

>>> The challenge of climate change. How KfW Development Bank contributes to achieving climate goals.



# >>> Supporting the transition. Making the economies of developing countries resistant to climate change.

Climate change is among the greatest challenges currently facing humanity. As an international promotional bank, KfW takes responsibility – and takes action.

Even though a substantial portion of the effects of climate change still lie ahead of us, we are already starting to feel the changes all over the world: droughts, floods, heat waves. Developing countries are the most hard-hit by these effects, even though these nations have contributed least to climate change up to now. So we need to take swift and definitive countermeasures in all areas of life. Organising development in a manner that is climate-friendly is not just a matter of responsibility and equity – it also makes economic sense.

The Intergovernmental Panel on Climate Change (IPCC) has repeatedly and most recently reminded us in 2022 about what will happen if we do not act. If the temperature "only" rises by 1.5 degrees Celsius, the effects will already be drastic: heat waves would become the norm; the coral reefs would recede by 70 to 90%, thus causing dramatic losses in fish stocks, which in turn would influence food availability. At present, however, we are heading for up to three or four degrees Celsius by the end of the century. Meanwhile, manmade global warming is already one degree Celsius above pre-industrial levels.

"Business as usual" is no longer an option. It has become all the more important that we restructure our national economies as quickly as possible to make them sustainable: This includes taking measures like replacing fossil fuels and generally reducing emissions of climate-damaging greenhouse gases and resource consumption. The Paris Agreement and the United Nations' 17 Sustainable Development Goals (SDGs) make up the universal framework for these changes – now uniting all countries on Earth as equals, which is a different approach than the one taken for the previous Kyoto Protocol and Millennium Development Goals. Over





the next few years, it is imperative that the world implements both agreements and closes the gap between knowledge and action. As an international promotional bank, KfW is committed to these aspirations. We view ourselves as progressive thinkers and as a catalyst for positive change. In this respect, we act on behalf of the German Federal Government, in particular the Federal Ministry for Economic Cooperation and Development (BMZ).

In addition to our domestic programmes, KfW helps (poorer) countries all over the world to transform their social and economic systems in ways that are climatefriendly and to exploit and tap into the great potential that results from those changes. On the one hand, this means generating economic growth in ways that facilitate more goods and services without detrimental effects on the climate, all the more after the COVID-19 pandemic. This also includes using climate-friendly technologies to establish energy security as quickly as possible. On the other hand, it also means actively making adjustments to higher global temperatures and softening their impacts.

### KfW's strengths in this process are threefold:

- our expertise in financial markets that need to become greener (see "Investing in climate change mitigation" section)
- our ability to organise progress in ways that are environmentally safe (see "Driving climate-friendly development" section)
- our experience converting energy systems (see "Planning the energy turnaround" section)

Nobel Peace Prize laureate Al Gore once very aptly said: "We need to stop financing denial of climate change" - and focus consistently on sustainability. This is precisely KfW's concern.



# "The right direction"

Christiane Laibach, KfW Executive Board member, on climate change and its importance for KfW Development Bank.

### You once said that you felt strongly about the issues of climate and sustainability. Why?

Climate and sustainability are major global issues that will have a decisive impact on our lives today and in the coming years and decades. This applies to us as individuals, to societies, but also to KfW, which sees itself as a climate and sustainability bank as it actively supports and promotes this change.

### The resolutions on how to shape this change have been around for a while, with the keyword being the Paris Climate Agreement, but in many countries, there is a lack of implementation. Is there more movement now?

In my opinion, the issue remains high on the agenda, despite the war in Ukraine and all issues relating to energy security. This is exemplified by the European Union's Green Deal and the end of the climate-damaging combustion engine in the EU from 2035.

mies take climate action? The awareness is there. And, for example, we are seeing a clear shift towards renewable energies almost everywhere in the world. The lower costs of wind or solar energy, for example, facilitate the spread of sustainable technologies. This means that the direction is clear, they have started on the path. But fundamentally, poorer regions of the world have to deal with many challenges, currently with the economic consequences of COVID-19 and the war in Ukraine in particular. In combination with persistent droughts, these are causing food or hunger crises, which means that climate action requires an even greater effort on their part. It is all the more important that they receive international support in this. ... and that climate action is cushioned ...? With every transformation, there are also losers. If we want to successfully shape this change, we have to take them with us. This is even more essential in developing countries because the economic situation is precarious for even more people. Social protection and employment programmes, for example, help here. KfW supports both. What is KfW Group doing to advance climate action? We have imposed a transform programme on ourselves, in which we are gearing all our financing towards supporting the transformation of our partners and making KfW climate neutral by 2050. To this end, we are currently updating our sector guidelines for new business to be compatible with the 1.5 degree target. KfW Development Bank has been financing climate action and adaptation in a targeted manner since around 2008 – with increasing funds, which now amount to around four billion euros annually. This corresponds to a good half of our commitments. For the other half, we use climate mainstreaming to make sure that they do not harm the climate. We are also one of the largest issuers of green bonds and are constantly working on new innovative approaches to promote green capital markets, including in developing countries. With LAGreen, we have already been able to implement a first lighthouse project in Latin America. Do you think it is feasible to get to net zero emissions by 2050? I would put it the other way round and say: we will certainly only make it if we go to extreme efforts in the next five to ten years and that as a whole, all over the world. In this respect, the next few years will be crucial.

We also see it in companies that are taking the issue seriously and looking for solutions for environmentally-friendly business and climate-friendly technologies.

### Many young people in particular do not believe that progress is happening quickly enough. What would you say to them?

First of all, I would tell them that I welcome their social engagement because they have brought a new dynamic to it. The reason why things are not going any faster is, in my opinion, the following: we are facing a transformation that is very demanding, challenging and complex. It requires a successful interplay of policy, general conditions, regulations, the right incentives and sufficient funds. We also still need to make technical progress, for example in air and sea transport. There is still a lot of work ahead of us.

# How seriously do developing countries and emerging econo-

# >>> Climate change mitigation has a price. KfW provides funding.

Stopping global warming and lessening its most severe effects is a global challenge. It affects virtually every area of life, requires fundamental changes in thinking and creates high costs. So KfW has already significantly increased its international commitment - and is staying on the ball.

## **Mobility**

The transport sector is responsible for approximately one quarter of global carbon emissions.

**113 km:** the length of new rail links KfW is financing in three Indian megalopolises. These investments are helping to promote the transport transformation and reduce greenhouse gas emissions.

## Green financing

According to estimates, around USD 2.4 trillion per year is needed in the energy sector alone to achieve the international climate targets.

**More than EUR 50 billion** is the total sum of green bonds issued by KfW since 2014, making KfW one of the largest issuers in the world.

## Grids and storage

New infrastructure is needed in order to guarantee supply security and integrate use of renewable energy sources.

Since 2019, approx. **EUR 1.2 billion** has been committed to the further expansion of transmission and distribution grid infrastructure in partner countries of German development cooperation for the improved and sustainable integration of renewable power generation.

## Biodiversity

Forests, peatlands and soils are natural carbon sinks that can help to effectively reduce carbon dioxide in the atmosphere. Therefore, it is crucial for climate change mitigation to preserve and restore as many natural areas as possible.

With around **EUR 3.3 billion**, KfW promotes biodiversity in protected areas, but also beyond, for example in agriculture or fisheries. 91% of these projects are relevant to climate protection.



emissions, the global temperature will increase by up to four degrees by the end of the century. But the international community is striving to limit the increase to 1.5 degrees – and even then, the effects will be severe.





# Marine conservation

per year

The world's oceans are the largest carbon sinks and generate around half of our oxygen.

**EUR 4 billion** by 2025 is the sum that KfW has earmarked together with the French development agency AFD, the EIB, the Spanish promotional bank ICO, the Italian Cassa Depositi e Prestiti (CDP) and the European Bank for Reconstruction and Development (EBRD) within the scope of the Clean Oceans Initiative for marine conservation.

### Forest conservation

10% of global carbon emissions can be attributed to deforestation.

25 million cars: KfW has already conserved as much CO2 as these cars emit in a year with special compensation programmes for forest conservation.

# Renewables & energy efficiency

The plan is to reduce carbon emissions to zero in net terms by 2050 to achieve the target of 1.5 degrees and to prevent the worst effects of climate change. This means phasing out fossil energy production in favour of renewable energy and greater energy efficiency, renewable energy must quickly replace fossil energy, and energy efficiency must be improved.

EUR 4.4 billion was committed to the energy sector by KfW Development Bank in the last three years alone.

# Agriculture

tion of food needs to increase and, at the same time, become more sustainable.

Over the past five years, KfW has provided over **EUR 1.8 billion** to support farmers in developing countries in sustainable agriculture and land use Of these, 85% are contributing to climate change adaptation - so that they can continue to produce enough healthy food for themselves and others in the future as well.

# The commitments made in 2021 will reduce or avoid 7.5 million tonnes of CO<sub>2</sub>

Over 800 million people are already struggling with hunger. That is why the produc-

# >>> Shaping the global energy transition. KfW acts as a driver in the turnaround through its role as a financier of renewables.

The world is in a state of upheaval. Apart from digitalisation, the transition to sustainable forms of energy is probably the greatest watershed since the Industrial Revolution. This is changing economic systems, supply chains, jobs and people's lifestyles. KfW actively supports this pivotal/transformative process, always keeping its eye on the next steps.

Almost every human activity today needs energy. Whether in schools or hospitals, companies or shops, for lighting, cooling or heating and for digital networks – energy has become an essential part of our lives. This applies to wealthier developed countries in any case, but also increasingly holds true for developing countries and emerging economies that can only drive their economic development with more energy.

To ensure that global temperatures do not rise to an uncontrollable level, growing energy demands thus need to be met with climate-friendly sources: wind, solar, hydro, geothermal, or biomass. So nearly all countries in the world have set concrete targets for expanding renewable energy sources within the scope of

the Paris Agreement. And developing countries in particular have especially good conditions to do this. Africa, for instance, has enormous potential to use solar, wind, hydro and geothermal power, but has only tapped into a fraction of this potential to date.

### The world is energised - from Brazil to Morocco to Indonesia

However, because initial investments in energy infrastructure are usually very high, developing countries in particular need support for the energy transition. As a promotional bank, KfW is driving this transformation at a global level and has committed more than EUR 4.4 billion in renewable power generation, power grids and energy efficiency over the past three years.

One example is the largest solar power plant in Africa, which is currently being built in the Moroccan city of Ouarzazate and is

already producing green electricity for 400,000 people. When the entire complex is completed one day, the amount of power will triple again and will then meet the needs of 1.3 million people. KfW is also promoting solar energy in Brazil and El Salvador, wind farms have been built in Egypt and Bosnia-Herzegovina, and geothermal plants have been established in Kenya and Indonesia. And those are just a few examples from KfW Development Bank's extensive portfolio in the energy sector.

However, the energy supply from renewable sources fluctuates because the wind does not always blow and the sun does not always shine with the same intensity. And power can often not be generated where it is needed most. So suitable storage and



40% fewer greenhouse gas emissions is the reduction EU countries want to achieve by 2030 (reference year: 1990)

grids are needed at the same time to help supply electricity in the necessary amount and quality, at the desired location and at the right time. KfW also participates in expanding and modernising grid infrastructure and management. One example is KfW's co-financing of what is known as "green corridors" in India to transport sustainable energy to the country's economic centres. These and other investments in energy systems, such as substations in Ukraine or municipal distribution grids in Vietnam, have added up to almost EUR 1.2 billion in the last three years.

In addition to infrastructure investments, KfW supports political reform processes through policy-based financing. For instance, over the last three years reform-

based loans amounting to EUR 353 million have been issued to three countries (Côte d'Ivoire, Georgia and Albania) to create the necessary underlying conditions for a sustainable energy transition.



To date, KfW has provided loans of around EUR 200 million to the EcoCasa programme on behalf of the BMZ. This is being used to build eco-homes for poorer families – like this residential area in Mexico



KfW Development Bank invests in the expansion of renewable energy sources at a global level - e.g. at this wind farm in Egypt

### Energy efficiency - the most important energy source of all

Energy that is not consumed in the first place cannot damage the commitment to advancing the mobility of the future will be climate. This fact means that the issue of energy efficiency is also even greater. of major importance. The International Energy Agency (IEA) views it as one of the most underestimated resources too, and desigonly investing in energy-efficiency rehabilitation of public buildnates energy efficiency as the world's "first fuel". Energy can be used more wisely nearly everywhere in the world: The potential ings, but also in the introduction of a modern energy managefor increasing efficiency in developed countries is estimated at ment system to optimise building operations. 20%. In developing countries and emerging economies, the potential savings are estimated at up to 85% due to the higher energy KfW has been one of the largest financiers in the area of renewintensity depending on the sector and stage of development. able energy sources and energy efficiency around the world for

many years. And in doing so, it does more than simply invest Similar to the situation in Germany where KfW's efficiency prolarge sums: KfW also develops and follows up on innovative congrammes have set standards adopted by the entire real estate cepts for a socially just transformation of the energy sector market, KfW also promotes more efficient use of energy abroad in (JETP) and technologically new approaches (green hydrogen) and implements them - on behalf of the German Federal Governbuildings, power plants and grids. In Montenegro, for example, with a programme called "Greening Public Infrastructure", it is not ment - together with its partners.

## Thinking further ahead: climate-friendly mobility is another major issue

The energy turnaround is expanding: in addition to electricity generation through renewable energies for industry and private households, energy will increasingly play a role in the future through applications in district heating and electromobility. Furthermore, power-to-x technologies are gaining in importance in order to convert electricity generated from wind or solar energy into other energy sources and to use them. The transport transformation is happening alongside the energy turnaround, or rather, both of them are connected: So KfW promotes environmentally friendly electric mass transportation like underground and overground trains, for example in Brazil, Tunisia or India. It views the creation of sustainable mobility systems in which the various means of transport are fully coordinated with one another and part of targeted urban planning as one of the most urgent tasks in the years to come. From now on, KfW's

# >>>> Driving climate-friendly development. KfW reconciles ecological, economic and social objectives.

Whether air, water, or land, and whether food, raw materials or biodiversity humanity is straining the Earth's capacity to its limits, and beyond. It is all the more important that we make development progress in environmentally and climate-friendly ways. This is KfW's commitment.

The numbers are alarming: one million species threatened by extinction, eight million tonnes of additional plastic waste in the world's oceans each year, deforestation covering areas as large as South Korea every year, 80% of wastewater is untreated, numerous cities suffer from bad air quality. Meanwhile, the sea level is rising and extreme weather events are on the rise due to global warming.

At the same time, almost one in every ten people still lives in extreme poverty, and the coronavirus pandemic has exacerbated

the situation. Consumption requirements and pent-up demand are considerable in many areas of the world. This increases the pressure on natural resources. Especially because the world population continues to grow: there will probably be around 10 billion people on Earth by 2050.

### Reconciling economies with environmental protection and climate change mitigation

It will not be possible to meet the increasing demand for food, water, goods, places to live and mobility with previous models without destroying existing ecosystems. So the only remaining solution is to recon-

cile economies with environmental protection and climate change mitigation. This combination was also codified in the United Nations' Sustainable Development Goals (SDGs) from 2015 and provides a clear framework for all the activities of German development cooperation and therefore of KfW Development Bank, as well.

For example, forest conservation is a matter of particular importance for KfW. Deforestation is one of the largest sources of greenhouse gases. Forest area equivalent to the size of a football pitch is destroyed every four seconds. So protection of these areas plays a key role in conservation and climate change mitigation. For it has long been clear that we are currently dealing with a twofold crisis in which global warming and the destruction of ecosystems and loss of biodiversity are inextricably linked and must therefore also be tackled together. KfW is taking countermeasures in the form of reforestation programmes like the ones in Madagascar or Vietnam, among others. But these programmes do more than just plant trees; they also help to restore entire forest landscapes. Reforesting deforested areas is supplemented with agriculture and management of existing forests. Agroforestry systems



# 1 million animal and plant species are threatened by extinction worldwide

used for things like cocoa or coffee farming play a special role here. And KfW supports compensation programmes that provide incentives for forest conservation. The local population receives funds if they reduce deforestation and thus protect the climate. This is an approach KfW has been using in Ecuador and Colombia, for example.

KfW is also concerned with protecting the world's oceans. For that reason, KfW founded on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) a trust for international marine conservation: the Blue Action Fund (BAF), which promotes new conservation

areas, sustainable fishing and alternative, environmentally friendly livelihoods, such as tourism, among other things. KfW has also launched the Clean Oceans Initiative to address the issue of marine waste. Together with other European promotional institutions, the COI is helping to prevent waste, especially plastic waste, from entering the oceans in the first place, for example, by building sewage treatment plants and waste dumps or by introducing recycling systems.

### Dealing with the effects of climate change

Reducing emissions of climate-damaging gasses or sequestering



Climate change is threatening the habitats of many animal and plant species (above), but also natural reservoirs like these glaciers in Peru (below



them in forests, marshland and oceans and preserving ecosys-Peruvian population, which primarily lives in dry coastal regions. tems is important but is not enough. Because today, we already The problem is, these glaciers are already melting at drastic know that the Earth's temperature will rise despite all efforts and rates. So KfW is helping local suppliers to use water more effithat will have far-reaching effects, primarily on many developing ciently so that they will also be able to manage the supply in the countries: whether droughts or floods, heavy rains or record temage of climate change. On the other hand, KfW promotes coastal peratures, poor countries are the ones most affected by climate preservation with walls, embankments and planting to protect change – and they rely on international support. against erosion in Tunisia so the country does not lose land to rising sea levels. Those are just a few of the measures. One thing is So KfW is also promoting adjustment measures all over the world, clear: organising progress in a way that is climate-friendly is one for example, in Peru. The glaciers in the high mountain regions of KfW's overarching objectives - and is thus also one of the main issues its mission will focus on in the years and decades to come. there function as the service reservoir for the majority of the

An additional load of 8 million tonnes of plastic waste ends up in the world's oceans every year

### Thinking further ahead: Protecting landscapes – together with international partners

The loss of biodiversity has taken on dramatic proportions; species extinction is now occurring 100 times faster than without human intervention. This trend must be reversed, also as a means of climate change mitigation. Well-managed conservation areas are the best way to do this if they closely involve the local population. KfW founded the Legacy Landscapes Fund (LLF) on behalf of the German Federal Government for precisely this purpose. The fund finances protected areas and their surrounding areas in poor countries. The idea behind the LLF is as simple as it is compelling: if we succeed in preserving as many species as possible in biodiversity-rich but low-income areas of the world, then a good part of the biodiversity that is essential for survival will be safeguarded for the whole world – and thus also for the climate and adaptation. What is special about the LLF is that private donors are also involved so that the LLF can help to close the large funding gap in nature conservation and climate action.

# >>> Investing in climate change mitigation. KfW is changing the financial markets with new, green products.

The financial sector needs to become greener so that investments increase in environmentally and climate-friendly technologies and decrease in backward-oriented solutions. KfW promotes this process by consistently developing and applying innovative financial products.

warming by

70

One central task over the next few years is: transforming the economy as quickly as possible. This applies to power generation and building construction, to mobility and agriculture – to nearly every area of life. It will require major investments in green technologies. For the energy sector alone, some USD 2.4 trillion will be needed each year according to estimates by the Intergovern-

mental Panel on Climate Change. Other sources think, in more general terms, that we have to go from "billions to trillions" mobilising huge sums – to achieve the UN Sustainable Development Goals.

### **Expanding green instruments**

This process is already under way. All promotional and development banks have now created climate portfolios. This also applies to KfW Development Bank, which spent almost EUR 3 billion in 2021. In 2020, which was a particularly strong year, this figure was EUR 4.3 billion. In 2010 the sum was around EUR 2.4 billion.

In addition to direct investments in green infrastructure like renewable energy sources or public transport, it is also necessary to expand green instruments so the scarce

public resources can have the greatest possible effect. This includes a more traditional product with which KfW has a lot of experience: lines of credit that can be used to create incentives for things like energy-efficient rehabilitation. But it also includes funds like the eco. Business Fund in Latin America, which supports green business practices. It promotes companies that use sustainable methods to make their products, for example in forestry, coffee farming, or within the scope of sustainable tourism. The fund has been so successful in Latin America that it is currently opening an additional branch in Africa. KfW, on behalf of the BMZ, is also one of the founders of the Caribbean Biodiver-

sity Fund (CBF) which promotes conservation in the Caribbean, a region particularly hard-hit by climate change.

KfW is also a pioneering force in insurance as is now available in Africa, in Central America or in small island nations in the Pacific. For example, this insurance can help nations affected by extreme

weather events to quickly access funds after a catastrophe and thus limit eco-

nomic damages or accelerate the rebuilding process. The African Risk Capacity (ARC), which KfW helped to launch, insures African Union member states and humanitarian stakeholders in Africa against the impacts of droughts and tropical cyclones. The intention is to lessen African countries' vulnerability to climate risks. These types of insurance policies will become increas-The Earth is currently ingly important in the future. KfW is also involved in the "Global Protection Shield", which the German Federal Government proposed as part of its G7 Presidency at the beginning of 2022. The Global Protection every decade as a result Shield is a global compensation mechanism for countries that are particularly vulneraof climate change ble to the consequences of climate change.

### Mobilising private capital

KfW is also engaged in innovative work on "green bonds", playing a double role as issuer and investor. These are bonds whose revenue is used for climate change mitigation and environmental protection projects. They help to mobilise private capital, making it possible to finance an increasing portion of the necessary climate investments. They are still niche products, but the market is growing: since 2015, annual new issues have increased more than sixfold. In 2021, they amounted to EUR 500 billion. KfW has issued green bonds of more than EUR 50 billion to date, making it one of the largest issuers in the market worldwide. In 2021 alone, green



bond issues amounted to EUR 16 billion and contributed around 20% to funding in the 2021 financial year. The ability to combine investments in sustainability and climate change mitigation with the liquidity and security of KfW bonds has been immensely popular. Furthermore, KfW has already invested EUR 2 billion in green bonds from other market participants as part of its own green bond portfolio.





The fact that financial markets are on the move is also shown by diverse associations and committees like the International Development Finance Club (IDFC). 27 development banks have now joined this club, including KfW. The members share the vision of a sustainable future while simultaneously reducing poverty. Together, they committed a total of USD 1.3 trillion for green financing between 2015 and 2021.

KfW is committed to making financial markets greener in two ways: as a promotional bank that supports green projects throughout the world, and as a financial institution that has put itself on a clear course towards sustainability in its own banking operations. In light of the enormous sums that need to be raised to overcome global warming, the issue is at the very top of KfW's agenda.

### $\rangle\rangle\rangle$

### Thinking further ahead: KfW strategically aims to ensure sustainability

In future, KfW will direct efforts at sustainability even more consistently than it has in the past. With the group-wide project "tranSForm" in the area of sustainable finance, KfW has initiated trend-setting changes that focus on the contribution of financing to a sustainable and climate-friendly transformation of the economy and society. These measures will not only further advance KfW, they will also facilitate our role as an opinion-forming financial institution with a formative presence. As a promotional bank, KfW sees its role as being to drive forward the world's transformation towards taking a more responsible attitude towards climate change and to continuously develop its own promotional products, standards and processes. For example, in 2020 it co-initiated the Latin American Green Bond Fund, LAGREEN, which enables countries in Latin America to issue green bonds for the first time.

## Responsible banking

KfW is one of the world's leading promotional banks. On behalf of the Federal Republic and the federal states of Germany, it applies its decades of experience to improving economic, social and ecological living conditions at home and abroad.

In addition to KfW Development Bank, the two group subsidiaries DEG and KfW IPEX-Bank are active in KfW Group's international business. While KfW Development Bank acts as the implementing organisation of the German Government's Financial Cooperation to support projects and programmes involving mainly public actors in developing countries and emerging economies, DEG provides financing and consulting to private companies investing there. KfW IPEX-Bank supports the German and European economies with project and export finance.

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Further information about KfW's contribution to climate action is available via this QR code:

