

»»» Background paper on the Paris-aligned sector guidelines of KfW Group

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Steering in line with the Paris Agreement

In view of accelerating climate change, it is key to promote a comprehensive global transformation towards a climate-neutral society. The basis is provided by the Paris Agreement with the aim of restricting the increase in the global average temperature to well below 2°C and pursuing efforts to limit the temperature increase to 1.5°C. As a digital transformation and promotional bank, KfW Group takes particular responsibility for a greenhouse gas-neutral future and is committed to the 1.5°C climate target with its sector guidelines. It is important to support customers and partners in their transformation process in a targeted manner to capitalize on the opportunities of this far-reaching structural change, both in terms of economy and society.

Advancing Paris-alignment

Against this background, KfW Group introduced Paris-aligned sector guidelines for selected emission-intensive sectors for the first time in mid-2021. Within their scope, the sector guidelines serve to shape new commitments in accordance with the temperature target of the Paris Agreement and to systematically strengthen the group-wide contribution to the transformation. In this regard, the sector guidelines constitute an effective instrument for the implementation of German climate policy. At the same time, they ensure that existing obligations remain unaffected and that higher-level decisions on funding policy remain possible.

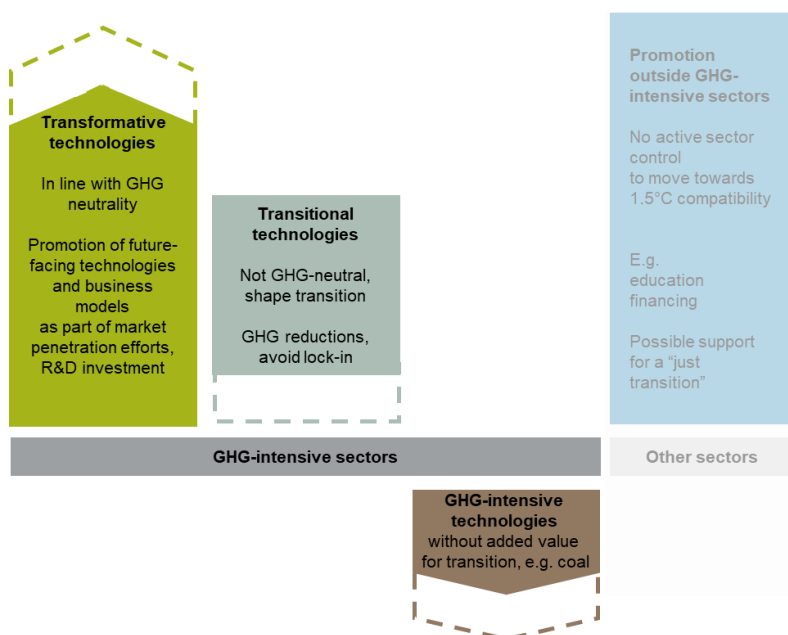
Furthermore, with the Paris-aligned sector guidelines, KfW Group is underlining its aim of achieving a greenhouse gas-neutral portfolio in the first half of the century. In addition to far-reaching decarbonisation, the remaining greenhouse gas emissions must be offset by financing projects in the field of sustainable greenhouse gas sinks and storage. In order to ensure the highest degree of consistency and transparency with view to the future counting of such negative emissions, KfW Group will develop a corresponding methodology. The progress towards a greenhouse gas-neutral portfolio will be monitored annually by a group-wide greenhouse gas accounting, which is currently being set up.

Shaping transformation and transition

Within the scope of application, the sector guidelines are Paris-aligned because their defined minimum requirements ensure compliance with the decarbonisation pathways mapped out in Paris-aligned climate scenarios. As a result, the sector guidelines illustrate the mix of transformation and transition technologies that can shape the structural change process in line with the Paris Agreement:

- KfW Group will increasingly promote transformative technologies that contribute directly to the strived greenhouse gas neutrality. In addition to investments in research and development, this includes greenhouse gas-neutral technologies and business models that are already marketable and need suitable financing for further market penetration. This applies to renewable energies and green hydrogen, for example.
- KfW Group will temporarily continue to finance transitional technologies. Even though transitional technologies cause greenhouse gas emissions, they play an important role with view to shaping the transition phase in a climate-friendly and successful manner. In terms of Paris-alignment, it is crucial to limit the financing volumes for these technologies in accordance with the Paris-aligned decarbonisation pathways, to continuously rely on the best available technologies and to avoid long-term carbon lock-in effects.
- Greenhouse gas-intensive technologies that are neither consistent with long-term greenhouse gas neutrality nor required for the transition phase, will be excluded.
- Financing activities outside of emission-intensive sectors are generally not subject to KfW's Group Paris-aligned steering system, because they are only of minor relevance for achieving the Paris climate targets.

Figure 1: Paris-aligned development of new business in support of transformation and transition phase – Increase the level of ambition through alignment with the 1.5°C target



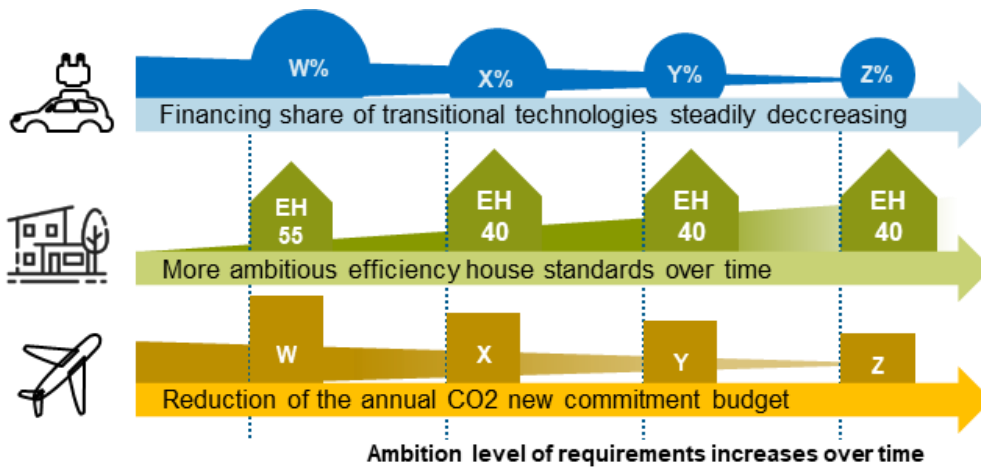
Focus and steering system

The Paris-aligned sector guidelines of KfW Group focus on sectors which are characterised by high greenhouse gas emissions, and which constitute significant financing volumes regarding group-wide new commitments. This configuration enables KfW Group to target the new financing arrangements with the highest potential for effectively promoting the transformation and to reduce KfW Group's greenhouse gas footprint as much as possible. Due to these considerations, the Paris-aligned sector guidelines are covering (1) automotive sector, (2) iron and steel production, (3) building sector, (4) power generation, (5) aviation and (6) shipping. As displayed in the detailed illustrations of this background paper, some sector guidelines are designed to cover all new commitments in a certain sector, while others focus on particularly emission-intensive areas within a sector. As part of the regular reviews, KfW Group will consider expanding its Paris-aligned steering system to include additional emission-intensive sectors and areas.

With view to the function of the Paris-aligned sector guidelines, it should be noted that they are not a "manual" for the design of climate protection projects. Instead, they set sector-wide minimum requirements for financed investments in order to avoid harming the climate. With the support of PwC and the Fraunhofer Institute for Systems and Innovation Research ISI, KfW Group derived these minimum requirements from recognized climate scenarios in a scientific manner. Initially the Sustainable Development Scenario (SDS) of the International Energy Agency (IEA), which corresponds to limiting the temperature rise to 1.65°C was used to derive the sector guidelines. In the spirit of climate protection, the KfW Group has focused on the further development of the sector guidelines in 2022 and revised them with regard to the 1.5°C target. This results in a significant increase in the ambition level. For the sectors automotive, iron and steel production, buildings, power generation and aviation, the minimum requirements were derived from the IEA's "Net Zero by 2050" scenario. For the shipping sector, a steering system was developed that complements the previous technology-based approach based on the SDS. The shipping portfolio will now be additionally steered towards 1.5°C using real emissions data that KfW IPEX-Bank will receive from shipowners after the Bank joined the Poseidon Principles in September 2022.

At the same time, broad-based transformation support can only be achieved through requirements that remain feasible for customers and partners. Otherwise, the manifold funding and financing offers would not generate impact due to insufficient demand. That is why KfW Group intends to raise the sector guidelines' level of ambition gradually over time, taking into account sectoral technology and market developments. The minimum requirements defined in the sector guidelines are in line with the Paris-aligned decarbonisation pathways of the above-mentioned climate scenarios, which project how the speed of decarbonisation will vary depending on each sector. Consequently, where greenhouse gas-neutral technologies are already marketable, the Paris-aligned sector guidelines define more ambitious minimum requirements than in sectors that are just starting to develop greenhouse gas-neutral solutions. Taking into account KfW Group's role as a digital transformation and promotional bank, this sectoral differentiation helps to particularly advance those sectors in the transformation process that have so far only achieved minor greenhouse gas reductions and are therefore of crucial importance with regard to achieving the Paris climate goals. As the following overview shows, this leads to appropriately adapted and insofar also diverse approaches in the individual sectors, ranging from technology lists and technology quotas to efficiency thresholds and greenhouse gas budgets.

Figure 2: Increase in Paris-compatible minimum requirements over time



To ensure Paris-alignment, the sector guidelines also take into account that the climate impact of financed systems, power plants, buildings etc. does not end with the repayment of the associated loans, because these assets are generally used beyond the loan term. That is why KfW Group has defined the minimum requirements of its Paris-aligned sector guidelines under consideration of the expected technical lifetime of the investments in accordance with the Paris-aligned decarbonisation pathways.

Transformation processes are characterized by increasing intensity and dynamics. This is why KfW Group attaches great importance to the further development and updating of its Paris-aligned sector guidelines. To ensure effectiveness and efficiency, KfW Group regularly evaluates changing framework parameters in a structured manner. If necessary, the sector guidelines are adjusted accordingly. In addition to climate policy objectives, other aspects such as climate science findings, new technological possibilities, market developments and regulatory requirements are also analyzed in this process.

A more detailed presentation of the sector specific minimum requirements is provided in the next sections of this background paper.

1.1 Automotive sector

The 1.5°C-compatible sector guideline for the automotive sector refers to production and research and development (R&D) of passenger cars and light commercial vehicles (< 3.5t) as well as suppliers and infrastructure (NACE Code 29.1, 29.2 and 29.3)¹. With focus on propulsion technologies, the sector guideline differentiates as followed:

- (i) Transformative propulsion technologies directly contribute to the greenhouse gas neutrality target. These include battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV).
- (ii) Transitional propulsion technologies are relevant but of steadily decreasing importance in driving the transition towards greenhouse gas neutrality. These include internal combustion engines (ICE), plug-in hybrid electric vehicles (PHEV) and hybrid electric vehicles (HEV).

The sector guideline increases the proportion of KfW Group's financing activities in transformative propulsion technologies and limits the financing activities in transitional propulsion technologies. KfW Group controls the quota for the transitional proportion of total financing volume, ensuring that it will be met.

Scope of application:

The following types of financing activities are steered by the sector guideline:

- New financing activities for propulsion-relevant parts of the automotive production (includes suppliers producing components for transformative or transitional propulsion-technologies; limiting quota for transitional drive technologies).
- Research and development in transformative and transitional technologies in the vehicle segment < 3.5t.

The following types of financing activities are **not** steered by the sector guideline:

- New financing for purchase of vehicles or fleets (as well as leasing).
- Production, research and development in the vehicle segment > 3.5t.
- Process steps unrelated to propulsion technology, i.a. pressing plant, shell construction, axles, supplier of automotive parts that are not propulsion-related (i.a. floors, seats, bumpers, mirrors), enameling lines, assembly lines, tests and quality checks, deliveries.
- Corporate Financing and other financing activities where the specific technologies are non-delimitable (e.g. intermediary-financing via financial institutions).
- Financing, unrelated to NACE Codes 29.1, 29.2 and 29.3, is not steered by the sector guideline for automotive (i.e. charging infrastructure², production of synthetic fuels and biofuels).

¹ As the sector guideline's requirements are focused on the powertrain, NACE Code 29.2 is only relevant for steering in case of a factory financing activity where the powertrain cannot be delineated.

² Charging infrastructure is seen as a transformative technology, support and funding for such projects is therefore unlimited.

Table 1: Requirements for transformative and transitional technologies in the automotive sector

Propulsion technologies	Commitments during period 1 01/01/2023-31/12/2024	Commitments during period 2 01/01/2025-31/12/2029	Commitments during period 3 01/01/2030-31/12/2034	Commitments during period 4 from 01/01/2035
Transformative propulsion technologies Promoting and challenging	<ul style="list-style-type: none"> Production plants for transformative propulsion technologies (BEV, FCEV) and their suppliers and associated infrastructure Battery production for passenger cars (no outdated technologies such as lead-acid/nickel-cadmium) Sustainable investments in propulsion technologies according to the EU taxonomy³ Research and development (R&D) in transformative propulsion technologies Replacement investments in transformative technologies GHG mitigation, energy efficiency and environmental protection measures in production Charging infrastructure (no quota imputation). 	<ul style="list-style-type: none"> Min. 93% of new commitment amounts for investment per business unit in above mentioned transformative propulsion technologies 	<ul style="list-style-type: none"> Min. 95% of new commitment amounts for investment per business unit in above mentioned transformative propulsion technologies 	<ul style="list-style-type: none"> 100% of new commitment amounts for investment per business unit in above mentioned transformative propulsion technologies
Transitional propulsion technologies Restricting	<ul style="list-style-type: none"> Max. 17% of new commitment amounts for investment per business unit in transitional propulsion technologies (ICE, PHEV, HEV), their suppliers and replacement investments 	<ul style="list-style-type: none"> Max. 7% of new commitment amounts for investment per business unit in transitional propulsion technologies (PHEV), their suppliers and replacement investments 	<ul style="list-style-type: none"> Max. 5% of new commitment amounts for investment per business unit in transitional propulsion technologies (PHEV), their suppliers and replacement investments 	<ul style="list-style-type: none"> No new commitment amounts for investment per business unit in transitional propulsion technologies (ICE, PHEV, HEV), their suppliers and replacement investments
<p>The following applies:</p> <ul style="list-style-type: none"> No research and development (R&D) in transitional propulsion technologies. Commitments in GHG mitigation measures, energy efficiency measures, and environmental protection measures in production in transformative technologies are generally eligible for funding; in transitional technologies, they are eligible for funding provided they do not extend the technical lifetime. It may be assumed that the technical lifetime will not be extended if the measure relates to upgrades to existing facilities that will then continue to operate (i.e. not replacing an old plant with a new one). Such commitments are not taken into account in the quota calculation for transitional or transformative technologies, based on the total cumulative commitments per business unit in transitional and transformative technologies in each respective period. 				

Abbreviations:

- ICE: Internal combustion engine
- PHEV: Plug-In Hybrid Electric Vehicles
- BEV: Battery Electric Vehicles
- FCEV: Fuel Cell Electric Vehicles
- HEV: Hybrid electric vehicle

³ PHEVs are an exception to this. They are classified as transitional in this sector guideline. In the EU taxonomy, PHEVs are classified as sustainable until the end of 2024. According to the EU Taxonomy Regulation for Sustainable Investment (Regulation (EU) 2020/852). The EU taxonomy is regularly updated and further specified via delegated acts.

1.2 Iron and steel production

The 1.5°C-compatible sector guideline for iron and steel production (NACE 24.10, partially NACE 19.10) focuses on the Crude steel production technology. The guideline distinguishes between (i) transformative technologies, that directly contribute to greenhouse gas neutrality and (ii) transitional technologies, which are relevant for progress towards greenhouse gas neutrality but are of continuously declining importance. Therefore, the Paris-compatible sector guideline will increase the proportion of financing activities in transformative technologies and limit the financing activities in transitional technologies. Technologies not listed in the 1.5°C-compatible sector guideline can also be classified as transitional, if they meet the high thresholds in regard to emissions (t CO₂) per t steel (crude steel).

KfW Group controls the quota for the transitional proportion of total financing volume, ensuring that it will be met. For domestic promotional business, the transitional technologies listed below are generally excluded from funding.

Scope of application:

The following types of financing activities are steered by the sector guideline:

- Financing for the Crude steel production technology.

The following types of financing activities are **not** steered by the sector guideline:

- Financing without a technologically definable object of financing is not controlled by the sector guideline. This also applies to financing to financial intermediaries if the object of financing cannot be technologically defined.
- General corporate financing for iron and steel producing companies

Table 2: Requirements for transformative and transitional technologies

Technologies	Description	New financing activities in the period from 01/01/2023 to 31/12/2025	New financing activities in the period from 01/01/2026
Transformative technologies	<p><u>New constructions:</u></p> <ul style="list-style-type: none"> ▪ Hydrogen or natural gas direct reduction (DRI)⁴ ▪ Smelting reduction (hydrogen based) ▪ BOF/DRI with CCS/ BECCU/S with certified biomass ▪ Electrolysis of Iron ▪ EAF (a) ▪ Recycling technologies to increase the recycling quota in steel production <p><u>Stock:</u></p> <ul style="list-style-type: none"> ▪ Relining of transformative technologies ▪ Retrofitting of transitional technologies with CCS/ BECCU/S <p><u>or alternatively:</u> In addition, all plants / technologies can be financed whose greenhouse gas intensity is less than or equal to 0,1 t CO₂ per t of crude steel</p>	Min. 95% of new commitment amounts for investment per business unit	100% of new commitment amounts for investment per business unit
Transitional technologies	<p><u>Relining and Retrofitting:</u></p> <ul style="list-style-type: none"> ▪ BOF without CCS / BECCU/S, or with and without CCU (a) ▪ Natural gas based DRI without CCS/ BECCU/S or with and without CCU (a) ▪ Coking plants (a) only with dry coke cooling processes (d) <p><u>or alternatively:</u> In addition, all financing for plants/technologies whose greenhouse gas intensity is greater than 0.1 t CO₂ per t crude steel and which are not classified as transformative technologies fall under the guideline.</p>	Max. 5% of new commitment amounts for investment per business unit	No new commitment per business unit

KfW financing for facilities associated with crude steel production technology (b), such as casters and rolling mills, as well as optimization measures (e) remain possible and are not taken into account in the calculation of the quotas mentioned above. However, the handling of associated facilities (b) and optimization measures (e) is handled differently depending on the country and the time of construction of the crude steel production plant.

Financing in associated facilities (b) and optimization measures (e) is allowed in the following cases:

⁴ If a DRI plant is to be operated predominantly with hydrogen from 2035 onwards on the basis of a plausible concept, a transitional operation with natural gas may still take place until then. Only in this case is a natural gas-based DRI plant to be counted among the transformative technologies.

Table 3: Permitted financing in associated facilities and optimization measures

	Developed countries	Developing and emerging countries (c)
Transformative technologies	<p><u>New constructions:</u></p> <ul style="list-style-type: none"> Permitted for associated facilities (b) <p><u>Stock:</u></p> <ul style="list-style-type: none"> Permitted for associated facilities (b) Permitted for optimization measures (e) 	
Transitional technologies	<p><u>New constructions:</u></p> <ul style="list-style-type: none"> Permitted for associated facilities (b) of crude steel production plants built until the end of 2025 <p><u>Stock:</u></p> <ul style="list-style-type: none"> Permitted for associated facilities (b) of crude steel production plants built until the end of 2025 Permitted for optimization measures (e) of crude steel production plants built until the end of 2025 	<p><u>New constructions:</u></p> <ul style="list-style-type: none"> Permitted for associated facilities (b) of crude steel production plants built until the end of 2029 <p><u>Stock:</u></p> <ul style="list-style-type: none"> Permitted for associated facilities (b) of crude steel production plants built until the end of 2029 Permitted for optimization measures (e) of crude steel production plants built until the end of 2029

References, explanations and abbreviations:

- (a) For the EU only commitments for Best Available Techniques (BAT) as per the latest BREF report of the European Commission (see EC Best Available Techniques (BAT) Reference Document for Iron and Steel Production). BREF compatibility is usually a legal requirement for commissioning a plant in Europe. Even in the case of under-delivery, BREF compatibility of the main plant should be made possible, provided that the under-delivery is covered by BREF and this can be verified by the specialist department. As the BREF report deals with concrete technologies, an application should also be possible outside the EU, if information on the technological specifications is available to the department.
- (b) The term associated facility in this sector guideline refers to facilities associated with crude steelmaking technology (e.g. casting and rolling mills).
- (c) Developing countries and emerging economies according to DAC List of ODA Recipients (<https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC-List-of-ODA-Recipients-for-reporting-2022-23-flows.pdf>, or current follow-up list)
- (d) Coking plants are not classified in the iron and steel industry (but in NACE 19.10). However, they are part of an integrated metallurgical plant and are included here.
- (e) Optimization measures in this sector guideline include energy efficiency, GHG mitigation and environmental protection measures.
- (f) The stated emission intensity refers only to the Scope 1 system boundaries.
- (g) BOF: Basic oxygen furnace
- (h) DRI: Direct reduced iron
- (i) EAF: Electric arc furnace
- (j) BECCU/S: Bioenergy with carbon capture and storage or utilisation

1.3 Building sector

The 1.5°C-compatible sector guideline for the building sector is applicable for new construction, modernisation and the purchase of buildings located within the EU. It includes all building types that are heated or cooled according to their intended purpose (e.g. residential buildings, administrative buildings, schools and hospitals), as well as for building technology (systems and equipment for heating, cooling, indoor air and lighting technology and hot water supply). The minimum requirements for buildings in Germany are defined according to the established KfW Efficiency House and Efficiency Building standards.⁵ For buildings located in the other EU countries, the sector guideline purposely offers several possibilities to meet the 1.5°C-compatible minimum requirements and thus takes into consideration the heterogeneous climate conditions and national differences in building standards.

Scope of application:

The following types of financing activities are steered by the sector guideline:

- New constructions, modernisations and purchase of residential and non-residential buildings located within the EU, including financing activities for individual building parts (e.g. apartments and the expansion of existing buildings⁶) or building technology (installation and setup of heating, cooling, ventilation and lighting technology as well as hot water supply).
- In the case of a new building or a full refurbishment, both the building efficiency and the heat generator requirements must be met.

The following types of financing activities are **not** steered by the sector guideline:

- Buildings not located within the EU.
- Acquisition of existing apartments, i.e. apartments that have already been occupied at least once since construction.
- Listed buildings⁷, industrial and production buildings, warehouse and shipping buildings, data centers as well as all building types that are not included in the scope of the German Building Energy Act (GEG §2 (2)) regardless of whether the location of the financed building is in Germany or other EU member states.
- Operation of buildings and technical installations for production processes in buildings.
- Individual measures, as long as they are not relevant for the primary energy demand of a building, e.g. barrier-free modification of the interior.
- General corporate financing and financing activities that cannot be technologically delimited over financial intermediaries e.g. for home ownership companies and construction companies.

⁵ In the Buildings Sector Guideline, the identical requirements for primary energy demand and transmission heat loss are set for the efficiency house or efficiency building standard in accordance with the GEG.

⁶ When extending existing buildings, building efficiency requirements must be met.

⁷ Listed buildings include (a) buildings which, according to an official list or by law, are historical monuments, (b) buildings that are part of a monument ensemble and (c) buildings that are classified as "other particularly building fabric worthy of preservation" by official decision.

Table 4: Minimum requirements for buildings located in Germany

Purpose of financing activity	01/01/2023 – 31/12/2024	01/01/2025 – 31/12/2039	01/01/2024 – 31/12/2049	From 01/01/2050
New constructions of buildings and apartments	At least KfW Efficiency House and Efficiency Building standard 55 (in compliance with the requirements for heat generators; see "Heat generator")	At least KfW Efficiency House and Efficiency Building standard 40 (in compliance with the requirements for heat generators; see "Heat generator")	At least KfW Efficiency House and Efficiency Building standard 40 (in compliance with the requirements for heat generators; see "Heat generator")	At least KfW Efficiency House and Efficiency Building standard 40 (in compliance with the requirements for heat generators; see "Heat generator")
Purchase of buildings and apartments that since being built have not been occupied (upcoming first-time occupancy)				
Purchase of buildings that since being built have been occupied at least once	At least KfW Efficiency House and Efficiency Building standard 100. If Efficiency House and Efficiency Building standard 100 is not achieved, the buyer is obliged to refurbish within 4.5 years after commitment (see. "Refurbishment of buildings")	At least KfW Efficiency House and Efficiency Building standard 100. If Efficiency House and Efficiency Building standard 100 is not achieved, the buyer is obliged to refurbish within 4.5 years after commitment (see. "Refurbishment of buildings")	At least KfW Efficiency House and Efficiency Building standard 55. If Efficiency House and Efficiency Building standard 55 is not achieved, the buyer is obliged to refurbish within 4.5 years after commitment (see. "Refurbishment of buildings")	At least KfW Efficiency House and Efficiency Building standard 40. If Efficiency House and Efficiency Building standard 40 is not achieved, the buyer is obliged to refurbish within 4.5 years after commitment (see. "Refurbishment of buildings")
Modernisation of buildings apartments	At least to Efficiency House and Efficiency Building standard 100 (in compliance with the requirements for heat generators; see "Heat generators")	At least to Efficiency House and Efficiency Building standard 100 (in compliance with the requirements for heat generators; see "Heat generators")	At least to Efficiency House and Efficiency Building standard 55 (in compliance with the requirements for heat generators; see "Heat generators")	At least to Efficiency House and Efficiency Building standard 40 (in compliance with the requirements for heat generators; see "Heat generators")
Individual measures⁸	Individual measures with the ambition level of the Efficiency House and Efficiency Building standard 70	Individual measures with the ambition level of the Efficiency House and Efficiency Building standard 70	Individual measures with the ambition level of the Efficiency House and Efficiency Building standard 55	Individual measures with the ambition level of the Efficiency House and Efficiency Building standard 55
Heat Generators	<ul style="list-style-type: none"> Permitted are electric heat pumps, solar thermal energy, local and district heating, biomass, etc.. Exclusion of fossil heat generators (exception: natural gas heat generators) 	<ul style="list-style-type: none"> Permitted are electric heat pumps, solar thermal energy, local and district heating, biomass, etc.. Exclusion of fossil heat generators (also no combined heat and power units (CHP)) 		

⁸ The technical requirements for individual measures are either taken directly from the GEG. If the GEG does not prescribe the corresponding ambition level, corresponding technical parameters (usually U-values) are derived.

Table 5: Minimum requirements for buildings located within the EU but outside of Germany

Purpose of financing activity	Minimum requirements
New constructions	The building must at least: <ul style="list-style-type: none"> ▪ meet EPC-classification „A“ (energy certificate), or ▪ meet the national requirements for “nearly zero-energy buildings” (NZEB)
Purchase of buildings that since being built have not been occupied (upcoming first-time occupancy)	
Purchase of buildings that since being built have been occupied at least once	The building (where necessary after completion of the financed modernisation ⁹) must at least: <ul style="list-style-type: none"> ▪ meet EPC-classification “A” (energy certificate), or ▪ be in accordance with the minimum standards for the implementation of the “Energy Performance of Buildings Directive” (EPBD), or ▪
Modernisation of buildings	
Individual measures	Individual measures with the ambition level of the Efficiency House and Efficiency Building standard 70
Heat Generators	<ul style="list-style-type: none"> • For example, electric heat pumps, solar thermal energy, local and district heating, biomass. • Exclusion of fossil heat generators (exception until 31.12.2024: natural gas heat generators¹⁰)

⁹ Analogue to the regulations in the BEG programmes, the customer has 4.5 years after application to implement the renovation measures.

¹⁰ From 01.01.2025 no fossil heat generators (also no combined heat and power units (CHP))

1.4 Power generation sector

The 1.5°C-compatible sector guideline for power generation (NACE Code 35.1) supports the expansion of renewable energies which can be financed as transformative technologies (e.g., wind, photovoltaic, solar thermal power plant, geothermal power plants, hydropower and tidal power plants, power generation with sustainable biomass¹¹,...) without any limitations. At the same time, the sector guideline also considers the role of natural gas power plants in successfully shaping the transition phase towards greenhouse gas neutrality. In accordance with the 1.5°C-compatible sector guideline for the power generation sector, KfW Group does not make any commitments for coal-fired power plants or nuclear power plants (neither new construction nor modernisation).

Thereby, KfW Group consistently relies on the best locally available and usable technologies and secures 1.5°C-compatibility of its new financing activities by relying on a quota control according to the table below.

The quota is controlled by KfW Group.

Scope of application:

The following types of financing activities are steered by the sector guideline:

- The sector guideline applies to KfW Group's global commitments to the power generation sector, insofar as the power plants financed in the process are designed to feed into the interconnected power grid for public power supply, as well as for electricity storage facilities.

The following types of financing activities are **not** steered by the sector guidelines:

- Interconnected or electricity grids
- Operational power plants for priority own use that do not feed into the interconnected or electricity grid for public electricity supply, or only feed into the grid on a subordinate basis.¹²
- Financing (including financing to financial intermediaries) without a technologically definable object of financing.
- General corporate financing for power generation companies.

¹¹ Sustainability certification is required for the production of electricity from biomass fuels in installations with a total rated thermal input ≥ 20 MW and in the case of gaseous biomass fuels with a total rated thermal input ≥ 2 MW.

¹² Mini grids and generators (e.g. for refugee shelters) that are not connected to the interconnected or public electricity grid are treated as operational power plants.

Table 6: Requirements for transformative and transitional technologies

Technology	Description	New financing activities in the period 01/01/2023-31/12/2024	New financing activities from 01/01/2025
Transformative technologies	<ul style="list-style-type: none"> ▪ Wind power Onshore and Offshore ▪ Photovoltaic (PV, including battery storage as hybrid power plants) ▪ Solar thermal power plant (Concentrated Solar Power, CSP) ▪ Hydropower and tidal power plants ▪ Geothermal power plants ▪ Power generation with sustainable biomass (Certification required with regard to sustainability, e.g. Global Bioenergy Partnership (GBEP), by the European Commission (provisionally) approved voluntary certification schemes ▪ Electricity storage facilities (e.g., batteries storage)¹³ 	Min. 81,2% of new commitment amounts for investment per business unit	100% of new commitment amounts for investment per business unit
Transitional technologies	<ul style="list-style-type: none"> ▪ Natural gas power plants (without CCS) (New construction and modernisation) ▪ Oil and diesel power plants (in individual cases, new construction and modernisation) 	Max 18,8% of new commitment amounts for investment per business unit	No new commitment amounts for investment per business unit
Technologies without quota imputation	<ul style="list-style-type: none"> ▪ Natural gas power plants (with CCS¹⁴) ▪ Waste incineration without energy recovery is Paris-compatible until the end of 2024 and may be financed. From 2025, only waste incineration with energy recovery may be financed. 	No quota imputation	No quota imputation

The 18.8% quota for transitional technologies applies for the period until the end of 2024 for business units that exclude further commitments for transitional technologies after 31 December 2024. Alternatively, business units can switch to a yet to be developed criteria-based approach for 1.5°C-compatible natural gas power plants by the end of 2023 at the latest. This criteria-based approach only allows financing of 1.5°C-compatible natural gas power plants beyond 2023 and excludes the financing of transitional technologies with the above-mentioned quota of 18.8% in 2024.

¹³ Batteries are accounted for as part of the capacity in the power sector in the International Energy Agency's "Net Zero by 2050" scenario, which forms the basis of the sector guideline. Therefore, electricity storage facilities are explicitly included in the guideline.

¹⁴ Definition according to the Carbon Dioxide Storage Act (Kohlendioxid-Speicherungsgesetz) - KSpG §3: 1. Permanent storage: Injection and containerless storage of carbon dioxide and ancillary components of the carbon dioxide stream in deep underground rock strata with the aim of preventing leakage indefinitely.

1.5 Aviation sector

The 1.5°C-compatible sector guideline for aviation applies to the financing of aircrafts for the transport of humans and goods (NACE-Codes 51.1 and 51.21) as well as for financing to aircraft lessors (NACE-Code 77.35). KfW Group continuously relies on the best technologies available. As for the aviation sector, there are currently no marketable transformative technologies available to promote a greenhouse gas neutral future, the sector guideline ensures Paris-compatibility by systematically limiting emissions of KfW Group's financed aircrafts. In accordance with the underlying decarbonization path published by the International Energy Agency (IEA) it defines a CO₂-Budget for new financing activities in the aviation sector, which gradually decreases compared to the previous year. The financing activities from 2019 form the calculated baseline (in representatively adjusted t CO₂/a).

KfW Group steers new financing activities within its CO₂-Budget.

Scope of application:

The following types of financing activities are steered by the sector guideline:

- KfW Group's worldwide commitments for the financing of air-craft for the transport of humans (NACE Code 51.1) and for the transport of goods (NACE Code 51.21) in aviation including portfolio financing
- General financing to aircraft lessors (NACE Code 77.35)

The following types of financing activities are **not** steered by the sector guideline:

- Commitments outside of aircraft financing, such as airports and the development or production of new aircraft.
- General corporate finance apart from aircraft financing, e.g., commitments to suppliers (such as engine manufacturers).
- Financial activities to financial intermediaries insofar that the object of funding cannot be technologically delimited (except financing to aircraft lessors).

Table 7: Annually, dynamically decreasing CO₂ budget of KfW banking group for financing of aircraft for passenger and freight transport as well as for financing to aircraft lessors:

Time period	Annual reduction in percent
2019 - 2022	2,06%
2023 - 2025	2,86%
2026 - 2030	6,17%
2031 - 2035	9,91%
2036 - 2040	11,27%
2041 - 2050	11,92%

1.6 Shipping

For new financing activities of KfW IPEX-Bank in the shipping sector (NACE 50.1 und 50.2), the Paris-compatible sector guideline defines individual efficiency requirements based on the Energy Efficiency Design Index (EEDI) for ship types and sizes (see chapter 2.6.1). In addition, the shipping portfolio is steered towards a 1.5°C reduction path using real emissions data (see chapter 2.6.2) which are provided by the Poseidon Principles framework.

Scope of application:

The following types of financing activities are steered by the sector guidelines:

- New financing to purchase or lease new ships in the below listed "Ship Type" categories (including structurally strengthened ship types, e.g. ice class with corresponding EEDI-deductions for the IMO-requirements).
- Retrofits (adjustments in the existing ship), provided that they prolong the ship's technical lifetime, are treated like new ships (see scope of application for "new ship" and for "major conversion" according to resolution MEPC.203(62), ANNEX 19).

The following types of financing activities are **not** steered by the sector guidelines:

- New financing for ships that are not subjected to IMO-Regulations and therefore have not been issued with an International Energy Efficiency Certificate (IEEC with notice of the EEDI).
- New commitments in domestic promotional business for ships within the below mentioned "Ship Type" categories, provided they are compliant with the technical screening criteria of the EU taxonomy for sustainable activities (environmental objective climate protection)¹⁵
- New financing for the purchase and lease of new ships that are not listed in the below mentioned "Ship Type" categories.
- Retrofits, which do not prolong the technical lifetime of the corresponding ship (e.g. exhaust gas purification).
- Financing of individual ship components.
- Corporate Financing and other financing activities where the specific technologies are non-delimitable (e.g. intermediary-financing via financial institutions).

Efficiency requirements for new financing activities

The energy efficiency requirements are aligned with the efficiency requirements defined in the International Maritime Organisation's (IMO's) GHG-Strategy reduction targets (-40%/-70% relative by 2030/2050; -50% absolute CO₂-emissions by 2050). Financing can be provided if the reduction factor, specified by ship type in the table below in relation to the reference EEDI, is adhered to at the date of order placement. The EEDI is calculated in accordance with the IMO-Regulation (i.a. Resolution MEPC.203(62)).

¹⁵ See Annex 1 of the Delegated Act ("Climate Act") of 04.06.2021 on the Taxonomy Regulation ([resource.html \(europa.eu\)](#)). Relevant are - depending on the object of financing - chapter 6.10, 6.11 or 6.12.

Table 8: Reduction factor (in percent) for the EEDI in relation to the reference-EEDI per ship type and size

Ship Type	Size	Reduction factor 01/01/2022 -31/12/2029
Bulk carrier	20,000 DWT and above	30
	10,000 - 20,000 DWT	0 – 30*
Gas carrier	10,000 DWT and above	30
	2,000 - 10,000 DWT	0 – 30*
Tanker	20,000 DWT and above	30
	4,000 - 20,000 DWT	0 – 30*
Container ship	200,000 DWT and above	50
	120,000 - 200,000 DWT	45
	80,000 - 120,000 DWT	40
	40,000 - 80,000 DWT	35
	15,000 - 40,000 DWT	30
	10,000 - 15,000 DWT	0 – 30*
General cargo ships	15,000 DWT and above	30
	3,000 - 15,000 DWT	0 – 30*
Refrigerated cargo carrier	5,000 DWT and above	30
	3,000 - 5,000 DWT	0 – 30*
Combination carrier	20,000 DWT and above	30
	4,000 - 20,000 DWT	0 – 30*
LNG carrier	10,000 DWT and above	30
Ro-ro cargo ship (vehicle carrier)	10,000 DWT and above	30
Ro-ro cargo ship	2,000 DWT and above	30
	1,000 - 2,000 DWT	0 – 30*
Ro-ro passenger ship	1000 DWT and above	30
	250 - 1,000 DWT	0 – 30*
Cruise passenger ship (having non-conventional propulsion)**	85,000 GT and above	30
	25,000 - 85,000 GT	0 – 30*
*) Linear interpolation of the value based on the size of the ship. The small value applies to the smaller ship.		
**) This is valid for cruise passenger ships with an unconventional propulsion, including diesel-electric propulsion, turbine propulsion and hybrid propulsion system.		

Steering towards a 1.5°C reduction path

In addition to the defined EEDI efficiency requirements under 2.6.1, the shipping portfolio is steered towards the 1.5°C climate target. For this purpose, the compatibility along a 1.5°C reduction path for the shipping portfolio is checked on basis of real emissions data, whereby data from the Poseidon Principles framework are used. In the event of exceeding (or the threat of exceeding) the reduction path appropriate countermeasures will be initiated. The sale of individual assets for emission reasons is excluded as a measure.

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