



# Position paper on climate change and LGT's position

## LGT Group Foundation

August 2020



### LGT's high level position on climate change

**LGT acknowledges the necessity and urgency of mitigating and adapting to climate change, and recognizes its specific responsibility in addressing this challenge. As emphasized in the Paris Agreement, we now need to make “financial flows consistent with a pathway towards low carbon emissions and climate-resilient development”. Without the alignment of financial institutions, neither the 2°C, let alone the 1.5°C target cannot be met.**

Our unique ownership structure is linked to a long-term and holistic approach to doing business. LGT adopted a sustainable mindset early on long-term thinking and acting have always been one of the company's key traits. Safeguarding the environment, the prudent use of natural resources and the use of alternative forms of energy are important principles that we have set out in our Code of Conduct.

In 2018, we developed and implemented the LGT Sustainability Strategy 2025. The new strategy sets targets of a more binding nature for taking sustainability into even greater account across our entire company and product range. We have assigned climate change-related issues an important role in this strategy, e.g. by focusing explicitly on Sustainable Development Goal (SDG) 7 "affordable and clean energy" and SDG 13 "climate action". Below, we highlight how we specifically contribute to mitigating and adapting to climate change through a wide range of measures in our core businesses, Private Banking and Asset Management, as well as in our balance sheet and operations.

#### Climate change in our core businesses

We are convinced that as a financial institution, we can make the greatest positive contribution to climate protection through our investments and by providing good and responsible investment advice – two of our core activities. We believe that the sustainable allocation of capital gives us the opportunity to make a significant contribution to resolving environmental and social problems. Taking climate change into account means on the one hand ensuring that our own and our clients' assets are protected from climate-related risks. On the other hand, it means re-directing the capital of institutional and private investors to align with the Paris Agreement and in doing so, capture investment opportunities arising from the transition to a low-carbon economy.

As an important step in this direction, we have adopted a group-wide *thermal coal exclusion policy*. Coal is the most harmful energy source in terms of carbon emissions and coal-fired power production is not compliant with any scenario limiting global warming to 2°C or less. We have therefore decided to exclude thermal coal production and power generation from thermal coal from all our investments.

#### Asset Management

Our **asset management business** has been offering sustainability funds since 2009. Over the last decade, we have continuously expanded our range of sustainability funds, predominantly through the integration of sustainability criteria into the investment processes of our existing traditionally managed funds. Today, LGT Capital Partners' range of sustainability funds encompasses 14 funds in the equity, fixed income and multi-asset class segments with a total volume of CHF 8.6 billion. We manage another CHF 3.3 billion in mandates for institutional clients.

Climate change-related aspects play an important role in all our investment decisions. The LGT ESG Cockpit, a proprietary rating tool that assesses the environmental, social and governance (ESG) footprint of instruments, helps us to integrate sustainability considerations into the selection of securities. Using the tool, we assess companies and countries and calculate an ESG score for each; using

20 different ESG criteria, including criteria that explicitly target climate change. For example, the assessment considers how a company manages its carbon emissions (based on current greenhouse gas emissions and the change in emissions in recent years), and to what extent it uses renewable energy sources. When we select investments for our funds and mandates, we strive to achieve an average carbon footprint for our portfolios, that is at least 20 percent below that of the respective benchmark.

In order to combat climate change and ensure that our portfolios support the transition to a low-carbon economy, we have also decided to exclude unconventional oil and gas extraction activities from our sustainability funds due to their severe climate, but also environmental and societal risks. Unconventional oil and gas extraction comprises the extraction of tar/oil sands, shale oil, shale gas and Arctic drilling. In the conventional oil and gas extraction sector, we will limit our investments to companies, that are firmly committed to the energy transition and who use a substantial share of their cash-flows to build renewable energy capacity.

Through our private market fund, Crown Infrastructure, we have invested in wind and solar power in the US. The generation of low-emission electricity from these renewable energy sources can contribute to SDG 7 "affordable and clean energy" and SDG 13 "climate action".

### Private Banking

In 2017, our **private banking business** introduced a sustainability rating for equities, bonds, funds and ETFs. The rating provides a sustainability assessment of investable securities by translating the ESG scores determined by the LGT ESG Cockpit into a star rating ranging from one star (poor) to five stars (excellent). The rating gives our private clients access to the longstanding expertise in ESG assessments that we have gained in our asset management business and helps them to include ESG aspects in their investment decisions. It enables our clients to focus on so-called sustainability leaders, which mitigate climate change and are better prepared for climate-related risk.

Since 2019, we have been offering our private clients the LGT portfolio management mandate "Focus Sustainability", a holistic and forward-looking wealth management solution that aims to have a positive impact on people and the planet while delivering long-term value creation. Following a best-in-class approach, we focus on investments with an LGT Sustainability Rating of four and five stars. As with our sustainability funds, climate change mitigation also plays a decisive role in the investment decisions made for this mandate. The significant reduction of the environmental footprint (in particular CO<sub>2</sub> emissions) compared to the respective benchmark, is a key element in instrument selection. The under-weighting of CO<sub>2</sub>-intensive industries, the consideration of companies supporting the energy transition as well as the exclusion of companies with exposure to e.g. the extraction of tar or oil sands, are further climate change-related measures that we have undertaken. Another important element of the mandate is investments in sustainability themes, such as green bonds or water that increase exposure to companies directly contributing to mitigating climate change or to adapting to it.

We also train and sensitize all our employees to sustainability topics in general and to climate change specifically. Our client relationship managers undergo dedicated training so that they can provide our clients with competent advice about these increasingly important investment aspects.

### LGT Lightstone and LGT Venture Philanthropy

We would also like to highlight two areas of LGT that have contributed most directly to the achievement of the SDGs – our **impact investing platform LGT Lightstone and our philanthropic activities** conducted through **LGT Venture Philanthropy**.

LGT Lightstone invests in innovative and rapidly-growing businesses that provide attractive and scalable solutions to social and environmental problems. Over the last five years, we have built up a portfolio of private equity investments in approximately 40 companies with a total investment of over CHF 500 million. These businesses are pioneering scalable and innovative solutions for deep long-term impact, also in climate change-related areas. The companies we have invested in include AMP Energy India, a renewable energy platform focused on developing power plants and storage capacity in solar, hybrid solar, and over time, wind-based energy solutions in India. We have also invested in an electric vehicle (EV) fleet operations company called Lithium, which manages India's EV 4-wheeler fleet, providing transportation services to corporate employee in selected cities. Another example of the companies that LGT Lightstone supports is M-Kopa, a leading Kenyan provider of pay-as-you-go solar home systems. M-Kopa's devices have so far displaced 700 000 metric tons of CO<sub>2</sub>.

LGT Venture Philanthropy, on the other hand, is a charitable foundation, that deploys philanthropic capital to organizations engaged in healthcare, education and the conservation of ecosystems. The protection of biodiversity and ecosystems is a critical dimension in the fight against climate change as our maritime and terrestrial ecosystems play a pivotal role in the storage of carbon emissions.

## Climate change with respect to our operations

While the majority of our impact on climate change occurs through our investment activities, we also make sure to reduce our direct impact by managing our business operations in a sustainable way.

In order to ensure progress is made in this area, the measures we have undertaken are linked to ambitious targets set out in our Sustainability Strategy 2025. To achieve these targets, we are reducing energy consumption, purchasing renewable energy and offsetting unavoidable CO<sub>2</sub> emissions. We use advancements in technology to optimize our operations in an environmentally sustainable manner and we sensitize our employees. Our concrete targets include:

- reducing CO<sub>2</sub> emissions/FTE<sup>1</sup> by 20 percent;
- reducing energy consumption/FTE by 30 percent
- using 100 percent renewable energy across all our locations worldwide;
- reducing paper consumption/FTE by 30 percent; and
- requiring all suppliers to fulfil minimum sustainability standards and purchase only sustainably-produced material

The energy efficiency of buildings plays an important role in reducing greenhouse gas emissions. We continuously monitor and optimize the energy consumed at our offices, e.g. by using heat exchangers to convert the waste heat from cooling units into heating energy, or by using photovoltaic and solar units to produce electricity and heat. In Liechtenstein, we purchase 100 percent renewable energy and approx. 8-10 percent of total electrical energy consumption is produced through our own photovoltaic installations.

CO<sub>2</sub> emissions that cannot be avoided are being offset through the purchase of CO<sub>2</sub> certificates, which direct money into projects that save CO<sub>2</sub>. Employees are encouraged to reflect on the necessity of business trips and to consider other means of collaboration such as video conferences. In addition, they are offered financial incentives to use public transportation for their daily commute. We also make sure to provide our employees and clients with the infrastructure necessary for charging electric cars.

We have been a partner of Swiss Climate Foundation since 2012, to whom we donate the net refunds from the CO<sub>2</sub> tax. The Swiss Climate Foundation promotes various innovation and energy efficiency projects of small and medium-sized enterprises that contribute to climate protection. In another measure to improve the sustainability of our business, our Supplier Code of Conduct requires suppliers to commit to protecting the environment and sustainable resource consumption.

Finally, climate change can only be mitigated through the coordinated efforts of different actors. To this end, we engage in a number of international initiatives relating to sustainability in general and climate change in particular. We have been a signatory to the Principles for Responsible Investment since 2008 and a partner of the UN Global Compact since 2012. We are also a member of the World Economic Forum Alliance of CEO Climate Leaders. In this context, our Group CEO signed the open letter from 50 CEOs who preside companies with a total of USD 1.3 trillion in revenues in 2017. This letter was released ahead of the 24th Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) in November 2018.

In combination, all these measures provide a sound basis for making a substantial contribution to the fight against and adaptation to climate change. However, in keeping with our commitment to long-term thinking and acting, we acknowledge that this is only one step on a challenging but exciting journey.

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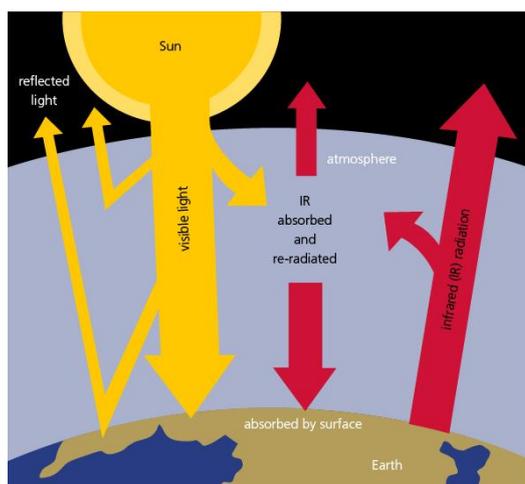
<sup>1</sup> The baseline year is 2017 and the reductions are to be understood per full-time equivalent.

## Climate Change – a "systemic threat to humankind"

The scientific evidence leaves no room for doubt: climate change is taking place at an ever-increasing speed and is one of the most pressing issues of our times. In the words of UN Secretary General Antonio Guterres, it is even "the most systemic threat to humankind".<sup>2</sup> Climate change is a threat multiplier that potentially reverses many of the gains made for humanity over recent decades while further aggravating challenges such as health, poverty and hunger.<sup>3</sup> Climate change disrupts national economies, affects lives, and entails massive costs for people, communities and countries both today and in the future.<sup>4</sup>

### Let's take a step back – why is the climate changing?

At the root of climate change lies global warming, which is happening at an unprecedented speed, and has been significantly influenced by human activities since the beginning of industrialization in the 19<sup>th</sup> century. And it will have many serious and potentially damaging effects in the decades ahead. Global warming triggers a massive melting of snow and ice, leads to a significant rise of sea levels, and it increases climate extremes and weather patterns such as heatwaves, snowfall, floods, heavy storms and wildfires across the globe.



How did we get here? Light from the sun passes through the atmosphere and is absorbed by the earth's surface, warming it. Greenhouse gases (GHG) act like a blanket, trapping heat near the surface and raising temperatures. This is a naturally-occurring process that warms the planet. But human activities are increasing the amount of GHGs and trapping more heat, which will affect the earth's climate for decades and even centuries. Emissions from carbon dioxide, the main GHG, have increased by about 40 percent compared to the industrial era. This change has intensified the greenhouse effect, driving an increase in global surface temperatures and other widespread changes in the earth's climate. And carbon dioxide continues to be added to the atmosphere through the combustion of fossil fuels such as gas, oil and coal, deforestation and changes in land-use, at a rate far faster than it can be removed by naturally-occurring processes. This creates a long-lasting reservoir of the GHG in the atmosphere and in the oceans which drives the climate to an ever warmer state, similar to the effect of the glass of a greenhouse.<sup>5, 6</sup>

So far, human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with manifold consequences for humans and natural systems. Yet, this warming pales in comparison to the at least 2.5°C rise that the Intergovernmental Panel on Climate Change (IPCC) forecasts over this century if we do not act now and significantly and swiftly curb GHG emissions. More recently it has been estimated that continuing to pursue current policies would put the world on a trajectory to warm by anywhere between 3 and 4°C relative to pre-industrial levels.<sup>7</sup>

But what are the direct consequences and future impacts of climate change and what can we do to mitigate and adapt to it? Can we still limit global warming to 1.5°C as suggested by the IPCC? And what is LGT's position on climate change? These questions are addressed below.

### Direct consequences and future impacts of climate change

Changes in climate have already impacted natural and human systems across all continents and oceans, and their consequences can be increasingly felt. Natural and human systems are very sensitive to changing climates. The long-term well-being of populations and the smooth functioning of many of our economic processes depend on stable and functioning ecological systems, which are directly linked to the climate. The longer we continue to emit GHGs at the current level, the higher the risk that we have a severe, pervasive, and most notably, irreversible impact on certain ecosystems such as oceans, arctic regions and forests, as well as on countless animal and plant species, people and the economy.<sup>8</sup> Here is an outline of some of the most fatal consequences thereof.

### Environmental consequences

Climate change has devastating consequences for a number of ecosystems that are key to the flourishing of our planet. Oceans are among the most heavily impacted ecosystems. Oceans are vital "carbon sinks". They absorb huge amounts of carbon dioxide and prevent it from reaching the upper atmosphere. But increased water temperatures and high CO<sub>2</sub> concentrations make oceans more acidic. Ocean acidification impacts the overall structure of marine ecosystems. Changes can already be felt at a warming of 1°C. A

<sup>2</sup> <https://www.un.org/sg/en/content/sg/press-encounter/2018-03-29/secretary-generals-press-encounter-climate-change-qa>

<sup>3</sup> <https://unfccc.int/news/impacts-of-climate-change-on-sustainable-development-goals-highlighted-at-high-level-political-forum>

<sup>4</sup> UN SDG 13

<sup>5</sup> Cf. Center for Climate and Energy Solutions, Climate Basics for kids, URL: <https://www.c2es.org/content/climate-basics-for-kids/> (as of 17 February 2020)

<sup>6</sup> Cf. Global Change.gov, U.S. Global Change Research Program; climate change: what's happening and why, URL: <https://www.globalchange.gov/climate-change/whats-happening-why> (as of 17 February 2020)

<sup>7</sup> IPCC (2018), Special Report: Global Warming of 1.5°C, page 9 f.

<sup>8</sup> IPCC 2014

warming of 1.5°C and above would reach critical thresholds.<sup>9</sup> For example, 70 to 90 percent of coral reefs would be at risk, if the increase in global warming is stabilized at 1.5°C. If warming increases to 2°C virtually all coral reefs will be lost. Coral reefs not only protect coastal areas from surging seas, they also play a vital role for 25 percent of fish species that spend some part of their life cycle in reefs.<sup>10</sup>

Polar regions are also crucial for regulating our planet's climate, but they are very vulnerable to climate change. In the Arctic, average temperatures have increased by about 5°C over the last 100 years far above the global average. In the next few decades, there will be almost no summer sea ice cover left in the Arctic. This will affect the entire northern hemisphere.<sup>11</sup> In 2019, the Arctic experienced the hottest summer in temperature measurement history, with temperatures in some areas up to 8°C above average. Rising temperatures lead to a thawing of permafrost, which additionally releases vast amounts of greenhouse gases thereby accelerating global warming. In June 2019, the heat triggered Arctic wildfires that emitted as much carbon dioxide into the atmosphere as Sweden does in one year.<sup>12</sup>

Climate change also influences forest ecosystems across the globe. The capacity of forests to absorb CO<sub>2</sub> makes them a vital factor in stabilizing the climate.<sup>13</sup> Higher levels of carbon dioxide impact plant growth, and changes in temperature and rain patterns increase the risk of pest outbreaks, fires and drought.<sup>14</sup> The vulnerability of forests is further accentuated by human impacts from land development and the suppression of natural periodic forest fires.

Last but not least, climate change has significant impacts on many aspects of biodiversity across all ecosystems. Many terrestrial, freshwater and marine species have already moved their geographic ranges, and they have changed their seasonal activities and migration patterns. But climate change is happening too quickly for many species to adapt. A 1.5°C average rise may put 20 to 30 percent of species at risk of extinction, and if the planet warms by more than 2°C, most ecosystems will experience significant decline in species and habitat loss<sup>15</sup>.

These impacts affect the long-term stability of the natural world and the many benefits and services that we derive from it such as the provision of food and other raw materials, as well as the pollination of crops, the prevention of soil erosion and water purification.<sup>16</sup> Biodiversity is further under pressure from land degradation, fueled by unsustainable agricultural practices. It is estimated that losses in biodiversity and ecosystem services may be costing as much as 10 percent of the world's annual global gross product.<sup>17</sup> The loss of biodiversity is expected to hurt people as much as climate change because it undermines our ability for poverty reduction, food and water security, human health and the overall goal of leaving nobody behind.<sup>18</sup>

### Consequences for people

For humans, climate change can have far-reaching implications for their health, safety and security. These physical risks primarily arise from climate- and weather-related events, such as droughts, floods, storms, wildfires and rising sea-levels.

Changes in precipitation or the melting of ice and snow affect the quantity and quality of water resources across the globe, and rising sea levels result in flooding and the erosion of coastal and low-lying areas. It is estimated that a 2°C rise in temperature will lead to a rising of sea levels of 0.36 - 0.87 meters by 2100.<sup>19</sup> Given that about 40 percent of the world's population live within 100 kilometers of a coast, the number of people potentially exposed to and displaced as a result of these threats is tremendous. A 2°C rise in temperature could moreover lead to chronic water shortage for as much as 20 percent of the world's population (about 5 percent are exposed at present).<sup>20</sup>

Climate change is expected to exacerbate health problems that already place a major burden on vulnerable segments of population such as children and the elderly. It promotes infectious diseases, including water-borne ones such as diarrhea, and it extends the geographic range of tropical diseases like malaria or dengue. Europe is already experiencing a rise in tropical diseases such as malaria, which is thought to be linked to climate change.

More frequent and intense floods and drought will deteriorate food security and threaten to increase malnutrition and undernutrition in a number of developing countries, leading to the displacement of people. Unbearable heat threatens to make certain areas uninhabitable, thereby potentially triggering armed conflicts over scarce resources and causing millions of climate refugees.<sup>21</sup> In short, the human suffering from and the socioeconomic costs of health problems caused by climate change are considerable.<sup>22</sup>

<sup>9</sup> <https://www.wwf.org.uk/effectsofclimatechange>

<sup>10</sup> <https://www.weforum.org/agenda/2018/04/what-happens-if-all-the-coral-reefs-die>

<sup>11</sup> <https://www.wwf.org.uk/effectsofclimatechange>

<sup>12</sup> <https://www.theguardian.com/world/2019/jul/12/arctic-wildfires-c02-carbon-emissions-same-sweden> and <https://public.wmo.int/en/media/news/july-matched-and-maybe-broke-record-hottest-month-analysis-began>

<sup>13</sup> <https://www.iucn.org/resources/issues-briefs/forests-and-climate-change>

<sup>14</sup> <https://climatechange.ita.org/land-types/forest-lands/>

<sup>15</sup> IPCC (2018), Special Report: Global Warming of 1.5°C, page 9 f.

<sup>16</sup> <https://www.iucn.org/commissions/commission-ecosystem-management/our-work/cems-thematic-groups/ecosystem-services>

<sup>17</sup> <https://www.ipbes.net/news/media-release-worsening-worldwide-land-degradation-now-%E2%80%98critical%E2%80%99-undermining-well-being-32>

<sup>18</sup> <https://www.dw.com/en/why-biodiversity-loss-hurts-humans-as-much-as-climate-change/a-48579014>

<sup>19</sup> [https://report.ipcc.ch/sr15/pdf/sr15\\_spm\\_final.pdf](https://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf)

<sup>20</sup> WEF\_Climat e Change-Dynamic-Briefing.pdf

<sup>21</sup> [https://www.focus.de/wissen/klima/klimakatastrophe-forscher-sehen-menschheit-mitte-des-jahrhunderts-am-ende\\_id\\_10802940.html](https://www.focus.de/wissen/klima/klimakatastrophe-forscher-sehen-menschheit-mitte-des-jahrhunderts-am-ende_id_10802940.html)

<sup>22</sup> <https://unfccc.int/news/climate-change-impacts-human-health>

## Economic consequences

As global temperatures continue to increase, the socio-economic impacts of climate change also accelerate.<sup>23</sup> Their extent and nature depend on the sector and on the location. Sectors such as agriculture, forestry, energy and tourism, which rely heavily on certain temperature and precipitation levels are particularly vulnerable. Low-lying, flood-prone areas are at a high risk of becoming unlivable.

In 2017 alone, it is estimated that disasters linked to weather- and climate-related risks have been responsible for thousands of casualties (such as heat-related deaths) and more than EUR 270 billion in losses worldwide.<sup>24</sup> What is more, in 2018 only half of the economic losses caused by natural catastrophes were covered by insurance. Insurance companies increasingly deem property in certain areas too risky to insure, thereby leaving the costs for the losses to be carried by families and businesses.<sup>25</sup>

The EU estimates that a 3.5°C warming, which could occur if no further action is taken, would cause damages amounting to at least EUR 190 billion in the EU alone. This constitutes a net welfare loss of 1.8 percent of its current GDP. The cost of river flood damages alone could exceed EUR 10 billion.<sup>26</sup>

Natural disasters such as floods not only damage property and infrastructure, but also lead to the disruption of global supply chains.<sup>27</sup> For example, Thailand's heavy floods in 2011 disrupted business for thousands of companies that relied on Thai suppliers particularly in the hard disk drive industry. One of the world's leading hard disk drive producers lost 45 percent of its shipments, and several others had to close down factories.<sup>28</sup>

The effects of climate change on human health, especially those resulting from heat waves, also negatively affect labor productivity. Average outdoor labor productivity could decline by around 10 to 15 percent in southern European countries by the end of the century and by 2 to 4 percent in northern European countries.<sup>29</sup> Changes in precipitation patterns, more frequent extreme weather events, and reductions in water availability also lead to reduced agricultural productivity. By the end of the 21<sup>st</sup> century, global agricultural yields could decline by as much as 15 percent for staple crops such as maize.<sup>30</sup>

## Mitigating climate change and adapting to it

The scientific evidence is clear: the more GHG emissions we cause, the more we heat up the planet with even more devastating consequences than the ones described. In order to stop global warming at a certain temperature (e.g. at a rise of 1.5° or 2°C) and prevent the worst, we therefore need to significantly restrict our emissions. Once we have achieved this goal, we need to reduce them to net zero by 2050 at the latest.<sup>31</sup>

Mitigation measures play a key role in fighting climate change. Climate change can be *mitigated* by reducing the levels of heat-trapping GHGs in the atmosphere. This can be achieved by reducing the sources of these gases, and by enhancing the natural "sinks" (such as oceans, forests and soil) that accumulate and store these gases. Mitigation reduces the expected level of climate damages. It is estimated that early and ambitious mitigation action can help economies avoid half of the damages to GDP by 2060.<sup>32</sup>

One of the main targets of mitigation measures is our energy system, which accounts for over two-thirds of global GHGs emissions<sup>33</sup>. If we continue to produce energy the way we have to date, this will lead to a doubling or even tripling of CO<sub>2</sub> emissions between now and 2050. We therefore need to decarbonize the energy system by substituting fossil energy with renewable energy sources (such as solar and wind power) and low carbon power (such as hydroelectric power) very quickly and comprehensively.<sup>34</sup>

At the same time, we need to significantly increase the efficiency of our energy use. Depending on the sector in question, different measures can be adopted.

In *transportation*, the main CO<sub>2</sub> emissions result from fuel combustion. However, in order to lower our energy consumption, we need to not only improve energy efficiency, but also to change our mobility patterns by cutting down on air travel, expanding public transport, resorting to zero-emission vehicles,<sup>35</sup> and by switching to different types of mobility as well as smart transportation systems.

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<sup>23</sup> <https://unfccc.int/news/state-of-the-climate-in-2018-shows-accelerating-climate-change-impacts>

<sup>24</sup> WEF\_Climate Change-Dynamic-Briefing.pdf

<sup>25</sup> <https://www.cbc.ca/news/business/it-s-a-problem-for-society-climate-change-is-making-some-homes-uninsurable-1.5173697>

<sup>26</sup> <https://ec.europa.eu/jrc/en/research-topic/impacts-climate-change>

<sup>27</sup> Bank\_of\_England\_quarterly17\_climate\_change

<sup>28</sup> <https://www.bsr.org/en/our-insights/blog-view/climate-change-supply-chains-go-hand-in-hand>, auch: <https://www.theguardian.com/technology/2011/oct/25/thailand-floods-hard-drive-shortage>, und: <https://www.smh.com.au/technology/thai-flooding-impact-on-tech-companies-suppliers-20111103-1mw47.html>; [https://www.pcworld.com/article/248775/nec\\_to\\_cut\\_10000\\_workers\\_forecasts\\_13\\_billion\\_loss\\_in\\_year\\_through\\_march.html](https://www.pcworld.com/article/248775/nec_to_cut_10000_workers_forecasts_13_billion_loss_in_year_through_march.html)

<sup>29</sup> <https://ec.europa.eu/jrc/en/publication/peseta-iii-climate-change-impacts-labour-productivity>

<sup>30</sup> WEF\_Climate Change-Dynamic-Briefing.pdf

<sup>31</sup> Proclim\_Brennpunkt\_Klima\_CH\_Minderung\_2016.pdf

<sup>32</sup> OECD Climate Change\_2015

<sup>33</sup> International Energy Agency, IEA (2018), CO<sub>2</sub> Emissions from Fuel Combustion, Highlights, page 3

<sup>34</sup> Proclim

<sup>35</sup> Proclim

In *buildings*, population growth and heightened demand for cooling systems due to higher temperatures and acute heat waves are expected to lead to an increase in energy demand of 80 percent by 2050. Mitigation requires that we improve the insulation of buildings and that we substitute fossil heating systems with solar or geothermal heat in order to cut down emissions.<sup>36</sup>

In *industrial production*, emissions can be cut by up to 50 percent if energy is used more efficiently.<sup>37</sup> Moving from a linear to a circular economy, in which materials are reused, re-manufactured and recycled, represents another important step towards mitigating emissions.

Another factor in climate change is *deforestation*, which releases massive amounts of CO<sub>2</sub> into the atmosphere by destroying vital carbon sinks. The ongoing destruction of forests around the world and in particular of the Amazon, which stores 20 percent of all the carbon in the world's biomass, is especially fatal. Halting this trend while at the same time planting trees elsewhere is therefore of utmost importance.

Finally, we also need to address *livestock farming*. A total of 23 percent of GHG emissions from human activities derive from agriculture, forestry and other land use.<sup>38</sup> Cows and sheep which produce large amounts of methane as part of their digestion process<sup>39</sup>, as well as the use of fertilizers, which contain nitrogen and produce nitrous oxide emissions, play a relevant role in global warming. While farmers need to lower their emissions by using less fertilizers and by restoring forests on their land, the human diet should become more plant instead of animal-based.

Along with mitigation, the world also needs to invest in measures that support *adaptation* to actual or expected future climate change, which is already in the pipeline and cannot be stopped. Adaptation also obliges us to make the most of any potential beneficial opportunities linked to climate change (such as longer growing seasons or increased yields in some regions). Exemplary adaptation measures include using scarce water resources more efficiently, protecting buildings from extreme weather events, constructing flood defenses, and developing crops that are less sensitive to drought.

### Can we still achieve the promises made under the Paris Agreement (a 1.5°C world)?

All of the scenarios and pathways for climate change indicate that we have no choice but to urgently and substantially reduce greenhouse gas emissions on the one hand, and to adapt to the new circumstances on the other hand, for the sake of humanity and the planet as a whole. Climate change and its devastating consequences cannot be stopped, but it can and has to be limited. Any success depends on imminent ambitious efforts and globally coordinated action by governments, businesses and civil society alike.

The Paris Agreement in December 2015 represented an important milestone towards coordinated action. The agreement expresses a global consensus on the need to limit the rise in global average temperature to *well below 2°C compared to pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels*. However, in 2018, the IPCC warned that the ambitions stated by governments around the world in the Paris Agreement are no longer enough to limit global warming to 1.5°C.

The IPCC highlighted the significantly smaller damages corresponding to a 1.5°C target versus a 2°C target. The IPCC however also emphasized that reaching the 1.5°C goal would be a herculean feat, which involves rapid, dramatic changes in how governments, industries and societies work. We need to very quickly reduce GHG emissions by at least 49 percent of 2017 levels by 2030 and achieve net zero emissions by 2050. This also requires that we remove *enormous amounts* of carbon dioxide from the atmosphere. However, the IPCC report focused only on what governments, businesses and individuals would need to do to – it did not consider the feasibility thereof. Not surprisingly, there is some skepticism about whether the 1.5°C is still achievable, with some scientists arguing that meeting even the 2°C goal is already virtually impossible.<sup>40</sup>

Rapid and widespread action needs to be taken now. Every year of inaction will result in increased costs and consequences. Now is the time for all of us to take responsibility as citizens, consumers, employees, companies, investors, politicians and as the human beings of this world, and to join the coordinated effort needed to ensure a thriving planet in the future.

#### Risk note/Disclaimer

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<sup>36</sup> Proclim

<sup>37</sup> Proclim

<sup>38</sup> IPCC\_ClimatChangeAndLand\_2019

<sup>39</sup> <http://www.fao.org/news/story/en/item/197646/icode/>

<sup>40</sup> <https://www.scientificamerican.com/article/limiting-warming-to-1-5-celsius-will-require-drastic-action-ipcc-says/>