
ACTIAM climate target strategy & implementation

April 2021

Executive Summary: ACTIAM climate target

Climate has always played a key role in the Sustainable Investment Policy of ACTIAM. Already in 2015, just after the Paris Climate Agreement was agreed upon, ACTIAM formulated a long-term climate target in line with that Agreement. At that moment, an intermediate target was formulated to reduce greenhouse gas emissions of its investments by 30% before 2030 compared to 2010. Already in 2020, ACTIAM has surpassed this target. ACTIAM has made its investment policy more sustainable, by selecting issuers that reduce their greenhouse gas (GHG) emissions and by divesting from highly polluting issuers. So, it is time for new ambitions. Not only to formulate a pathway and agenda towards climate neutrality, but also to mitigate financial risks and exploit financial opportunities that climate change brings about. With these new ambitions, ACTIAM will again be in line with the latest scientific insights and with the financial sector guidance on target-setting of the Science-Based Target Initiative (SBTI).

ACTIAM aims to achieve net-zero greenhouse gas emissions across all assets under management by 2050. We will do so by taking three climate change mitigation measures:

1. Reduce greenhouse gas emissions of issuers through active stewardship;
2. Invest in solutions that reduce greenhouse gas emissions, increase low-carbon energy supply or that avoid or that capture and store greenhouse gas emissions, if possible nature-based solutions;
3. Divest from issuers that are non-adaptive to the transition required for a net-zero economy.

ACTIAM has defined two intermediate targets; to reach 50% emissions reduction by 2030 and 75% by 2040 compared to 2020. These are based on an average 7% annual greenhouse gas emissions reduction pathway in line with the IPCC's 1.5°C trajectory with limited overshoot.

Reductions will especially stem from energy efficiency, low-carbon energy supply and renewable energy solutions. Yet, as only approximately 67% of all greenhouse gases originates from fossil fuels-related activities that emit CO₂, reductions will also be realised by lowering methane and nitrous oxide emissions from land use (through land use change, livestock raising, fertilizer use and landfills) and reducing fluorinated gas emission e.g. from cooling appliances. In addition, terrestrial, marine and technological carbon capture and storage solutions will lead to enhanced natural carbon sinks and storage of carbon e.g. in empty gas fields. This includes e.g. avoided deforestation, peatland restoration, reforestation, improved agricultural practices and protection of land and marine biodiversity.

To measure progress towards net-zero emissions by 2050, ACTIAM will measure absolute greenhouse gas emissions and greenhouse gas emissions intensity of all assets covering scope 1, 2 and 3. Monitoring and reporting on targets is done separately for scope 1 & 2 and for scope 3. Given that emission intensity is a relative measure it will be adjusted for inflation to capture the real greenhouse gas emissions reduction achieved.

ACTIAM walks the talk and has already decarbonized emissions from its own operations. However, there are still emissions that need to be offset at this point. That is why ACTIAM has set the target to achieve net-zero GHG emissions of its own operations by 2030.

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1 Introduction

In 2015 already, just after the Paris Agreement was adopted, ACTIAM formulated a long-term climate target in line with the agreement. At that moment, an intermediate target was formulated to reduce greenhouse gas emissions in 2030 by 30% compared to 2010. ACTIAM has already surpassed that target. That is why it is time to set new, more ambitious climate targets, in line with the latest scientific insights.

This document describes the new climate targets of ACTIAM and sketches the time path and actions required to reach them. The time path sketched and actions required to reach the targets specifically acknowledge that climate change is caused by multiple factors and requires changes by all sectors. The shift from fossil fuels-based technologies to renewable energy technologies and the need to improve energy efficiency, already leads to a major paradigm shift in society. Yet, actions also have to reduce methane emissions from livestock, land use change and waste management, and nitrous oxide emissions from fertilizer use. In addition, they have to reverse the reduced carbon sink capacity of our ecosystems in the form of nature-based solutions. These require additional systemic changes that go beyond the technological solutions many climate change action plans currently focus on.

The next section describes the long-term target and intermediate sub-targets. The main strategy to reach these targets is described in section 3. Section 4 describes the strategic implementation plan and time-bound KPIs. The plans to measure and report about progress are discussed in section 5. Finally, it is discussed in section 6 how ACTIAM intends to reach carbon neutrality for its own operations by 2030.

2 ACTIAM Climate targets

The overall, long-term target of ACTIAM is to achieve net-zero greenhouse gas emissions by 2050, in line with a 1.5°C climate scenario. The climate target applies to all assets under management by ACTIAM and covers scope 1 (direct operations), scope 2 (energy generation) greenhouse gas emissions, and scope 3 (value chain) emissions.¹ It includes CO₂ emissions as well as emissions from other greenhouse gases such as methane, nitrous oxides and fluorinated gasses.

Given the timespan of the overall target, ACTIAM defines intermediate targets for 2030 and 2040 for aggregate scope 1 and 2 greenhouse gas emissions and for scope 3 greenhouse gas emissions. ACTIAM sets a separate target for scope 1 & 2 emissions and for scope 3 emissions, because the latter emissions will follow from reductions in the former and to avoid duplication. In addition, separating these targets helps to avoid that mitigation efforts concentrate on own emissions while neglecting emissions within the value chain that may be more difficult to reduce. The intermediate reduction targets are:

- 50% greenhouse gas emissions reduction by 2030 compared to 2020
- 75% greenhouse gas emissions reduction by 2040 compared to 2020
- 100% greenhouse gas emissions reduction by 2050 compared to 2020.

The reduction pathway is in line with a 1.5°C scenario following quantitative projections of the IPCC², assuming an expected average annual carbon emission reduction of 7%. In that way, it is also in line with the ambitions stipulated by the Paris Agreement, and the EU Climate Target Plan, which aims for 55% reduction compared to 1990 and climate neutrality in 2050³. Note that ACTIAM aims for a 1.5°C pathway and deems a reduction pathway towards a 2°C scenario undesirable given the exponential increase in economic and social damages when global warming exceeds 1.5°C.

Reductions will especially stem from energy efficiency, low carbon energy supply and renewable energy solutions. Yet, as only approximately 67% of all greenhouse gases originates from fossil fuels related activities emitting CO₂, emitters of other greenhouse gases such as methane, nitrous oxide and fluorinated gasses, will also be targeted.⁴ For that reason, reductions will also be realised by lowering emissions from land use (through land use change, livestock raising, fertilizer use and landfills) and reducing fluorinated gas emission e.g. from cooling appliances.

It is expected that different sectors will follow different reduction pathways. On top of this, as concluded by most carbon emission pathway studies that limit warming to 1.5°C with no or limited overshoot, it is expected that greenhouse gas emissions cannot completely be reduced to zero in 2050. It is expected that a limited level of greenhouse gas emissions is unavoidable. Thus, the majority of scenarios assumes net zero emissions, thus including avoiding, sequestering or capturing and storing greenhouse gas emissions.⁵ These stem from terrestrial and marine solutions that lead to enhanced natural carbon sinks, through avoided deforestation and peatland drainage, peatland restoration, reforestation, restoration of cover crops, improved agricultural practices, improved fishing methods and protection of land and marine biodiversity. Plus technological carbon capture and storage solutions play a role, e.g. in empty gas fields. Globally, these additional measures are expected to potentially lead to a carbon emission reduction of around 7 Gt of CO₂ per year by 2030.⁶ They are expected to develop over time and close the gap of the remaining emissions in 2050.

1 In line with definitions of the GHG protocol. The scope 3 emissions target will initially only apply to corporates. Also, scope 3 emissions of sovereigns are deemed less material.

2 IPCC (2018) 1.5°C trajectory with no or limited overshoot (Years 2020-2030, Table 2.1, Rogelj et al., 2018)

3 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0562&from=EN>. This target is also in line with the Dutch climate agreement and the Spitsbergen Ambition.

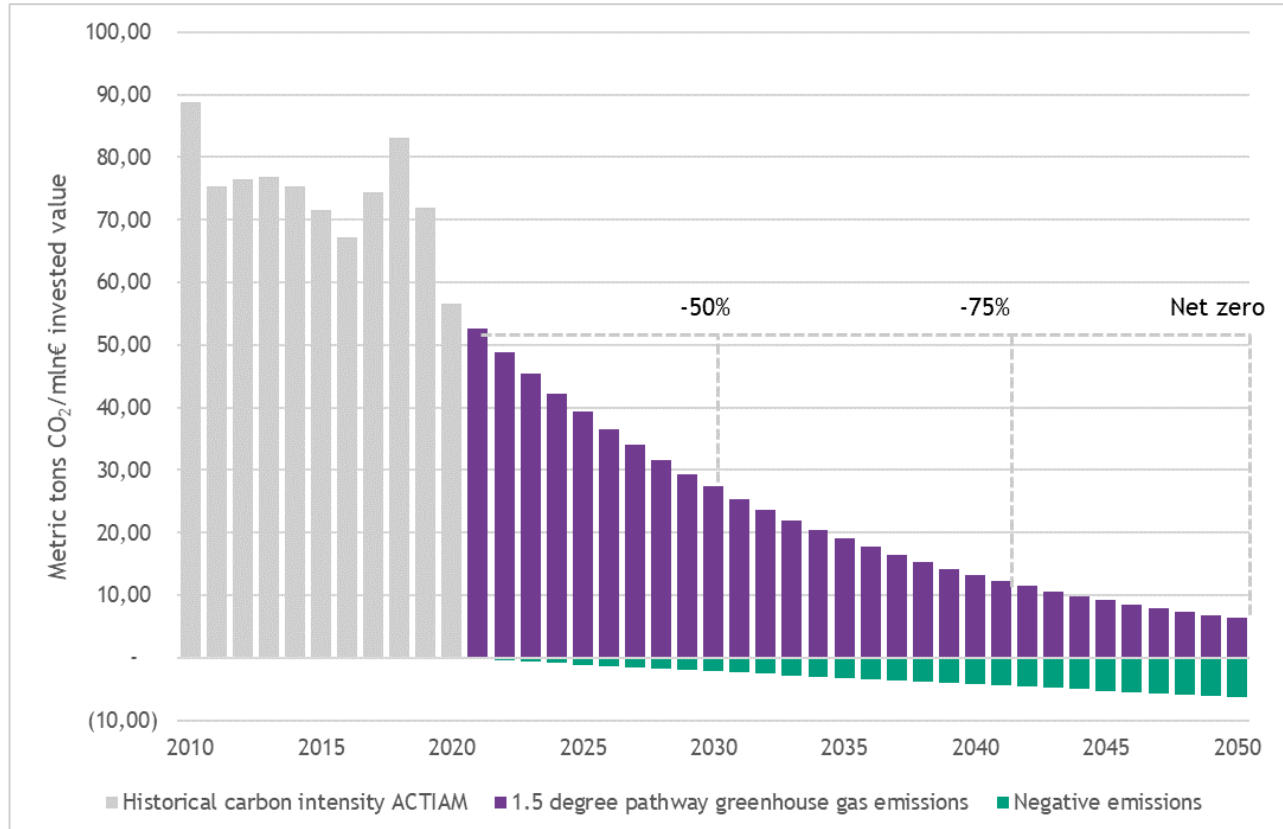
4 See e.g. Greenhouse gas emissions - Our World in Data

5 Chapter 2 – Global Warming of 1.5 °C (ipcc.ch), An investor guide to negative emission technologies and the importance of land use (vivedeconomics.com), WEF_Consultation_Nature_and_Net_Zero_2021.pdf (weforum.org)

6 WEF_Consultation_Nature_and_Net_Zero_2021.pdf (weforum.org)

In line with current views of the Science-Based Target Initiative (SBTI), ACTIAM sees carbon offsetting as an additional tool to reach additional emissions reduction beyond science-based targets, yet, only to a limited extent.⁷ Negative emissions from avoiding, sequestering or capturing and storing greenhouse gas emissions are expected not to exceed 10% of the 2020 emissions level.⁸ Finally, it is good to note that all developments naturally also depend on behavioural change. Considering the above, Figure 1 illustrates both the historical carbon intensity reductions as of 2010⁹ and the projected reductions pathway to 2050.

Figure 1: Greenhouse gas emissions reduction target pathway for ACTIAM



Even though ACTIAM has already significantly reduced the greenhouse gas emissions financed by its assets under management compared to 2010, the new targets are ambitious but deemed realistic for two reasons. Firstly, sectoral greenhouse gas reduction pathways indicate that for most sectors, the largest reductions will take place in the coming decade. Secondly, investments in low-carbon energy technologies and energy efficiency are expected to increase on average by a factor six in the coming decade.¹⁰ ACTIAM monitors progress by measuring the GHG emissions intensity and will continue to do so. Every 3 to 5 years progress will be evaluated and if the actions taken so far to reach the climate target do not yield the desired results, the strategy and associated actions will be adjusted.

The following sections explain how ACTIAM aims to achieve its targets as well as monitor and report on progress. For a detailed explanation of the methodology used to define the targets, see Appendix 2 Methodology Climate Target.

7 The SBTi principles for reaching net zero in the financial sector are still under development in 2021, but they will most likely include the use of carbon offsetting in a strategy to take responsibility for emissions that are yet to be reduced or that are unfeasible to eliminate. See: SBTi, Foundations for science-based net-zero target setting in the corporate sector, sept 2020. Foundations-for-net-zero-full-paper.pdf (sciencebasedtargets.org)

8 Negative emissions refer to the process of removing CO2 from the atmosphere, including enhancing existing natural processes that remove carbon from the atmosphere (increasing uptake by trees, soil, oceans or other carbon sinks) or using chemical processes such as underground storage with CCS technologies. See: FAQ Chapter 4 – Global Warming of 1.5 °C (ipcc.ch)

9 Note that in the earlier years the carbon emissions data quality is still relatively low, due to limited reporting standards.

10 Chapter 2 – Global Warming of 1.5 °C (ipcc.ch)

3 Strategy to reach ACTIAM's climate target

To achieve its climate target, ACTIAM follows a strategy of climate change mitigation. Climate change mitigation is defined as an anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases (IPCC, 2001a). ACTIAM takes its role as active stakeholder seriously and wants to actively contribute to decarbonization in the 'real economy'. Rather than reallocating portfolio positions, ACTIAM stimulates investee issuers to adopt business models that are in line with a 1.5°C pathway. This is supported by research that indicates that portfolio reallocations in the secondary market only lead to a limited change in the real economy if the reallocation represents a significant share of the market. A recent meta-analysis suggests that three measures are effective for achieving a real contribution to decarbonization. These are: funding low-carbon issuers or projects, engaging with issuers to help them improve and direct financial incentives to issuers to improve (Kölbelt et al., 2020).

This translates into the following three strategies ACTIAM adopts to reach its climate target:

1. Reduce greenhouse gas emissions of issuers;
2. Invest in solutions that reduce, capture and store greenhouse gas emissions or increase low-carbon energy supply;
3. Divest from issuers that lack the capacity to make the transition required for a net-zero economy.

Another strategy that is often mentioned is climate change adaptation. Although such strategy is necessary to mitigate risks stemming from climate change, it does not help to reach a net-zero greenhouse gas emissions target as set by ACTIAM.

3.1 REDUCE GREENHOUSE GAS EMISSIONS OF ISSUERS

To realize change in the real economy, ACTIAM stimulates issuers to reduce their greenhouse gas emissions. It does so in the following three ways.

- **Engagement:** Through engagement issuers are urged to set GHG emission targets in line with a 1.5°C pathway and to define actionable implementation plans to reach those targets. A growing number of issuers has defined such plans and evidence shows that they reduce their emissions faster than those that have not set targets yet.¹¹ In addition, through engagement, issuers are urged to enhance greenhouse gas sinks, for example through avoiding deforestation, as well as ecosystem restoration or land and marine biodiversity protection.
- **Voting:** Issuers that are not open or sensitive to engagement, are stimulated towards greenhouse gas emissions reductions through pro-climate voting behaviour at Annual General Meetings (AGMs) and by supporting or proposing pro-climate shareholder resolutions. Evidence shows that the number of climate related resolutions is going up, resulting in increased shareholder pressure on issuers.¹²
- **Stimulate a supportive community:** To achieve the net-zero objective, a systemic societal change towards energy transition and a low carbon economy is necessary. That is why ACTIAM will also use its influence and direct its activities to create a supportive community, for example by calling on the wider financial sector to accelerate the low-carbon transition or stimulating governmental bodies to step up their policies that stimulate GHG emission reductions and enhance conservation and restoration of natural carbon sinks.

3.2 INVEST IN SOLUTIONS THAT REDUCE, CAPTURE AND STORE GREENHOUSE GAS EMISSIONS OR INCREASE LOW-CARBON ENERGY SUPPLY

ACTIAM plans to increase its investments in solutions that reduce greenhouse gas emissions or increase low-carbon energy supply. That is, ACTIAM will enhance or develop investment strategies that accelerate the low-carbon transition. This includes investment in issuers generating renewable energy and developing the necessary technologies to generate low-carbon energy. It also includes investing in issuers that develop technologies and processes that use renewable instead of fossil-based sources or improve energy efficiency. Plus investment may shift more to issuers that produce products or technologies with lower GHG intensity, such as alternatives for animal-based or deforestation-linked commodities. Issuers developing such solutions enable others to reduce or reach net-zero greenhouse gas emissions. In addition, ACTIAM will invest in solutions that enhance carbon sinks or capture and store greenhouse gases, preferably nature-based solutions.

¹¹ SBTi, From Ambition to Impact, SBTi progress report 2020. SBTi progress report 2020 - Science Based Targets

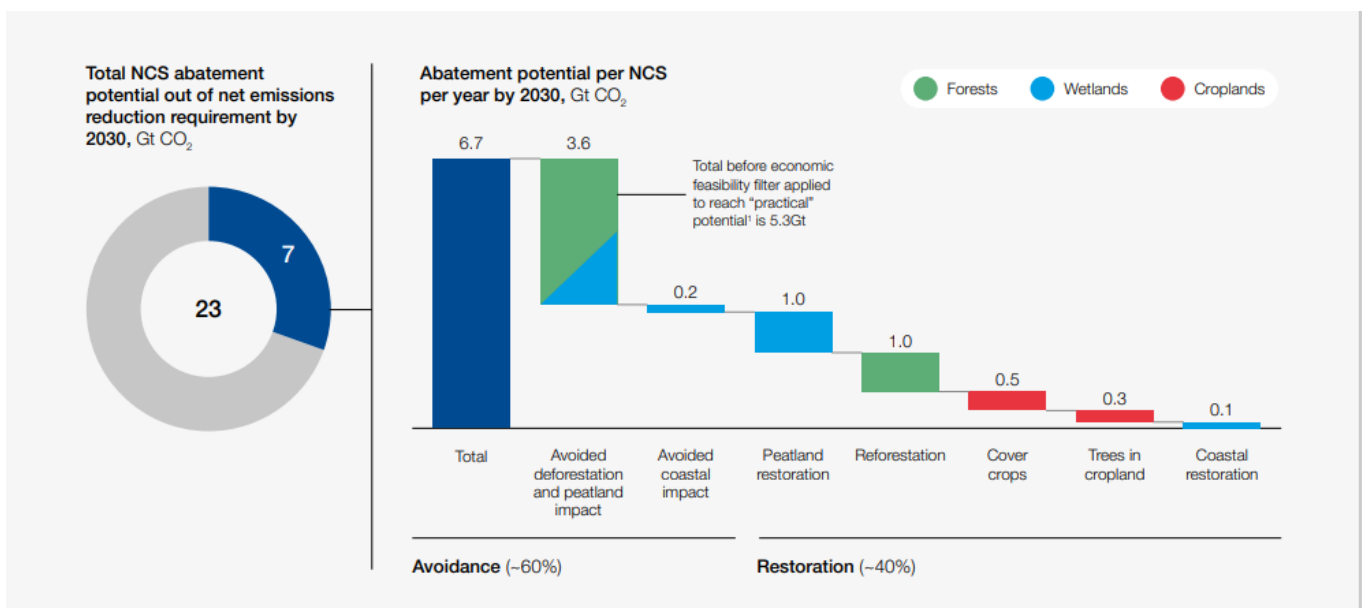
¹² European Tracker: Shareholder resolutions on climate change - ShareAction

There is a variety of investment strategies and asset classes through which ACTIAM will pursue investing in solutions, such as integrating criteria in equity and fixed income investment strategies, purchasing green bonds, participating in structured deals, blended finance opportunities and direct loans. In this way ACTIAM aims to finance carbon capture innovations or nature-based solutions that increase carbon sequestration or reduce land-based greenhouse gas emissions.

Another way in which ACTIAM will invest in solutions is by engaging issuers on the opportunities that enhance the low-carbon transition. As these are expected to be financially beneficial for their business model, services and product development. The selection of solutions on which issuers will be engaged will be EU Taxonomy aligned.

Next to the above actions, it is important to note that the actions ACTIAM takes to reach the water-neutral, zero deforestation and zero biodiversity loss targets it has set¹³ also contribute to reducing greenhouse gas emissions and enhancing carbon storage. Thus, these targets will help to reach ACTIAM's climate target. Specifically regarding deforestation, it is expected that avoiding deforestation and peatland drainage can contribute to around 60% of the 7 Gt CO₂ net emissions that nature-based solutions can globally abate per year by 2030 - see Figure 2.¹⁴

Figure 2: Potential abatement capacity of natural climate solutions (figure adopted from McKinsey, 2021)



At this point, investing in negative emissions is still challenging, given the malfunctioning carbon credit and offset markets. This is caused by the political uncertainty related to the carbon credit rollover from the Kyoto protocol to the Paris Agreement. It is also due to scientific and technical issues related to additionality, carbon leakage, carbon storage permanence and global warming potential. However, given the importance of nature-based solutions to achieve a 1.5°C world, it is expected that the architecture and standards will improve in the short term. Plus, the voluntary carbon offsets market is expected to grow in the coming years, thus making investment in conservation of forest and peatland more feasible.¹⁵

13 <https://www.actiam.com/en/sustainable-investments/ambitions/>
 14 http://www3.weforum.org/docs/WEF_Consultation_Nature_and_Net_Zero_2021.pdf
 15 Kepler & Chevreux (2021) Offsetting emissions and Paris alignment

3.3 DIVEST FROM ISSUERS THAT LACK THE CAPACITY TO MAKE THE TRANSITION REQUIRED FOR A NET-ZERO ECONOMY

ACTIAM already carefully screens if and how issuers prepare for the low-carbon transition. This applies to all investments; not only to equity or bond investments but also to structured loans and real estate investments. ACTIAM's Sustainable Investment Policy defines principles that limit investments in greenhouse gas intensive activities or lead to exclusion of fossil fuel activities such as thermal coal, coal-fired power plants, as well as unconventional exploration such as shale oil and gas, tar sands and deep sea and arctic drilling.¹⁶ To reach the targets presented in this document, the criteria to identify issuers that lack the capacity to adapt to the low-carbon transition will become stricter step by step. Consequently, lagging issuers from more sectors will be impacted. Firstly, through a total and accelerated thermal coal phaseout policy and a stricter screening on the plans issuers present to prepare for the energy transition, the transition required for a 1.5°C pathway is accelerated. Secondly, issuer specific GHG emission reduction requirement thresholds are made stricter over time, to raise the bar that separates issuers that are capable to adapt from those that are not. Issuers that progress too slowly will be divested from. Both measures will lead to divestment from issuers at certain moments in time. Naturally, varying sectoral emissions pathways are taken into account when thresholds are tightened. These criteria are worked out in more detail in section 4.

¹⁶ The principles to limit investments in greenhouse gas intensive activities are described in the ACTIAM Sustainable Investment Policy documents, see [a-actiam-sustainable-investment-policy.pdf](#)

4 Strategic Implementation Plan

To focus its efforts towards a global net-zero economy, ACTIAM has drafted a strategic implementation plan based on the key levers for change and ten priority sectors in which transitions are needed the most.

4.1 KEY LEVERS FOR CHANGE TO REACH A GLOBAL NET-ZERO ECONOMY

To reach a global net-zero economy, four main levers for change can be identified, all of which touch upon multiple sectors and activities:¹⁷

1. Reduce energy demand: improve energy efficiency of products, optimize production processes, and promote circular economy solutions.
2. Make the transition from fossil-based to renewable energy sources: phase out fossil-based sources and replace them by (green) hydrogen, bioenergy or renewables-based sources; electrify transport, buildings and industrial processes.
3. Make consumption patterns more sustainable and circular: shift consumption away from energy-intensive products and activities, move towards the use of sustainable soft commodities that do not lead to deforestation or land and marine biodiversity degradation, and shift agricultural production towards alternative proteins, sustainable production methods and less intensive tillage methods.
4. Remove greenhouse gases from the atmosphere and prevent fugitive emissions: scale carbon capture, utilization and storage solutions, remove CO₂ from the atmosphere, enhance natural carbon sinks by curbing deforestation and stimulating ecosystem restoration, and eliminate fugitive methane and CO₂ from industrial, waste management and agricultural processes.

It should be acknowledged that certain climate change mitigation measures can have adverse social and environmental effects. For instance, hydropower, wind power or nuclear power plants may impact large areas of land and receive social opposition. ACTIAM is not by definition in favour or against these solutions, but always assesses them in line with the sustainability principles underlying its Sustainable Investment Policy, following a holistic view of sustainability. For example, when looking at nuclear power plants, most of the IPCC scenarios for a 1.5°C pathway include a share of nuclear energy in the energy mix. There are different views on the potential harmful effects of nuclear energy such as the environmental impact of radioactive waste disposal. Although ACTIAM recognizes these and prefers other types of renewable energy where possible, for now there is insufficient scientific basis to fully exclude nuclear energy from reaching a 1.5°C pathway.¹⁸

4.2 PRIORITY SECTORS TO REACH A GLOBAL NET-ZERO ECONOMY

ACTIAM will focus decarbonization efforts on the top-10 sectors with the highest scope 1 and 2 greenhouse gas emissions intensity. These represent around 87% of total greenhouse gas emissions of the assets under management by ACTIAM at the end of 2020. The materiality of these sectors in the generation of greenhouse gas emissions is in line with other studies.¹⁹ Within each of these sectors ACTIAM will focus on the top-10 issuers with the highest scope 1 and 2 greenhouse gas emissions intensity. This stems from the fact that the highest greenhouse gas emissions in a sector in which ACTIAM invests are often attributable to a small number of issuers. That is, the top-10 issuers emit on average around 65% of the total greenhouse gas emissions of their respective sector. The top-10 sectors with the highest scope 1 and 2 greenhouse gas emissions intensity included in ACTIAM’s assets under management in 2020 are the following:

- | | |
|-------------------------------|--|
| ■ Metals & Mining | ■ Airlines |
| ■ Electric Utilities | ■ Capital Goods |
| ■ Construction Materials | ■ Paper & Forest Products and Containers & Packaging |
| ■ Chemicals | ■ Transportation & Logistics |
| ■ Oil, Gas & Consumable Fuels | ■ Food Beverage & Agriculture |

17 SR15_Chapter2_Low_Res.pdf (ipcc.ch), Climate-math-What-a-1-point-5-degree-pathway-would-take-final.pdf (mckinsey.com)

18 Technical assessment of nuclear energy with respect to the ‘do no significant harm’ criteria of Regulation (EU)

2020/852 (‘Taxonomy Regulation’), European Commission Joint Research Centre, Petten, 2021, JRC124193. Available at: https://www.politico.eu/wp-content/uploads/2021/03/26/JRC-report_March-2021-clean-Copy-printed.pdf

19 SR15_Chapter2_Low_Res.pdf (ipcc.ch), Climate-math-What-a-1-point-5-degree-pathway-would-take-final.pdf (mckinsey.com), Financial-Sector-Science-Based-Targets-Guidance-Pilot-Version.pdf

The list of top-10 sectors for scope 3 emissions intensity is similar to the above list. In addition, by reducing emissions among the top scope 1 and 2 emitters, the scope 3 emissions of other sectors are likely to reduce over time as well. As of 2030, ACTIAM will reconsider whether additional efforts are needed to specifically reduce scope 3 emissions. One exception to the above is the financial sector and in particular banks. Through their loan portfolio, scope 3 emissions are a material part of the total carbon footprint of banks. Plus, given the enabling role of this sector in stimulating the transition to a low-carbon economy, ACTIAM will also put efforts into reducing GHG emissions that are being financed by the top-10 issuers in that sector.

It should be kept in mind that the focus of the activities in the top-10 sectors is not only on reducing carbon emissions, but also on the other greenhouse gases. That is, reducing fugitive methane emissions in the mining and the oil & gas sectors, moving to alternative cooling technologies in the capital goods sector, enhancing the sequestration capacity of carbon sinks by forestry and agricultural issuers or marine activities, reducing deforestation by soft commodity producers and reducing methane emissions from agricultural activities. For a more detailed overview of the transition pathways per sector, see Appendix 1.

4.3 KEY PERFORMANCE INDICATORS FOR THE STRATEGIC OBJECTIVES

To reach the intermediate and final targets, ACTIAM sets Key Performance Indicators (KPIs) for each of the strategic objectives. It should be noted that given uncertainty of future developments, the KPIs are more specific for the coming 5-10 years than for the years coming after 2030.

4.3.1 2021-2030 Financing the transition to a low carbon economy

Activating behavioural change at issuers is the focus during this period. This will be done through engagement and stepwise stricter ESG integration in investment choices.

Reduce GHG emissions of issuers

To stimulate issuers to reduce their greenhouse gas emissions, engagement and voting activities will focus on creating and monitoring conditions that enable issuers to take steps towards net zero emissions and a 1.5°C pathway. For this, ACTIAM adopts the following KPIs:

- The top-10 emitting issuers in the top sectors have set science-based targets (SBTs) by 2023;²⁰
- The top-10 emitting issuers in the financial sector have set science-based targets by 2023;
- All issuers in the top sectors have set science-based targets by 2026;
- All issuers in the top sectors started implementing realistic plans to achieve their SBTs by 2030.

ACTIAM's voting at shareholder meetings will be in favour of shareholder resolutions that support these KPIs. In addition, engagement objectives will include these KPIs. ACTIAM will also monitor the impact of the engagement efforts and annually check whether the greenhouse gas emission of issuers follow a pathway towards net zero emissions.

Invest in solutions

ACTIAM is keen to develop investment strategies that particularly stimulate issuers to invest in solutions that prevent climate change. This may speed up the autonomous change of the market towards net zero emissions. For this, the existing sustainable funds will extend their stakes in issuers providing solutions.²¹ These may be technological solutions that reduce or reverse the greenhouse gas emissions of existing processes, or the development of new, climate-friendly or climate-positive products. Also, the transition to a low-carbon economy provides a strong investment opportunity, so ACTIAM will actively engage issuers on this. The following KPIs are formulated to monitor this:

- The green-to-brown ratio of ACTIAM's sustainable equity and fixed income portfolios compared to the green-to-brown ratio of the benchmark is minimally 4 at any time. This ratio captures green revenues from activities like renewable energy versus brown revenues from activities like thermal coal;

²⁰ This may refer to targets that have been approved by SBTi or by another relevant independent third party.

²¹ The ACTIAM Sustainable Investment Policy describes the instruments used to reach this for the ACTIAM portfolios. See [d-actiam-sustainable-investment-instruments.pdf](#)

- 25% of the fixed income portfolio invests in green bonds by 2030;²²
- A revenue share generated from products and services related to energy efficiency, renewable energy and green building from all assets under management increase of 50% by 2030 compared to 2020;
- 5% of all assets under management invested in carbon capture solutions (technical or nature-based) by 2030;
- Engage at least 20 issuers with a focus on the adoption of climate change mitigation solutions that are EU Taxonomy aligned by 2030.

Divest from non-adaptive issuers

The low-carbon transition is expected to become more (financially) material over time. As a result, through ESG integration, frontrunners in the transition will have a higher chance to be part of ACTIAM's investment solutions. Issuers that lack the capacity to adapt to the low-carbon transition will be divested from. ACTIAM will be particularly strict on the following activities related to the top-10 sectors listed in the previous section:

- Thermal coal: ACTIAM already excludes new coal-fired power plants exceeding 1000 MW and issuers with too high stakes in or plans for thermal coal activities.²³ Thermal coal activities increase the risk of stranded assets and therefore will be gradually phased out, with in any case a complete phase out from all ACTIAM investments by 2030. Thresholds will be tightened over the years, such that the share of revenues related to thermal coal activities of an issuer does not exceed 15% in 2025 and 5% in 2028²⁴. Thermal coal is regarded a key risk factor and barrier to achieving the energy transition that is required. Plus alignment with the IPCC 1.5°C pathway cannot be achieved without divesting from this activity;
- Activities related to dedicated storage and/or transportation of any fossil fuels, including gaseous or liquid fossil fuels: fuels transportation and storage should redirect towards renewable energy sources such as biofuels and hydrogen by 2030 to remain investable;
- Energy generation from gaseous or liquid fossil fuels at existing facilities with emissions above 100 gCO₂e/kWh measured on a life cycle basis: in most cases gas turbines exceed 100 gCO₂e/kWh, but they remain investable as a transition fuel until 2030. After 2030, they may remain investable for peak energy loads, but not for the base load;
- Automotive: car manufacturers should have at least a 50% share of electric vehicles in new car sales²⁵, which can be electrified or hydrogen-based, as of 2030 to remain investable;
- Real estate: issuers in the real estate sector are expected to have started taking measures to electrify their space and water heating, e.g. by replacing natural gas in 2030, as well as, applying energy efficient technologies and material efficiency;
- All other activities: divest from top-10 issuers in the top sectors that do not show GHG reductions aligned with the requirements for a 1.5 degree pathway by 2025.

Limits applied in the ACTIAM screening methodology will be tightened step by step to assure that issuers that do not comply with the above principles are divested. ACTIAM strives to align its investments to the EU Taxonomy definition of environmentally sustainable economic activities. As soon as the EU Taxonomy guidelines are officially adopted, more specific screening criteria and thresholds will be included in ACTIAM's Sustainable Investment Policy.

4.3.2 2030-2040 Accelerating the low-carbon transition

By 2030, most sectors are expected to have already achieved significant greenhouse gas emission reductions. Sectors for which reducing emissions is most difficult, such as for metals & mining, construction materials and airlines, are expected to have developed technologies that are promising for reaching greenhouse gas emission reductions in the years to follow. At the same time, the majority of issuers is expected to still require significantly more reductions to reach net-zero emissions.

More carbon capture solutions become available at more affordable rates. In case engagement has been unsuccessful to achieve the necessary and timely change in behaviour of issuers, proxy voting and shareholder resolutions requiring 1.5°C

22 Note: with green bonds we mean all categories of bonds that specifically finance projects contributing to a net-zero economy, so these can include green bonds, sustainable bonds, sustainability-linked bonds, KPI-linked bonds and more. ACTIAM uses its own Sustainable Bonds Assessment Framework to define the label and contributions of such bonds. ACTIAM will further develop methods to make the positive impacts of these bonds measurable.

23 ACTIAM excludes issuers with an average carbon intensity of more than 8,000 ton CO₂ per million USD revenue, issuers of which more than 15% of the total revenue comes from thermal coal mining, coal-fired power plants having expansion plans exceeding 1000 MW, as well as those having smaller plans (categorised 'at-risk').

24 These thresholds and timelines may be adjusted once the EU Taxonomy definitions are finalized.

25 UBS Global Research 25 March 2021 Energy Transition: How will \$140tn of investment be allocated across the energy supply chain; Climate-math-What-a-1-point-5-degree-pathway-would-take-final.pdf (mckinsey.com)

aligned business models will be used as escalation policy. Issuers in the top-10 sectors that show insufficient progress and do not meet the greenhouse gas reduction required by 2040 will be divested from.

KPIs per strategic objective have 2040 as target year unless stated otherwise and are as follows:

Reduce GHG emissions of issuers

- All issuers in non-top sectors need to have science-based targets and have started implementing realistic plans to achieve them;
- All issuers in non-top sectors show greenhouse gas emission reductions by 2035;
- In case of unsuccessful engagements with top sector issuers ACTIAM will use proxy voting and shareholder resolutions on 1.5°C aligned business models.

Invest in solutions

- 35% of the fixed income portfolio invests in green bonds or carbon capture solutions;
- 25% of the impact portfolios relate to investments in carbon capture solutions, including nature-based and agriculture-focussed sequestration as well as avoiding solutions.

Divest from non-adaptive issuers

- Divest from issuers in the top-10 sectors that do not meet greenhouse gas emissions reductions required for 1.5°C alignment or net-zero pathway;
- Divest from issuers with power generation activities that use biomass e.g. from pellet, wood, peat or waste. Power generation from biomass may be feasible during the transition to net-zero emissions, but is not a sustainable solution, especially not if air pollutant emissions and CO₂ are not captured.²⁶ Plus, the amount of land required for carbon sinks and food production will increase over the years, thereby competing with land used for biomass production.

4.3.3 2040-2050 Shifting towards a net-zero, nature-positive world

From 2040 onwards also issuers in other sectors are expected to have reduced greenhouse gas emissions or have already reached net zero. Plus, by 2050 it is expected that there is no longer a need to invest in carbon capture solutions, since issuers have integrated this into their business models. KPIs are:

- All issuers reach net zero emissions in 2050;
- Divest from all issuers that do not meet greenhouse gas emission reductions required for 1.5°C alignment by 2050.

²⁶ European Energy Transition 2030: The Big Picture (agora-energiewende.de) and SR15_Chapter2_Low_Res.pdf (ipcc.ch)

5 Monitoring and Reporting

ACTIAM has been using the Platform Carbon Accounting Financials (PCAF) method to calculate its carbon footprint. ACTIAM monitors and reports progress on the climate targets at an annual basis. Progress on targets will be monitored at all levels (all funds, sectors, assets and issuers) by the following metrics for scope 1, 2 and 3 emissions:

- Greenhouse gas emissions intensity (tonnes of CO₂ equivalent / EUR);
- Absolute greenhouse gas emissions (tonnes of CO₂ equivalent).

Given that emission intensity is a relative measure it is adjusted for inflation to capture the real greenhouse gas emissions reduction achieved.

Next to that, progress on reaching net zero targets at issuer level will be monitored annually with the following sector- and issuer-specific metrics:

- Sector-specific GHG emissions to output metrics e.g. CO₂ equivalent / MWh generated from fossil fuels for the Utilities and Oil, Gas and Consumable Fuels sectors
- Issuer-specific GHG emission reduction requirements to align with a 1.5°C scenario

Depending on the sector, scope 1, 2 or 3 emissions are monitored. At this point in time the issuer-specific metric concerns scope 1 emissions only.

In line with the Financial Sector Science-Based Targets guide, the ACTIAM targets will be recalculated and revalidated every 3 to 5 years and if necessary be strengthened.

Plus, it is expected that scope 3 emissions will gradually be added to the requirements for a 1.5°C portfolio alignment over time, following the EU Climate Transition Benchmark guideline and upcoming regulations. Given that data quality and standardized reporting by corporates on scope 3 emissions will improve over time, ACTIAM will review its target on scope 3 emissions in the upcoming 3 to 5 years.

6 Climate target for ACTIAM operations

The scope 1, 2 and 3 greenhouse gas emissions from ACTIAM's own operations are currently zero. This is achieved by decarbonizing the electricity and gas consumed and offsetting the greenhouse gas emissions associated with all other activities that cannot yet be decarbonized. Greenhouse gas emissions scope 1 include emissions from heating and lease cars. Greenhouse gas emissions scope 2 include emissions from purchased energy. Greenhouse gas emissions scope 3 stem from business travel, commuting, waste, paper and water.

In 2020, the greenhouse gas emissions that were offset amounted 125 tonnes:

- Scope 1: 49 tonnes
- Scope 2: 0 tonnes
- Scope 3: 77 tonnes

ACTIAM aims to bring scope 1 emissions down to 0 tonnes by 2030. Scope 3 emissions will be reduced as much as possible. In case emissions cannot be prevented they will be offset with Gold Standard Certified activities.

Appendix 1: Sector-specific pathways

To inform activities and priorities to reduce emissions and invest in solutions for certain sectors, this appendix provides a short summary of the expected pathways of the top-10 priority sectors ACTIAM identified to reach a net-zero economy. Pathways and levers for change are largely based on the McKinsey 1.5°C scenario analysis²⁷ and UNEP GAP Report.²⁸

Metals & mining

Metals (iron & steel)

- Carbon emission reduction by 2030: 25-30%, by 2050: 95-100%.
- Demand: more alternative and lightweight materials e.g. cars with less steel and stronger alloys will reduce demand for metals by 20% in 2050 vs. 2019.
- Energy efficiency: reduce production losses and increase lifetime of steel products. Increase the current recycling rate of approximately 1/3 by 10% in 2030 and by 20% in 2050, by switching from ore-based to scrap-based steel. Recover heat and reuse top gases for heat or power.
- Alternative energy: green hydrogen or biomass as reduction agent, replace natural gas with biogas.
- CCUS: retrofit existing furnaces and equip new ones with CCUS technologies.

Mining

- Carbon emission reduction by 2030: 65-70%, by 2050: 85-90%.
- Demand: demand for thermal coal used for power generation will drop to 0% by 2050 vs. 2016, whilst nickel and lithium increase, due to their role in the energy transition. Changes in demand for metallurgic coal used for cokes in primary steel production, will depend on the speed with which alternative production methods are developed.²⁹
- Efficiency: reduce fuel and electricity consumption by optimizing processes and operations.
- Alternative energy: electrify diesel- and gas-fuelled equipment.
- CCUS: Capture or prevent 100% of methane emissions from coal seams in mines.

Electric Utilities

- Carbon emission reduction by 2030: 70-75%, by 2050: 100%.³⁰
- Demand: increase in carbon-free electricity demand from other sectors. Plus, increase in electrification.
- Alternative energy: renewables replace thermal generation, with 80% of power demand sourced from renewables in 2050. Green hydrogen is used for buffers and seasonal balancing of the power system.
- CCUS: some natural gas generation will remain in 2050 to allow for grid flexibility, these will be retrofitted with carbon-capture technology.

Construction Materials

- Carbon emission reduction by 2030: 25-30%, by 2050: 75-80%.
- Demand: materials like cement will be substituted by alternative building materials like cross-laminated timber and prefab homes.
- Energy efficiency measures: improve kilns, optimize plant operations, including electricity generated from recovered heat waste. These measures are expected to improve by 15% in 2050.
- Alternative energy: more biomass and waste products to heat kilns, switch to renewable electricity and/or hydrogen.
- CCUS: retrofit existing kilns and equip new ones with CCUS, develop carbon curing technology.
- Raw material: substitute clinker feed with cementitious materials and industrial by-products.

²⁷ Investor Leadership Network (2020) Climate change mitigation and your portfolio

²⁸ [Emissions Gap Report 2020 | UNEP - UN Environment Programme](#)

²⁹ See <https://hydrogencouncil.com/wp-content/uploads/2017/11/Hydrogen-scaling-up-Hydrogen-Council.pdf>

³⁰ Includes emissions from oil, gas and coal

Chemicals

- Carbon emission reduction by 2030: 40-45%, by 2050: 85-90%.
- Demand: ammonia demand is expected to fall, since fertilization rates by farmers will reduce through precision agriculture and more organic fertilizers.
- Efficiency: optimize processes, precision use.
- Alternative energy: electrolysis-derived 'green' hydrogen production for use as feedstock and replace natural gas with biogas at ammonia production sites.
- CCUS: install CCUS in ammonia plants for process and combustion emissions, shift to 'blue' hydrogen production.
- Alternative inputs: search for (biobased/organic) alternatives as feedstock or improved (chemical) recycling.

Oil, Gas & Consumable Fuels

- Carbon emission reduction by 2030: 55-60%, by 2050: 90-95%.
- Demand: reduction in demand for oil & gas due to electrification of industry and transportation. Demand for virgin plastics is expected to peak by 2027 after which it will decline step by step due to improved (chemical) recycling, alternative materials and improved design.³¹ By 2050 oil and gas greenhouse gas emissions are expected to have reduced by 90% compared to 2016 levels.
- Efficiency: more efficient equipment and processes.
- Alternative energy: electrify onshore and near-shore operations, develop high-temperature electric crackers.
- Emissions: reduce flaring, venting and fugitive methane through e.g. vapour recovery units, leak detection and repair and investment in transport and export infrastructure.
- CCUS: carbon capture of the steam methane transforming process to produce hydrogen for refining.

Airlines

- Carbon emission reductions: 30%-35% by 2030, 80-85% by 2050.
- Demand: reduction in demand due to the introduction of carbon pricing, switch of short-haul flights to high-speed rail and improved remote meeting alternatives.
- Efficiency: modernizing fleets, improving operational efficiency, improving high-speed alternatives for shorter distances.
- Alternative energy: develop Sustainable Aviation Fuels (SAFs) based e.g. on biobased or waste materials or green hydrogen, by 2050 around 70% of the energy mixed consists of SAFs.
- CCUS: carbon offsetting to reduce emissions while alternative fuels are being developed.

Capital Goods

- Carbon emission reduction: 40-45% in 2030, 85-90% in 2050.
- Demand: increase in demand due to increase in global GDP.
- Efficiency: improve standards for energy reduction in buildings, such as insulation, appliances. Smart energy systems to optimize energy use per m².
- Alternative energy: electric heat pumps and cook stoves to replace fossil fuel, switch to hydrogen and replace coal, oil and natural gas with biofuels.

Paper & Forest Products + Containers & Packaging

- Carbon emission reduction: this sector has a double role to play in reaching decarbonization. On the one hand it can provide product substitution to fossil fuel and carbon-intensive products, and play an important role in sustainable forest management which can serve as a carbon sink. On the other hand, it needs to reduce greenhouse gas emissions associated with its processes.

³¹ [breakingtheplasticwave_mainreport.pdf \(pewtrusts.org\)](https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2022/06/breaking-the-plastic-wave-main-report)

- Demand: it is expected that given the increase in demand for carbon sinks, demand for forestry will go up.
- Efficiency: improve paper recycling by increasing rates of collected wastepaper and yield improvement of recycled fibres by improving the separation of contaminants³², deep eutectic solvents (DES) to reduce process energy intensity, transport efficiency.³³
- Alternatives: use renewable energy in processes and transportation.

Transportation & Logistics

- Carbon emission reduction: 30%-35% by 2030, 70-75% by 2050.
- Demand: expected to reduce due to rules and regulations on emissions that will reduce the number of kilometres travelled by passenger cars, plus more public transport and shared modes of transport will be used.
- Efficiency: improve engine and tires to enhance fuel efficiency per kilometre.
- Alternatives: gradual transition towards electric or hydrogen based transport.

Food, Beverage & Agriculture

- Carbon emission reduction: 50-55% in 2030, 100% in 2050.
- Demand: shifts due to potential increased meat demand in emerging markets but reduced meat demand due to shifts in consumer protein preferences in developed markets. Increased demand for locally produced foods, healthy foods and biological foods. Less food waste.
- Efficiency: through precision agriculture, improved technologies and improved seeds, greenhouse gas emissions from agriculture can reduce substantially and carbon sequestration in soils and vegetation can increase substantially.
- Alternative energy: shifts towards alternative proteins and shifts away from feed and livestock production leading to reduced competition for land, reduced greenhouse gas emissions from land use and potentially reforestation. To reach a 1.5°C scenario animal-based protein needs to halve and be replaced by plant-based protein in 2050.
- CCUS: nature-based and more eco-friendly cultivation methods will lead to increased sequestration in soils and vegetation.

³² [industrial_innovation_part_2_en.pdf\(europa.eu\)](#)

³³ [B4_1_Home_Print_Hojas\(cepi.org\)](#)

Appendix 2: Methodology Climate target

Determining the 1.5°C GHG emissions reduction pathway

The GHG emissions reduction pathway in line with a 1.5°C scenario is based on the EU Climate Benchmarks minimum technical requirements³⁴ that entered into application as of December 2020 as part of the EU Sustainable Finance Plan. The technical recommendation is to achieve at least 7% on average per annum greenhouse gas (GHG) intensity reduction at the portfolio level. It is derived from the IPCC's 1.5°C trajectory with no or limited overshoot (Years 2020-2030, Table 2.1, Rogelj et al., 2018). To follow this trajectory, the global economy should decrease its emissions by 7% per year. If a portfolio claims to represent a portion of the economy in line with the Paris agreement, it needs to follow this decarbonisation rate.

Currently, there is no widely accepted standard stipulating specific requirements for the GHG emission intensity reductions of sectors or individual issuers to align with a 1.5°C pathway. This is also highly complex, given the interdependencies and complexities of estimating future developments of (government) policies, technology, society and nature. Therefore ACTIAM selects the best available information from scientific research to align its strategy and implementation with a 1.5°C pathway.

Determining the ACTIAM climate target

As a member of the Technical Advisory Group and supporter of the Science-Based Target Initiative, ACTIAM aims to implement the specifications of the Financial Sector Science-Based Targets Guidance to the extent possible. Therefore, ACTIAM has followed the validation criteria and recommendations on GHG emissions inventory and target boundary, target time frame, target ambition, portfolio target setting requirements, reporting and recalculation. ACTIAM has set both intermediate and long-term targets that aim for a 1.5°C pathway, covering all scopes and assets under management. Given the asset classes ACTIAM invests in and the wide range of sectors, some of the KPIs are set in line with the portfolio target setting method of SBT Portfolio Coverage. Namely, ACTIAM set engagement targets in which issuers are required to commit to setting approved science-based targets and these are to be reached within a certain timeframe.

At the same time, ACTIAM considers setting targets as only a first step towards a low-carbon economy. Beyond that the implementation of these targets and the resulting effects they have are even more important. Since ACTIAM wants to achieve real behavioural change through the investments it makes on behalf of clients, it has therefore defined the overall climate target in terms of actual GHG emissions reductions.

Tracking progress on the ACTIAM climate target

The GHG emissions of ACTIAM's assets under management are calculated by using the method of the Platform Carbon Accounting Financials (PCAF). The calculation consists of several steps as detailed in the ACTIAM Carbon Footprint of Investments³⁵. This is done for each of the funds managed by ACTIAM. Given fund in- and outflows, and the development of market fluctuations over time, greenhouse gas emissions intensity rather than absolute greenhouse gas emissions is considered the most comparable metric to track progress on targets over time. To account for market fluctuations the enterprise value that underlies the intensity metric for corporates is corrected with an enterprise value inflation adjustment factor, as recommended by the Handbook for EU Climate Benchmarks and the Dutch Central Bank.³⁶

To monitor progress over time, it is necessary to account for closing and launching of new funds in different years. Therefore, the GHG emissions intensity at ACTIAM level is the sum of the AUM-weighted GHG emissions intensity of the individual funds. To calculate the percentage of reductions achieved, the GHG emissions intensity in 2020 is taken as a baseline, the year-on-year changes in AUM-weighted GHG emissions intensity are calculated geometrically.

³⁴ https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-climate-benchmarks-and-benchmarks-esg-disclosures_en

³⁵ https://www.actiam.com/4ad8a9/siteassets/4_verantwoord/documenten/nl/vb_co2.pdf

³⁶ EU Technical Expert Group on Sustainable Finance (2019) Report on benchmarks. Handbook of Climate Transition Benchmarks, Paris-aligned Benchmark and Benchmarks' ESG disclosure: https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/192020-sustainable-finance-teg-benchmarks-handbook_en_0.pdf; De Nederlandsche Bank N.V. (2021) Misleading Footprints Inflation and exchange rate effects in relative carbon disclosure metrics: <https://www.dnb.nl/media/3n1mbtnj/os-misleading-footprints.pdf>

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Abbreviations

AUM: Assets Under Management

CCUS: Carbon Capture, Utilisation and Storage

CO₂: Carbon emissions

GHG: Greenhouse gases

IPCC: Intergovernmental Panel on Climate Change

PCAF: Platform Carbon Accounting Financials

SAF: Sustainable Aviation Fuel

SBTI: Science-Based Target Initiative

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