial institutions involved	Existence of environmental / energy efficiency financial risk assessment methodologies?	Existence of public methodologies for assessing net zero progress?	Methodologies' integration of energy efficiency?	Drivers for investor / investee / asset to improve energy efficiency / net zero?	Alignment of methodologies and drivers with EU public policies and regulations?
Residential mortgages						
Commercial mortgages						
Asset backed securities (i.e. RMBS, CMBS, covered bonds)						
Asset backed security investment funds						
Private company financing						
Direct lending funds						
Private debt funds						
Infrastructure debt funds						
Real estate debt funds						
Infrastructure private equity funds						
Private equity growth / buy-out funds						
Energy efficiency project finance funds						
Real estate private equity funds						
Publicly listed real estate companies						
Publicly listed infrastructure companies						
Listed real estate funds						
Listed infrastructure funds						
Listed companies						
Actively managed public equity funds						
Passively managed public equity funds						
Actively managed debt funds						
Passively managed debt funds						
Sovereign bonds						

Asset class or financial instrument	Financial institutions involved	Existence of environmental / energy efficiency financial risk assessment methodologies?	Existence of public methodologies for assessing net zero progress?	Methodologies' integration of energy efficiency?	Drivers for investor / investee / asset to improve energy efficiency / net zero?	Alignment of methodologies and drivers with EU public policies and regulations?
Actively managed sovereign bond funds						
Passively managed sovereign bond funds						
Insurance underwriting						
Financial institutions						
Public sector banks						
Private sector banks						
Pension funds						
Insurance companies						
Asset managers						

## Appendix G Draft contents for 'pre-adoption' guidance on energy efficiency first for financial institutions

The following is a proposed contents list for 'pre-adoption' guidance on energy efficiency first. As discussed in the text the specific contents and text should be tailored to individual sub-sectors and/or asset classes and ideally the development of such specific guidance should be in partnership and through sector specific associations.

### Contents

- Why we need to improve EE.
- Why *your* financial institution needs to adopt EE1st.
- How to adopt EE1st.
- The three levels of action needed.

### Why we need to improve energy efficiency.

- What is EE – types of investment that improve EE
  - EE specific
  - 'normal' investments that achieve higher than BAU levels of EE
- Improving EE is an essential part of decarbonisation which is being under-invested in – the flow of investment into EE needs to be increased
- Improving EE can bring multiple other benefits including: improved energy security; improved health and well-being etc.
- EU policy is EE1st
- Increasing the flow of capital into EE requires purposeful, systematic actions by all FIs
- 

### Why *your* financial institutions should adopt EE1st

- Business opportunity
- Risk reduction:
  - Operational – improves client cash flow
  - Stranded asset risk
  - Transition risks
- Need to decarbonize portfolios driven by regulations & ESG
- Compliance with:
  - Taxonomy
  - TCFD
  - SFDR
  - Other
- Improves ESG performance

### How to adopt EE1st

- There is a need to address three levels
  - Policy and governance
    - EE1st needs to be set in the context of wider commitments e.g. sustainability policy and non-financial reporting requirements
    - Need for an explicit policy promoting EE
    - Identify specific metric(s) for EE

- Need to identify and measure risks from current levels of EE and how these link to non-financial reporting requirements
- Identify opportunity to improve EE and benefits including risk reduction
- Identify requirement for tools to support EE1st and resource their development and adoption
- Portfolio
  - Develop tool(s) for measuring EE performance at portfolio level, identifying pathways for improvement, and reporting on progress
- Deal
  - Develop tools to support origination (for internal use and/or customers), deal due diligence, deal approval and on-going measurement and verification (asset management).

## Appendix H Draft contents for guidance on operationalizing energy efficiency first within financial institutions

**This appendix sets out a draft contents list on a guide to how financial institutions should operationalise the energy efficiency first principle. As described in the main text, any guide should be tailored to the individual sub-sector or asset class for which it is intended.**

### Introduction

Having accepted the benefits of adopting energy efficiency first this guide sets out the key considerations in operationalising it.

The energy efficiency first principle needs to be incorporated into different levels within the organisation:

1. Policy and governance level
2. Portfolio level
3. Deal level

### Policy and governance level

#### *Links to wider commitments*

The energy efficiency first principle needs to be embedded into the wider organisational policy commitments to sustainability and Paris alignment.

- What specific policy commitments need to be modified in order to adopt EE1st?

Example: EBRD Green Economy Transition 2.0

#### *Investment / lending policy (policies)*

The energy efficiency first principle needs to be embedded into the investment policy.

- What kinds of assets does the FI invest into or lend to?
- Does the current investment policy specifically include energy efficiency commitments/targets?
- What changes are needed to investment / lending policy (policies)?

Examples:

- We will specifically identify energy efficiency opportunities in all proposed investments.
- We only lend for buildings with an EPC of B or above.

### *Metrics*

The current level of energy efficiency needs to be identified and appropriate metrics selected.

- What are the appropriate energy efficiency metrics for the type(s) of assets (investments / loans) we have?

Examples:

- EPC
- Energy per m<sup>2</sup> (for buildings – corrected for climate zone)
- Energy intensity (for industry)
- Energy use per € invested / lent

### ***The potential for improved energy efficiency and target setting***

The potential for improving energy efficiency needs to be identified and targets agreed. The potential and targets will be very sector specific and rely on a combination of technical and economic factors, as well as judgement on the appropriate targets.

- What is the potential for improved energy efficiency amongst the types of assets that we finance?

Examples:

- We have a target of >50% of our portfolio being certified EPC B or above, NABERS UK, or BREEAM by 2025 and 90% by 2030.

### ***Risk analysis and non-financial reporting***

The risks resulting from current levels of energy efficiency within the portfolio need to be assessed, along with the risks of not improving levels of energy efficiency. Risks to be considered include: non-payment risk, stranded asset risk, and transition risk.

- How do we measure the risk from the existing levels of energy efficiency within our portfolio(s) and the risk of not improving it?
- How does energy efficiency feed into our non-financial reporting e.g. Taxonomy, TCFD and ESG?

### ***Safeguards***

Safeguards should be established to ensure policies and procedures regarding EE1st are complied with.

- What are the appropriate safeguards that need to be put in place to ensure that all steps are carried out to the required standards?

Examples:

- World Bank Environmental and Social Standards
- EIB Environmental and Social Standards
- EBRD Independent Project Account Mechanism

### **Portfolio level**

Tools need to be developed or adopted that use the appropriate metrics referred to above need to measure and track energy efficiency performance for a given portfolio.

- What tools can be used to measure and track energy efficiency across a portfolio?

Examples:

- Verco tool
- SkenData

### **Deal level**

Changes are needed to the project development and deal process to ensure energy efficiency is considered. Specific tools are needed to assist originators and customers, ensure due diligence and approval processes take into account energy efficiency first, and then measure EE performance during the life of the asset.

- What tools are needed to help originators identify energy efficiency opportunities?
- What tools are needed, and can either be developed or promoted, to assist customers to identify and incorporate energy efficiency opportunities?
- What tools are needed to ensure energy efficiency first is considered during due diligence?
- What tools are needed to ensure on-going measurement of EE performance during the life of the asset?

Examples:

- EIB Green Eligibility Tool
- EBRD Green Technology Selector
- ING REF app
- CREFC Europe due diligence checklist



## Appendix I. Extracts from CREFC Europe due diligence questionnaire (energy questions)

<p>Section 1. Energy Performance Certificates</p>	<p>Relevant to all types of financing</p> <ul style="list-style-type: none"> <li>- does the borrower set minimum EPC targets for existing or new build developments? If so:</li> <li>- please specify the targets?</li> </ul> <p>Relevant to existing buildings only</p> <ul style="list-style-type: none"> <li>- To what extent does the borrower monitor adherence to minimum energy efficiency standards (e.g. Minimum Energy Efficiency Standards Regulations (MEES) in the UK)? If yes:</li> <li>- How robust are the borrower's protocols to manage its real estate portfolio to ensure compliance with minimum standards on an ongoing basis?</li> <li>- How proactively does the borrower address underperformance if minimum standards are not met?</li> <li>- Does the borrower meet the qualification criteria under any energy savings scheme (e.g. UK Energy Savings Opportunity Scheme (ESOS))</li> </ul>
<p>Section 2 Energy performance</p>	<p>Relevant to all financing</p> <ul style="list-style-type: none"> <li>- To what extent does the borrower plan to invest in any on-site renewable energy generation (generally, and at the real estate to which the proposed financing relates)?</li> <li>- To what extent does the borrower plan to invest in energy efficient equipment/systems within properties (generally, and at the real estate to which the proposed financing relates)?</li> </ul> <p>Relevant to existing buildings only</p> <ul style="list-style-type: none"> <li>- To what extent does the borrower plan to invest in any on-site renewable energy generation (generally, and at the real estate to which the proposed financing relates)?</li> <li>- To what extent does the borrower plan to invest in energy efficient equipment/systems within properties (generally, and at the real estate to which the proposed financing relates)?</li> <li>- To what extent has the borrower engaged with a third party to conduct energy efficiency audit of the property/ies? If so:</li> <li>- Have any energy performance improvements been proposed within the asset plan? If so, what?</li> <li>- To what extent has the borrower implemented a framework to monitor and improve operational energy performance (e.g. EN ISO 50001) (generally, and at the real estate to which the proposed financing relates)?</li> <li>- To what extent has the borrower factored in retrofit requirements into its current lease profile, especially units let over a longer term and multi-let buildings (generally, and at the real estate to which the proposed financing relates)?</li> <li>- When granting occupational leases, how insistent is the Borrower on including energy efficiency provisions substantively set out in the form set out in the Lease Code/Model Lease?</li> </ul>

Section 3 covers green building certifications.	
Section 4 Engaging with occupiers	<p>Relevant to existing buildings only</p> <ul style="list-style-type: none"> <li>- How comprehensive are the Borrower's systems for monitoring underlying occupier efficiency?</li> <li>- When providing shell units to occupiers, how successful are the borrower's minimum fit out standards in helping ensure occupiers create energy efficient fit outs of lettable areas?</li> <li>- To what extent does the borrower offer occupiers solutions to help them address their own carbon and energy efficiency goals (for example, electricity supply from renewable providers, systems to monitor rented floorspace, such as separate digital metering, etc)?</li> </ul> <p>Relevant to existing multi-let properties only</p> <ul style="list-style-type: none"> <li>- How commonplace are carbon and energy efficiency related clauses in the borrower's contracts with building vendors (for example, suppliers of building management services, catering firms, waste management firms, etc)?</li> </ul> <p>For the borrower's multi-let properties, how prevalent are building management groups (i.e. groups set up by borrower with owners/ building managers/ occupiers to agree common carbon and energy efficiency targets, manage energy and waste, operate HVAC more efficiently, etc)?</p>
Section 5 covers engaging with the local community.	
Section 6 Retrofit / potential for improvement	<p>Relevant to all types of financing</p> <ol style="list-style-type: none"> <li>1) To what extent has the borrower completed (or committed to complete) any retrofit works to reduce the energy performance (sic) of the real estate to which the financing relates (or other real estate in its portfolio)? Examples of this can include:</li> <li>2) Lighting: sub-metering to improve monitoring, install LED lights, lighting activated by motion sensors (ensure set to appropriate timings)</li> <li>3) Heating: replace boilers with condensing or electric boilers, check boiler load and insulate plant room (boiler shell, pumps, pipes), monitoring boiler operation outside normal occupier hours</li> <li>4) Air: windows, roof, ventilation, cooling, heat recovery</li> <li>5) On-site energy generation: solar panels, wind turbine, bioenergy</li> <li>6) Water reduction processes: water efficient taps and showers, greywater recycling systems and rainwater harvesting goods</li> <li>7) Waste minimisation and greywater recycling</li> <li>8) Does the borrower take steps to ensure that retrofit standards align to the EU Taxonomy?</li> </ol>
Section 7 Sourcing of plant and materials	<p>Part D Borrower's approach to climate change</p> <p>Section 1 Governance and reporting</p> <p>Addresses several governance questions related to energy efficiency including:</p> <ul style="list-style-type: none"> <li>- How comprehensive are the borrower's energy, carbon or any other climate change policies?</li> </ul>

	<ul style="list-style-type: none"> <li>- How comprehensive are the borrower's resolution processes to address underperformance versus its carbon and energy performance targets?</li> <li>- To what extent does the borrower currently prepare an annual report providing energy use, greenhouse gas emissions and energy efficiency disclosures (e.g. in relation to the UK government's Streamlined Energy and Carbon Reporting (SECR) policy)?</li> <li>- Does the borrower obtain third party verification or assurance of the carbon and energy performance of its assets? If so, at what frequency?</li> <li>- Does the borrower disclosure data to benchmarks (e.g. GRESB, or BBP Real Estate Environmental Benchmark in the UK) with regard to the carbon and energy performance of its assets? If so, at what frequency?</li> </ul> <p>Section 2 covers net zero carbon emissions by 2050.                      Questions directly relevant to energy efficiency include:                      To what extent has the borrower mapped out a transitional pathway to meeting net zero by 2050, or sooner?                      The tool includes metrics covering various aspects including energy performance.</p>
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