From scenarios to action – developing science based financing guidelines

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Abstract

In recent years, financial institutions and their role in the transition towards global emission reduction targets have gained attention in the climate change debate. Initiatives like the energy efficiency finance institutions group (EEFIG) have highlighted the importance of financial institutions. The concrete operationalisation of this topic is however a major challenge. In our paper we will present the approach chosen by the German Development Bank (KfW), which was assisted by the authors in crafting a comprehensive and compatible strategy aligning with the Paris Agreement for KfW as part of its transition process.

Based primarily on IEA's Net Zero Emissions by 2050 scenario, financing guidelines for various sectors have been developed, which regulate new financing by the bank. These guidelines mainly use technical criteria for the individual financing to ensure that they are in line with a 1,5°C compatible transition pathway. As the guidelines consider the lifetime of the assets and not only the financing lifetime, the requirements in the sectors are ambitious and require the bank not to finance certain technologies at all. In our contribution, we present the underlying system of the KfW guidelines and provide an overview of currently implemented guidelines. Finally, we discuss the approach chosen in context to possible other approaches.

KfW's experience in implementing financing guidelines with a more focused technological approach demonstrates how guidelines can be developed to align with Paris Agreement objectives in the future. The approach differs from other efforts that typically take the form of either standardized frameworks or monitoring activities.

Introduction

International climate protection agreements have historically been led by nation states, reaching consensus at conferences such as the UN Conference on Environment and Development in Rio de Janeiro in 1992 and subsequent agreements like the Kyoto Protocol of 1997 and the Paris Agreement of 2015. National climate reporting follows the territorial principle, meaning that emission sources within a country's borders are recorded and reported. This may have led to more attention being paid to emitters such as households, mobility and industry rather than the banking sector in the climate protection debate. However, it is also important to recognize the role of the this sector as a key player in solving the climate problem. As collectors and distributors of capital, banks (and other financial institutions) play an active role in shaping economic change. Through their lending activities, they determine which economic activities receive financing and which do not. This economic power is needed to achieve the Paris climate goals.

Up until now, sustainable finance regulations have mainly concentrated on mitigating the negative effects of the climate crisis on banks and ensuring financial stability. The EU's Taxonomy Regulation (2020/852) and the European Green Bond Standard are recent policy exceptions to this focus, but their effectiveness in addressing the climate crisis is uncertain. Thus, for banks to truly make a meaningful impact in addressing the climate problem, it is necessary to broaden this focus. It becomes essential to ascertain how much carbon emissions are produced through capital provided by banks and determine ways in which their actions can align with the objectives set forth in the Paris Agreement. In Germany, the Climate Protection Act provides a framework for achieving the Paris climate goals, but it does not impose specific requirements on banks. However, German Banks have made commitments to fulfill

their climate policy responsibility by voluntarily pledging to achieve the goals of the Paris Climate Agreement (Klima-Selbstverpflichtung des deutschen Finanzsektors 30.06.2020).

KFW: BACKGROUND TO THE FINANCING GUIDELINES

KfW Group (KfW) is a major German state-owned financing and development bank founded in 1948 as part of the Marshall Plan. Therefore, the bank consistently plays a transformative and mission-orientated role in the German economy. Typical areas of KfW's activities are the promotion of small and medium enterprises and start-ups, the financing of infrastructure projects and housing construction as well as the financing of energy-saving technologies and municipal infrastructure. Other areas of activity include educational loans as well as the promotion of investments and reform processes in developing countries and emerging economies. In 2023, KfW recorded a new business volume of EUR111.3 billion, of which almost 70 % are domestic promotion in Germany. The share of new commitments in the export and project finance sector is around 20 % and of commitments in developing countries and emerging economies around 10 %.

The bank's purpose with regard to sustainability is the transformation of the economy and society with the aim of improving economic, environmental and social living conditions around the world. In line with this, the bank aims to actively support the 1.5 °C climate target and codify this in operational guidelines for new financing. For this reason, KfW introduced Paris-compatible financing guidelines for selected emission-intensive sectors for the first time in mid-2021. They serve to steer new business in line with the temperature target of the Paris Climate Agreement and systematically strengthen KfW's group-wide transformation contribution. The guidelines do not cover already existing portfolios.

Literature

HOW AMBITIOUS HAVE BANKS BEEN SO FAR?

Numerous articles in literature discuss what banks are doing to help achieve the Paris climate targets and whether their contribution is appropriate. Some approaches involve quantitative analysis of banks' portfolios and investments to determine alignment with Paris Agreement goals, cf. (Beltran et al. 2023; FinanceMap 2022; Oil Change International et al. 2023). Other approaches focus on qualitative assessment through analysing sustainability reports, climate change statements, and strategy papers published by the banks themselves, which in some cases is supplemented by self-collected data through surveys and interviews, cf. (Deloitte 2022; Duderstadt 2021; Kopp et al. 2021; ShareAction 2022). Wilhelm et al. (2023) summarise that up to date most studies conclude that the banks' current targets and measures are not adequate to achieve the Paris climate goals. There is a lack of ambitious targets and effective, operational measures, and there is also room for greenwashing.

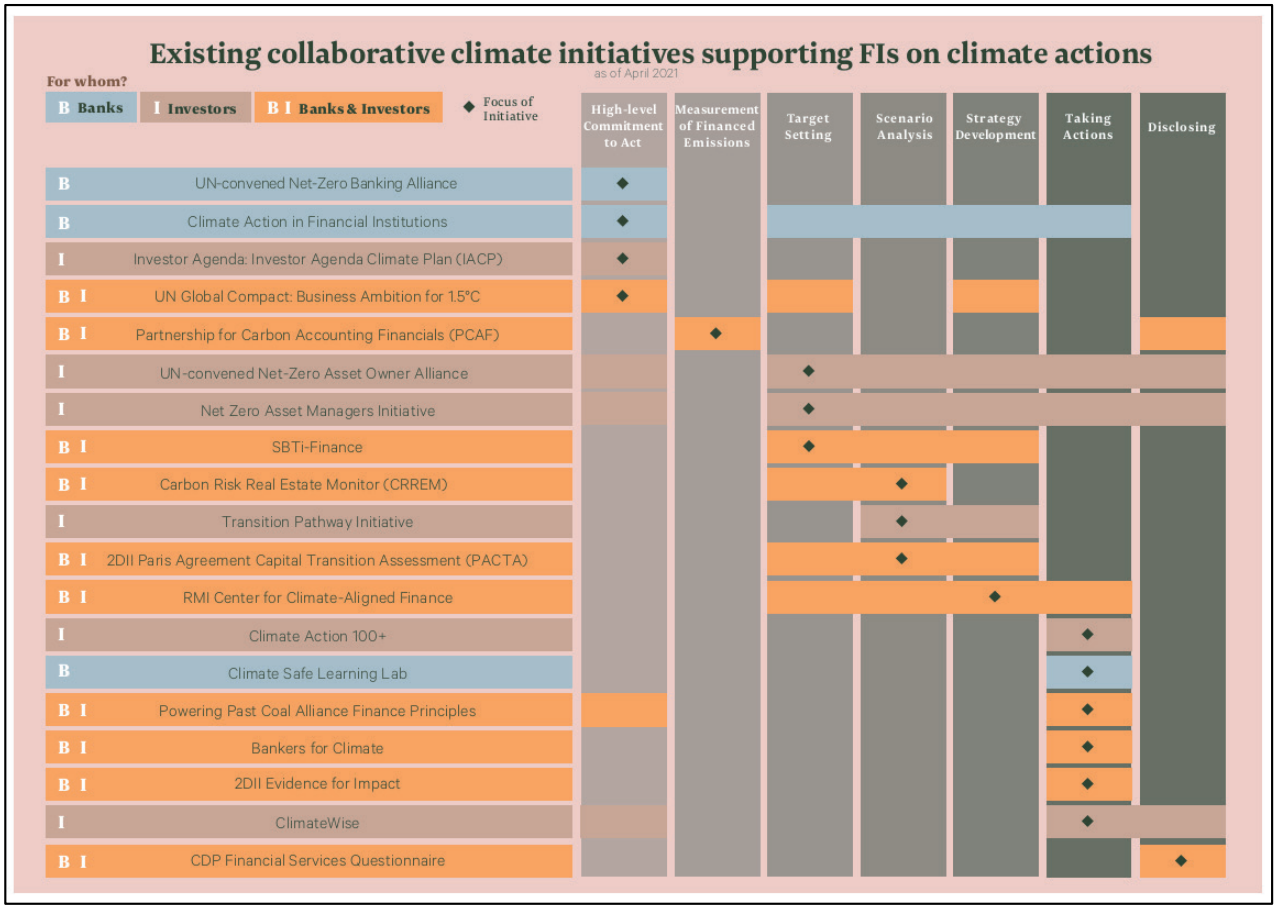


Figure 1. Global overview of existing initiatives to assist financial institutions in addressing climate change. Source: PCAF (2022).

WHAT INITIATIVES EXIST?

Numerous initiatives have emerged to assist financial institutions in addressing climate change. Here, monitoring of financed emissions, i.e. emissions caused by financial services, investments and loans, is becoming more and more important. The Partnership for Carbon Accounting Financials PCAF (2022) provides an overview and categorisation of existing initiatives, see Figure 1. These initiatives include the development of methods and standards for the monitoring of financed emissions (carbon accounting) as well as for the development of strategies compliant with Paris climate goals.

In an overview of the situation for Germany, Wilhelm et al. (2023) find that some German banks are already using the PCAF or PACTA standard (PACTA is the Paris Agreement Capital Transition Assessment). The Partnership for Carbon Accounting Financials (PCAF) provides a standardized guideline for calculating financed emissions. The PCAF guidelines align with the requirements of the GHG Protocol for companies' value chain and investment reporting standards. Its methodological approach is grounded in financial mathematics, examining capital investments in companies to determine associated emissions. Emission data can be sourced from company reports or calculated based on physical activities or economic indicators within specific industries (cf. PCAF (2022)). Overall, PCAF emphasizes a broad and flexible methodological framework while focusing on greenhouse gas footprint of assets. The PACTA approach offers a more tangible implementation focusing on thorough monitoring and control. It conducts an analysis of the portfolio by considering technology roadmaps from various transformation scenarios, including those from the Joint Research Centre of the European Commission and the International Energy Agency (IEA), to derive emissions budgets for different sectors. PACTA then compares these with production plans of companies in the portfolio over a five-year period using specific monitoring indicators to assess progress towards achieving the 2 °C target (cf. PACTA (2022)). For instance, when investing in the automotive industry, it evaluates whether planned production aligns with specified trajectory derived from transformation scenarios based on factors like types of cars produced such as electric or petrol vehicles.

Our contribution

Initiatives currently in place to assist banks in addressing climate change tend to be primarily methodological frameworks or concentrate on particular issues (such as coal phase-out). Detailed, specific strategies for effective governance aligned with the Paris Agreement are still not widely available. We present the establishment of a comprehensive and compatible strategy aligning with the Paris Agreement for various sectors, which was crafted for KfW as part of its transition process.

Data and methodology

DATA

The central data basis for developing the financing guidelines is the Net Zero Emissions by 2050 Scenario (NZE), which was developed by the IEA (cf. IEA 2021). This is a normative scenario that outlines a pathway for the global energy sector to reach net zero CO_2 emissions by 2050, whereby advanced economies reach net zero emissions earlier than others. The NZE Scenario is in line with limiting the global temperature increase to 1.5 °C (with at least a 50 % probability).

METHODOLOGY

The fundamental strategy for creating the financing guidelines involved extracting control principles from the NZE Scenario to ensure that future activities align with the scenario outlined in the NZE. The key idea is that these control principles are consistent with Paris Agreement goals, as the NZE Scenario represents a transformation scenario aligned with the Paris Agreement targets for the energy system.

Three technology categories were established by KfW for devising the control principles (cf. KfW (2021)).

- Transformative technologies actively contribute to achieving greenhouse gas neutrality, such as renewable energy and environmentally friendly hydrogen.
- Transitional technologies generate greenhouse gas emissions, but are initially crucial for effectively organizing the transformation phase, such as direct reduced iron (DRI) plants for steel production that are to be converted to hydrogen.
- Greenhouse gas-intensive technologies that are neither compatible with the long-term goal of greenhouse gas neutrality nor necessary for the transition phase.

The aim of the control principles is to increase financing in transformative technologies, gradually limit transitional technologies until they are no longer needed and phase out greenhouse gas-intensive technologies as quickly as possible.

The sectors being considered have different characteristics, and thus the developed control principles vary accordingly. The first step in developing the control principles was always to analyze the information in the NZE Scenario: How does the scenario describe the development of a particular sector of the energy system? In subsequent steps, workshops were conducted with KfW business units to to narrow down possible control principles. This procedure was done in three steps. First, control logics were developed and shared for feedback before the workshop. Next, the proposal was discussed during virtual workshop meetings. Finally, the final control logics were presented in a closing workshop. In terms of content, the first task was to determine the system boundaries that should be covered by the control principles to be developed for a specific sector. For instance, for the automotive sector, should only emissions produced during car production be regulated, or should controls also apply to usage phase impacts. The critical consideration for defining this was assessing how pertinent production and utilization phases are for specific sectors (with regard to emissions); based on this assessment, practicable yet effective system limits were established with respect to achieving climate neutrality goals. For instance, the financing guideline for the "automotive" sector is based on vehicle types produced (e.g., electric vehicles vs. petrol vehicles etc.), while the guideline for the iron and steel sector control only financing in production techniques to produce crude steel and not the production of different steel types.

Three fundamental methods for control have emerged during the development of the guidelines.

- Quota control: here, quotas are set for transformative and transitional technologies that become more ambitious over time.
- Control via standards: basically, technical standards are defined here that apply to certain financing objects from a certain date and which become more and more ambitious over time.
- Budget control: here, emissions budgets are calculated for certain financing areas, which must be reduced annually.

The underlying concept of the financing guidelines developed so far are described below for each sector (cf. also KfW (2023)). Initially, we provide a brief overview on how the NZE Scenario outlines the development of each specific sector. Subsequently, we present how these principles are used in the guidelines. Finally, the guidelines developed are then summarised in the results section.

Automotive

The NZE Scenario forecasts a rapid shift of sales towards electromobility (cf. Figure 3). From 2035 onwards, no more new cars with fossil fuel combustion engines will be sold worldwide. Consequently, the financing guideline for the automotive sector focuses on the production and research/development (R&D) of passenger cars and light commercial vehicles (<3.5 tonnes), as well as on suppliers and infrastructure (NACE codes 29.1, 29.2 and 29.3). Quotas are used for control. Primarily, the guideline regulates the financing of the production of drivetrain components and R&D in transformative and transitional technologies for vehicles <3.5 tonnes. The guideline requires that by 2035, 100 % of financing activities (related to the financing of production technologies) will be allocated to the Battery Electric Vehicle (BEV) and Fuel Cell Electric Vehicle (FCEV) areas. This means that from 2035 on, all new automotive production sector financing must be for BEFs and FCEVs.

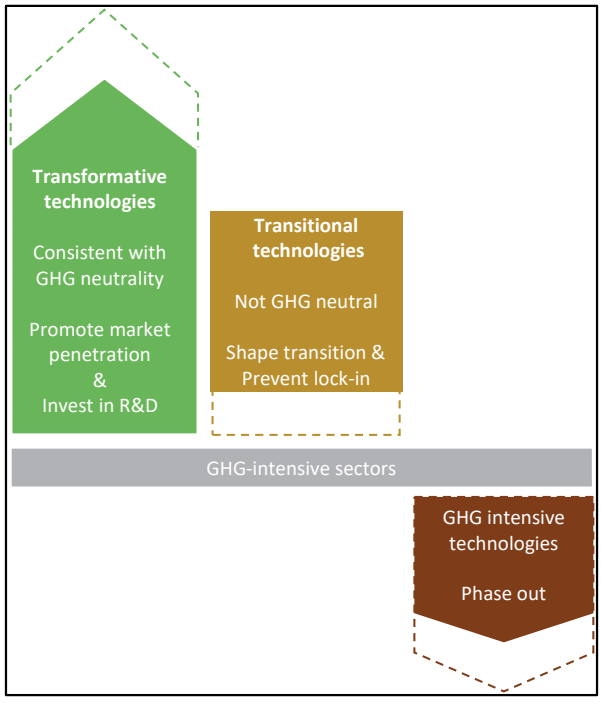


Figure 2. Technology categories for the KfW financing guidelines.

Aviation

To reduce greenhouse gas emissions in the aviation sector, the NZE Scenario is focussing on two main areas. Firstly, there is a gradual transition towards sustainable fuels. The use of sustainable aviation fuels (SAF) starts to increase significantly in the late 2020s. In 2030, about 15 % of total aviation fuel consumption is SAF, most of which is biojet paraffin (a type of liquid biofuel). In 2050, biojet paraffin covers 45 % of total aviation fuel consumption and hydrogen-based synthetic fuels cover about 30 %. Secondly, the NZE Scenario assumes that there are technological improvements in the aviation sector that are incremental but revolutionary, such as open rotors, hybridisation, etc. Consequently, the financing guideline developed focuses on the financing of aircraft for the transport of passengers and goods (NACE codes 51.1 and 51.21) and on the financing of aircraft lessors (NACE code 77.35). However, the technological developments outlined in the NZE Scenario are taking place gradually and in the future and therefore cannot be actively controlled at present. In contrast the gradual increase in SAF is reducing emissions from the aviation sector as a whole. Thus, a CO_2 budget approach derived mathematically from the NZE was chosen for the control. For this purpose, the CO_2 budget was calculated for the base year 2019. The control system implemented foresees that this budget is gradually reduced by applying annual reduction factors. This annual budget must then be kept to for the activities in this sector. The annual reduction factors start at around 2 %, rise up to 10 % in 2031 and will be set around 12 % from 2041 onwards. In the end, this can be controlled by the number of aircraft financed (fewer aircraft, fewer emissions) and the type of aircraft financed (more efficient/sustainable aircraft). The latter will probably only become more important somewhat later.

Buildings

For buildings, the NZE Scenario gradually reduces emissions by increasing the number of zero-carbon ready buildings worldwide. Here, a zero-carbon ready building is highly energy efficient and either directly uses renewable energy or an energy supply that will be fully decarbonised by 2050, such as electricity or district heating. In other words, a zero-carbon ready building will become a zero-carbon building by 2050 without any other changes needed. Thus, the building envelope (efficiency) and the energy supply for heating and cooling are mainly relevant here. Over time, the NZE Scenario foresees that all new buildings will be carbon-free from 2030. In addition, 2.5 % of buildings will be converted to zero-carbon ready every year from 2030. In the end, this means that in order to decarbonise the building sector, almost all existing buildings will have to undergo a single deep renovation by 2050 and new buildings will have to meet strict efficiency standards. This is why building energy codes for new and existing buildings are the key political instrument for driving such changes forward.

Consequently, the guideline developed for buildings centres on building codes. It controls financing of new construction, renovation, and acquisition of residential and non-residential

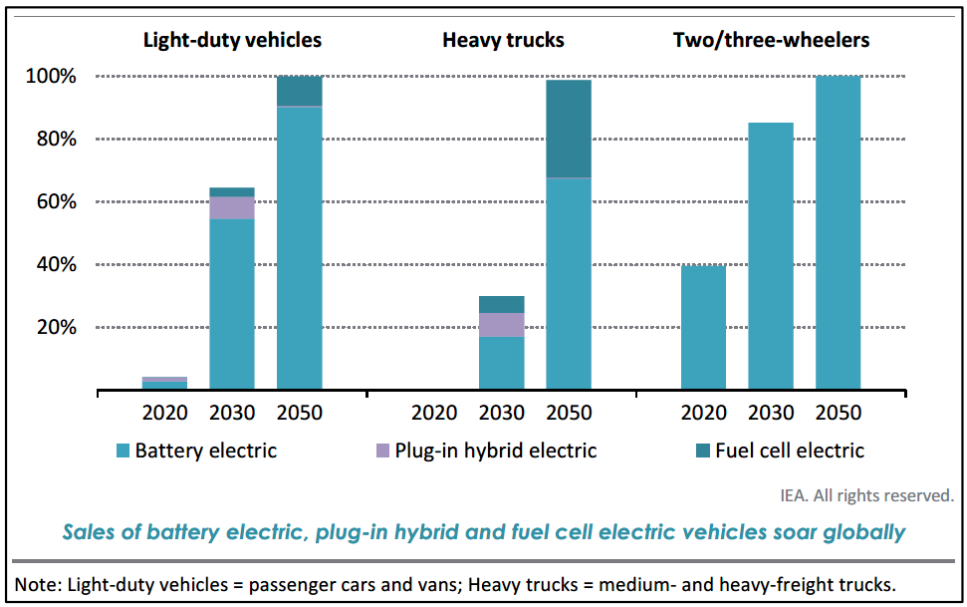


Figure 3. Projection of sales shares globally for vehicles depending in the NZE Scenario. Source: IEA (2021).

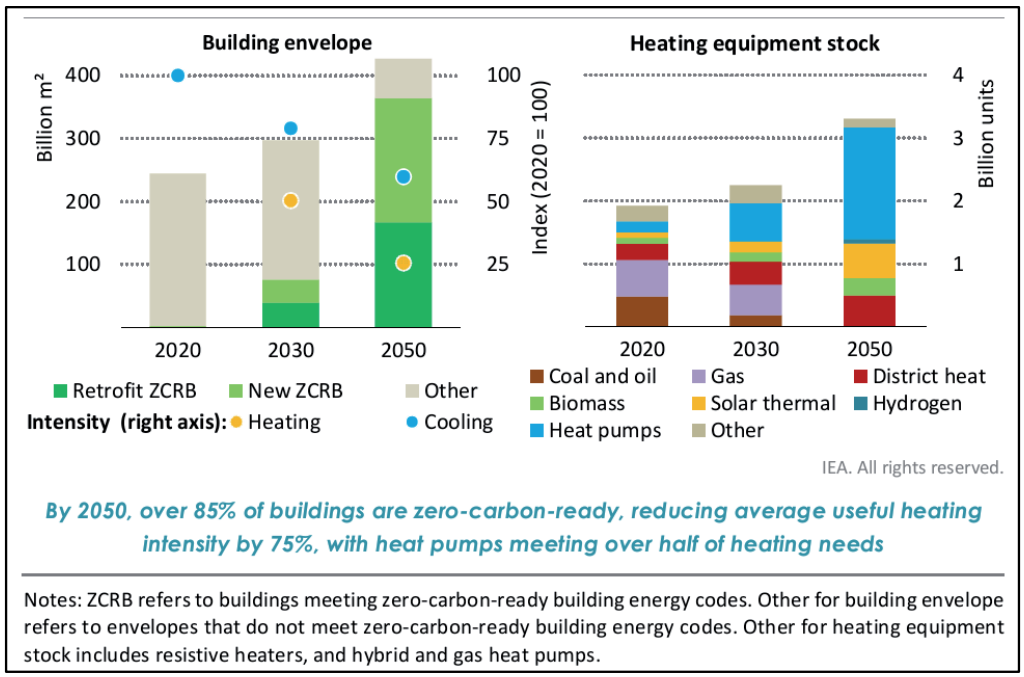


Figure 4. Projection of global building sector in the NZE Scenario. Source: IEA (2021).

buildings in the EU (also flats), building technology such as heating and hot water supply, cooling, ventilation and lighting systems. Central elements of the guideline are standards for the building envelope and the heat generator, which are regionally differentiated and become more ambitious over time. In Germany, KfW Group already uses efficiency standards required as part of promotional programmes on behalf of the federal government; accordingly, these standards were used as the basis for the financing guidelines for buildings in Germany. Here, average energy consumption for buildings over time was calculated from the NZE and stepped standards were set that reflect this development. Starting in 2024, new buildings must meet the KfW40 standard (typical heating demand 20–25 kWh/m²a). For renovations, a minimum standard of KfW100 must be achieved from 2025 on (typical heating demand 50–60 kWh/m²a); by 2040, renovations must reach KfW55 (typical heating demand 30-40 kWh/m²a). For buildings located within the EU but outside Germany, new buildings or renovations must fulfil at least the EPC rating "A" (energy performance certificate), or alternatively the national requirements for "nearly zero-energy buildings" (NZEB) of the respective country. In addition, natural gas heat generators will be excluded from financing in Germany and the rest of the EU from 2025, other fossil-fuelled heat generators are excluded from financing since 2023.

Iron & Steel

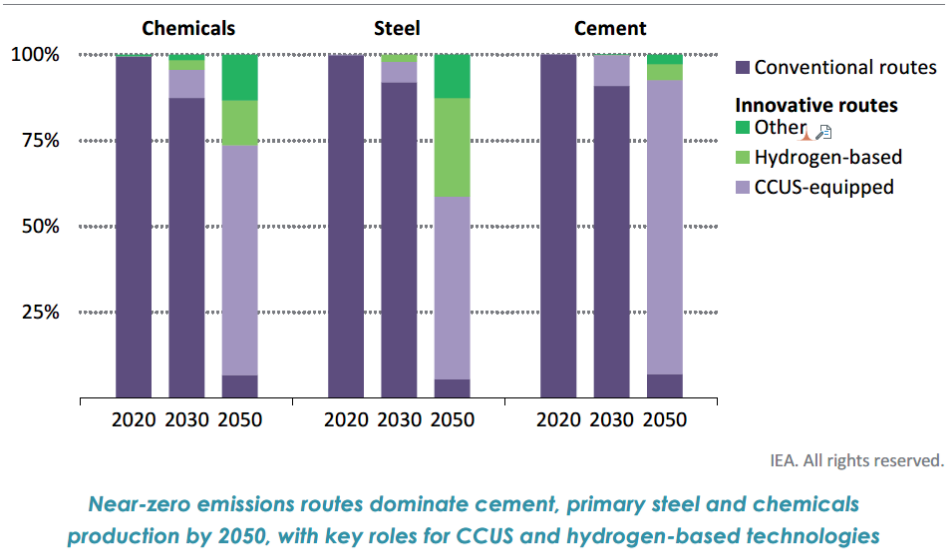
For the industrial sector, the NZE Scenario outlines the transformation of heavy industry technologically differentiated. Here, significant capacity expansions in innovative low-emission routes are projected from 2030 onwards. For the steel sector, in particular recycling will be increased. This means that the share of scrap in the input is set to increase from 32 % in 2020 to 46 % in 2050. Additionally, new technologies are introduced for crude steel production from ores, such as the production of sponge iron with hydrogen in direct reduce iron (DRI) plants. Moreover, steel plants that use coke (essentially conventional blast furnaces) will be retrofitted with Carbon Capture, Utilisation and Storage (CCUS) or constructed from scratch (no further differentiation is made here). Consequently, the financing guideline focuses on the emissions-intensive part of the steel production value chain, which is the crude steel production. Here, financing of crude steel production technologies is controlled. For this, quotas are used, where the share of transformative technologies should already be at 100 % by 2025.This is justified by long term lock-in periods in heavy industry. This means that from 2025 onwards, financing in conventional crude steel production can only be made if the plant is equipped or retrofitted with CCUS. For investments in DRI plants, transitional periods with natural gas are foreseen; however, it must be documented plausible that from 2035 onwards, the plant will mainly be operated with hydrogen.

Oil & Gas

The NZE Scenario projects a transformation of the energy system that is unique in its speed and scope, which of course is also heavily reflected in the exploration of fossil fuels (see Figure 6). The projected decrease of oil demand in the NZE Scenario means that no further exploration of new resources is required and that, apart from the fields already approved for development, no new oil fields are needed. Likewise, no new fields are required for natural gas, apart from those that have already been developed. This is consistently reflected in the financing guidelines developed through the application of financing exclusions). The guideline controls financing within the oil and gas value chain, covering exploration and production as well as transport and processing (upstream and midstream). Various exclusions are specified in the guideline. Central are the exclusion of financing for the prospection, exploration and production of crude oil and natural gas (upstream) as well as for the construction of new natural gas pipelines and the construction of new refineries for fossil fuels. Moreover, the financing of associated infrastructure (e.g. roads to refineries) is also excluded.

Shipping

For the short term, the NZE Scenario considers that substantial potential exists for reducing fuel consumption in the shipping industry through measures to optimise operational efficiency and improve energy efficiency. These approaches include slow steaming and the use of wind-assisted technologies. For the mid- to long-term, emissions are reduced by switching to low-carbon fuels such as biofuels, hydrogen and ammonia, where the use of these fuels is gradually expanded so that their share is over 80 % by 2050, with ammonia accounting for the largest share just over 40 %. A key measure proposed to achieve this is the implementation of strict targets to reduce carbon intensity, which is consistently reflected in the financing guideline developed. First, efficiency requirements are set based on reduction targets formulated by the International Maritime Organisation (IMO) in their Greenhouse Gas Strategy (minus 50 % reduction of CO_2 emissions by 2050 compared to 2008). For this the Energy Efficiency Design Index (EEDI) is used for different



Notes: CCUS = carbon capture, utilisation and storage. Chemicals refers to the production of primary chemicals (ethylene, propylene, benzene, toluene, mixed xylenes, ammonia and methanol). Steel refers to primary steel production. Other includes innovative processes that utilise bioenergy and directly electrify production. Hydrogen-based refers to electrolytic hydrogen. Fossil fuel-based hydrogen with CCUS is included in the CCUS-equipped category.

Figure 5. Projection of technology shares globally for the heavy industry in the NZE Scenario. Source: IEA (2021).

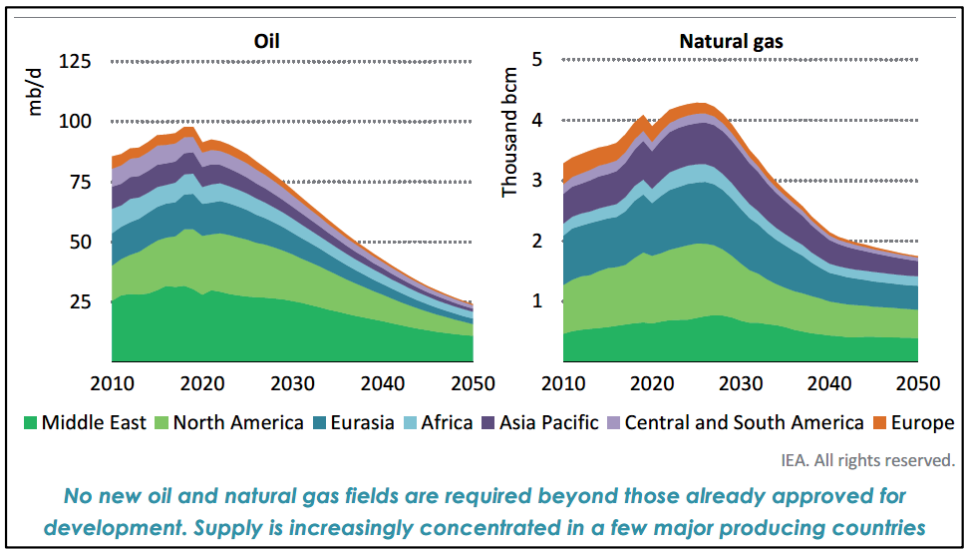


Figure 6. Projection of oil and gas production in the NZE Scenario. Source: IEA (2021).

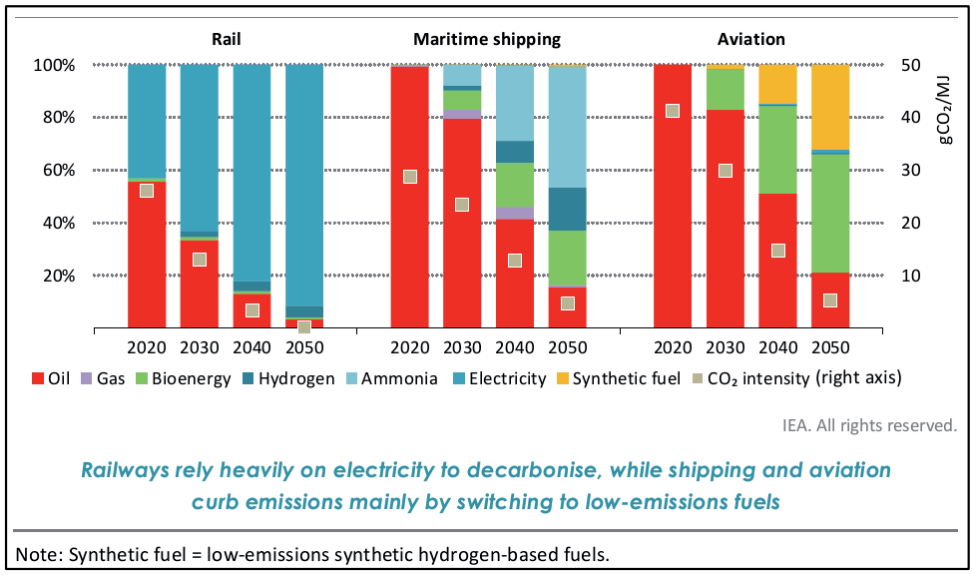


Figure 7. Projection of fuels for aviation, rail and shipping in the NZE Scenario. Source: IEA (2021).

ship types and sizes. Reduction factors (in per cent) are defined for the EEDI, which must be met compared to the reference EEDI. Thus, financed ships must be significantly more efficient than the standard. Second, the emissions of the shipping portfolio are controlled using the Poseidon Principles. Here, actual emissions data of the portfolio is used to check compatibility along a 1.5 °C reduction pathway using data from the Poseidon Principles framework. If the target is at risk, countermeasures are initiated. However, the sale of individual ships for emission reasons is excluded as a measure.

Results

Table 1 displays the current financing guidelines that have been implemented by the KfW briefly. Among the seven guidelines, three rely predominantly on quotas (automotive, electricity, iron&steel), while for buildings standards are the main control element. Shipping guidelines incorporate a combination of quotas and standards, whereas the control systematic for the aviation sector is based on CO_2 budgets. The oil and gas guideline is largely based on exclusions and financing limits.

Discussion & Conclusion

The literature overview indicates that current efforts to assist banks in transitioning towards Paris Agreement compliance commonly take the form of standardized frameworks (such as PCAF) or prioritize monitoring activities (like PACTA). Some action-oriented initiatives do involve guidance, but these often pertain to specific sub-sectors within the economy (e.g. Powering Past Coal Alliance Principles). Therefore, KfW's experience in implementing financing guidelines with a more focused technological approach demonstrates how guidelines can be developed to align with Paris Agreement objectives in the future.

Table 1. Summary of the financing guidelines.

Sector	Covers	Control approach & systematic
Automotive	Financing the production of drivetrain parts; R&D in transformative and transitional technologies for vehicles <3.5t.	**Quota:** Increasing approval volume for BEV and FCEV (transformative technologies) from 83 % in 2023 to 100 % in 2035, while decreasing approval volume for ICE, HEV, PHEV (transitional technologies) to 0 % by 2035.
Aviation	Financing of aircraft for passenger transport (NACE code 51.1) and freight transport (NACE code 51.21) including portfolio financing; Financing lessors in the aviation sector (NACE code 77.35).	**CO_2-Budget:** Gradually decreasing CO_2 budget for aircraft financing compared to the base year 2019 by applying an annual reduction factor that increases over time. Some support years as follows. 2019-2022: 2.06 %; 2031–2035 = 9.91 %; 2041–2050: 11.92 %.
Buildings	Financing new construction, renovation, and acquisition of residential and non-residential buildings in the EU (also flats); building technology such as heating and hot water supply, cooling, ventilation, lighting systems.	**Standards:** Requirements for building efficiency and heat generation have been defined for Germany and for EU countries. • For Germany, the KfW standard commonly used in Germany is applied; requirements become more ambitious over time, reflecting the transition path outlined in the NZE. • For other EU countries new builds or renovations must fulfil at least the EPC rating "A" (energy performance certificate), or alternatively the national requirements for "nearly zero-energy buildings" (NZEB) of the respective country. • All fossil-fuelled heat generators are excluded from financing in Germany and the rest of the EU from 2025 the latest.
Electricity generation	Financing of power plants in the electricity generation sector, i.e. for public electricity supply; electricity storages.	**Quota:** Increasing approval volume for transformative technologies (PV, Wind, etc.) from 81 % in 2023 to 100 % in 2025, while decreasing approval volume for transitional technologies (Natural gas power plants) to 0 % by 2025.
Iron and Steel	Financing crude steel production techniques in iron and steel production.	**Quota:** Starts with a strict limit for transitional technologies (max 5 % volume); then from 2026 onward, only commitments for transformative technologies are allowed (DRI plants with H2 plan, EAF, BOF+CCS...).
Oil & Gas	Financing within the oil and gas value chain, including both exploration and production as well as transportation and processing (up- and midstream).	**Exclusions**: Control is mainly based on explicit exclusions. Among others the prospection, exploration and production of crude oil and natural gas (upstream) is excluded, as well as the construction of new natural gas pipelines and the construction of new refineries for fossil fuels. The financing of associated infrastructure (e.g. roads to refineries) is also excluded.
Shipping	Financing or leasing of new ships; retrofits for ships if the operational lifespan is prolonged.	**Standards + Other**: Standard Efficiency requirements must be met based on "ship type" categories, which become more ambitious over time. Financing is possible if a specified reduction factor in relation to the reference Energy Efficiency Design Index (EEDI) is achieved. Furthermore, the Poseidon principles are applied to control emissions of this sector.

PACTA shares methodological similarities to the financing principles established by KfW. Moreover, also with PACTA Paris compatible financing guidelines might be developed. However, the novel aspect of the KfW financing guidelines lies in their explicit and comprehensive specifications for sectors within the greenhouse gas-intensive segment of the economy, which are externally communicated. Such guidelines pose methodological challenges as they require the integration and operationalisation of various indicators, which is probably something that many financial institutions have not yet done. Furthermore, such efforts may result in restructuring of business areas. Therefore, implementing technology-based Paris-compatible financing guidelines may be more challenging than adopting "only" CO_2 portfolio-based approaches. For Paris-aligned management using "only" CO_2 portfolio-based approaches, one would begin by assessing the greenhouse gas emissions of the assets in the portfolio and then utilizing this information to guide decision-making in relation to a specific goal (e.g. achieving a carbon-neutral portfolio by 2050). While this may appear straightforward initially, it only becomes uncomplex if divestment is selected as the primary management approach. For instance, if a bank discovers that it possesses numerous assets in the steel industry with high emissions, it might opt to divest them to decrease the portfolio's emissions. However, this wouldn't support the steel industry towards transitioning to low-greenhouse gas steel. Another approach for the bank could involve evaluating these assets and identifying investment opportunities to convert to low-greenhouse gas steel. However, this would need technological considerations together with the client, which may be complex as well if there are no guidelines. Thus, purely focusing "only" on CO_2 portfolio-based approaches may lead to uncertainty and require frequent case-to-cate adjustments. This approach can also pose drawbacks for the organization of business operations. Thus, technological based financing guidelines may therefore become increasingly demanded in one way or another.

Furthermore seeking for standardised solutions to navigate banks towards Paris compatibility may not be an effective approach, as banks are different and have different focuses. KfW has a clear mission orientation, which is also specified by its owner (the German state, represented by the federal government). Therefore, it may well be justifiable for KfW to establish technically detailed, rather activating guidelines to fulfil certain missions, such as combating climate change. However, such an approach may not necessarily be appropriate in depth for every bank.

However, further activities at regulatory level may be necessary for banks to orientate themselves. The EU Taxonomy Regulation (Regulation 2020/852) and the planned European standard for green bonds are certainly starting points here. Nevertheless, efficiently guiding the banking sector to play a more active role in facilitating the transition of the economy towards carbon neutrality may require phased adjustments of regulations towards more ambition. Because after all, requirements in Paris-compliant transformation scenarios (such as the NZE Scenario) also change over time and become more and more ambitious (e.g. the energy consumption of buildings gradually decreases).

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