Munich RE

Green Bond Framework

September 2020

1. Introduction to Munich Re

1.1. Overview

Munich Re is one of the world's leading risk carriers and provides both insurance and reinsurance under one roof. This enables the Group to cover large stretches of the value chain in the risk market. Munich Re is globally active – with representations on every continent and in over 100 countries – and operates in all lines of the insurance business. The Group consists of the Reinsurance and ERGO business segments, as well as the asset management company MEAG. Founded in 1880, the Group employs about 40,000 staff members worldwide, 30.3% of whom work in Reinsurance, 67.4% at ERGO and 2.3% at MEAG.[1]

Almost all reinsurance units operate under the uniform brand of Munich Re. The reinsurance companies of the Group operate globally and in virtually all classes of business. We offer a full range of products, from traditional reinsurance to innovative solutions for risk assumption. Our companies conduct their business from their respective headquarters and via a large number of branches, subsidiaries and affiliated companies. The Reinsurance group also includes specialty primary insurers, whose business requires special competence in finding appropriate solutions.

In ERGO, we combine the majority of Munich Re's primary insurance activities. ERGO is active in nearly all lines of life, health and property-casualty insurance. While the majority of gross premiums written by ERGO derive from Germany, premiums from ERGO's international business come mainly from central and eastern European countries. ERGO also operates in Asian markets, e.g. in India and China.

MEAG manages the majority of Munich Re's investments worldwide and employs around 130 experienced investment managers. MEAG's worldwide presence with units in Munich, New York and Hong Kong enables it to work the market efficiently at a global level. MEAG manages all major asset classes, such as interest bearing securities, equities and real estate, as well as investments in renewable energies and infrastructure. Moreover, MEAG offers its expertise to private and institutional investors outside the Group. MEAG's assets under management amount to €330 billion[2].

For up-to-date information about Munich Re, visit www.munichre.com.

1.2. Sustainability at Munich Re

Our business model is based on responsible corporate governance that reconciles economic, environmental and social requirements. A core guiding principle for Munich Re is acting in a farsighted and responsible manner in the interests of both the Group and society. We have thus based our Group-wide corporate responsibility strategy on the shared value approach. This means that, in our business operations, we bring together economic and social progress. In this context, Munich Re's main objectives include dealing with the consequences of climate change, increasing digitalisation and strengthening of risk awareness.

Our voluntary commitments to covenants such as the United Nations Global Compact (UNGC; since 2007), the UN Principles for Responsible Investment (PRI; since 2006) and the UN Principles for Sustainable Insurance (PSI; since 2012) constitute the basis underlying all our actions. We take environmental, social and governance (ESG) aspects into account when assessing risks, developing insurance solutions, making investment decisions and in our internal processes (for example, in procurement).

Signatory of: PRI Principles for Responsible Investment

PSI Principles for Sustainable Insurance

[1] As at 31 December 2019.
[2] As at 30 June 2020.

Deep Integration of ESG Criteria

We systematically integrate sustainability – i.e. ESG criteria – when creating value for our core business. In order to prevent or limit negative consequences for the environment, local communities or human rights, we have integrated ESG criteria into our risk assessment processes and investment decision-making at the Group level. In addition, we have developed Group positions and implemented mandatory guidelines and policies on sensitive issues such as coal and oil sands, fracking and mining, and investments in soft commodities or farmland.

In our insurance business, we take ESG aspects into account in underwriting and in our products and services. We impart the necessary skills to our staff through training and a coordination network in Reinsurance. We also offer an ESG tool that contains questionnaires specially tailored to sensitive issues and which supports our underwriters in systematically taking ESG aspects into account when assessing risks. In addition, staff who write business internationally are provided with ESG country ratings, giving them an instant overview of the most important indicators. In primary insurance, analysing ESG aspects constitutes a standard component of our product development process for personal lines business.

Regarding our investments, we do not only act on financial considerations, but systematically take ESG criteria into account here as well. This helps us identify risks and opportunities beyond traditional financial analysis. We are convinced that integrating ESG criteria leads to making responsible investment decisions over the long term. Munich Re has long recognised the advantages of investing sustainably and accordingly adopted sustainability criteria in our Responsible Investment Guideline (RIG) at various stages of the investment process (strategic asset allocation, choice of country and securities). Our investment policy is based on three pillars: (1) systematic integration of ESG criteria, (2) investment focus topics such as renewable energy technologies and (3) defined exclusion criteria. For example, the RIG of Munich Re stipulates that at least 80% of the investments of each business field in shares, bonds (corporate, government or covered), real estate and alternative investments should be invested in assets that are members in one of the established sustainability indices or meet other accepted sustainability criteria.

Addressing Climate Change

For almost 50 years, Munich Re has been addressing the issue of climate change, its effects on the insurance industry and the resulting risks and opportunities. Climate change constitutes one of the greatest challenges for humanity and demands decisive action right now in order to limit global warming to less than 2°C. Munich Re is committed to achieving this goal (set by the Paris Climate Change Conference) and

ESG framework – Systematically integrating sustainability criteria into our insurance and investment activities

Insurance

ESG criteria integrated into insurance processes and products: Risk-based management established and ESG framework applied Group-wide

Enabling and solutions

- Nat cat premiums of ~€4bn in P-C Reinsurance portfolio[1]
- Risk-transfer solutions for renewables and smart energy, e.g. solar/PV, windfarms, battery storage
- Sovereign and public-private nat cat risk transfer schemes as a way of closing the protection gap

Sensitive issues

Banned weapons
Policy on cluster munition and land mines

Coal
Policy on coal business underwriting and investments

Arctic drilling
Guidelines, risks to be referred to Arctic Drilling Panel

Oil sand
Position paper including specific questions on ESG aspects

Fracking
Position paper including specific questions on ESG aspects

Mining
Position paper including specific questions on ESG aspects

Investments in farmland
Mandatory ESG check for investments

Investments

Systematic integration of ESG criteria: Sustainability ratio >80% in 2019

Focus topics

- Invested capital (equity and debt) in renewable energies of €1.6bn[2]
- Investment in green bonds of €1.3bn[2]
- Expansion of climate-friendly investment to €2.8bn

Commitment to achieve a GHG-neutral investment portfolio by 2050, Munich Re joined UN-convened "Net-Zero Asset Owner Alliance"

Note: The information presented in this graph refer to ESG at Munich Re in general. Any investments mentioned here may be considered as Eligible Projects as defined below only in case they meet all of the requirements laid out in chapter 2 of this document.

[1] Approximation as at 31.7.2020.
[2] In 2019.

undertakes to make its own, independent contribution to combating climate change. It is also absolutely necessary for us to offer protection and adapt to climate change in order to mitigate its humanitarian and financial consequences. We intend to both act preventively and improve the adaptation measures for those effects of climate change that have already become irreversible.

The core of our climate protection activities consists of enabling new, climate-friendly technologies that can slow down climate change – whether in power generation, transport, energy storage or industrial production. Our goal is to help new technologies break into the mainstream by offering insurance solutions that bear a portion of the often very specific associated risks, thus making the technologies more attractive for investors. Munich Re has deep technical expertise in this area and boasts many years of experience in the renewable energy and efficiency sectors. At the same time, we support the aim of no longer insuring individual risks in (1) coal extraction, (2) coal-based electricity generation or (3) oil sand extraction and related infrastructure.[3] Furthermore, we refrain from investing in equity and debt securities of companies that generate (1) more than 30% of their revenues from coal mining or electricity generation from coal or (2) more than 10% of their revenues from oil sand extraction.

To support the Paris Agreement objective to limit the global temperature increase to well below 2°C, Munich Re has expanded its climate strategy with a recent commitment to achieve a GHG-neutral investment portfolio by 2050. In order to drive implementation of this strategic objective, we have joined the UN-convened "Net-Zero Asset Owner Alliance" (AOA) in January 2020.

Moreover, we exploit the potential of our own operational processes to ensure climate-friendly action. The Group's operational activities have been carbon-neutral since 2015 and we are committed to maintaining carbon neutrality. We compensate unavoidable carbon emissions by purchasing carbon certificates and we follow strict requirements when selecting offsetting projects. For example, at least one of the projects must meet the Gold Standard (see www.goldstandard.org for details) and be implemented in one of the world's least developed countries. For the 2019 financial year, we obtained carbon certificates from a wind farm project in the Shandong region in China and a project on efficient cooking stoves in Uganda.

External Validation

Every year, we have our activities validated externally through ratings issued by independent agencies that specialise in sustainability. The ratings and results are submitted to our Board of Management, which then identifies room for improvement and recommends corresponding measures. Munich Re takes top positions in major Socially Responsible Investment (SRI) ratings (e.g. Sustainalytics, ISS ESG, MSCI, etc.).

Further information on our corporate responsibility strategy, our ambitions and achievements is available from our corporate responsibility portal at www.munichre.com/cr-en.

2 Green Bond Framework

The objective of issuing Green Bonds is to increase our investment in green and sustainable projects and initiatives, thereby playing a key role in the transition to a low-carbon economy. The issuance of these Green Bonds will also enable Munich Re to engage with those investors who are committed to allocating capital in support of this effort.

Alignment with the Green Bond Principles[4]

This Framework is designed to ensure any Green Bond(s) issued by Munich Re are aligned with market best practices outlined by the ICMA Green Bond Principles 2018[4], as updated from time to time. It includes the following sections and describes the approach to external review:

- Use of Proceeds
- Process for Project Evaluation and Selection
- Management of Proceeds
- Reporting

This Framework will apply to any Green Bond issued by Munich Re and will be applied as long as any such instrument is outstanding. This Framework may be updated from time to time to ensure continued alignment with voluntary market practices, emerging standards and classification systems.[5] Any updated version of this framework will either maintain or improve the current levels of transparency and reporting disclosures, including the corresponding external review.

[3] Provided we become aware of such individual risks. Coal restrictions apply to developed/industrialised countries and the majority of emerging markets – there may be a small number of exceptions in countries where a significant proportion of the population (>10%) does not yet have access to electricity (cases in these countries will be reviewed using clearly defined criteria, such as a country's dependence on coal, its natural endowment of renewable resources, the climate strategy of the company or country concerned and the technical standards applied).

[4] Green Bond Principles 2018 (International Capital Market Association acting as secretariat to the Principles). https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/

[5] Please note that any Second Party Opinion (SPO; see section 2.5) will be valid only for a certain version of this Framework. Munich Re will aim to obtain an updated or new SPO in case this Framework is updated.

2.1 Use of Proceeds

An amount equivalent to the net proceeds of the Green Bond(s) will be used to finance or refinance, in whole or in part, existing and/or future Eligible Projects that meet the Eligibility Criteria as defined below and are financed by Munich Re either by equity participation or by debt instruments (excluding green bonds issued by other issuers)[6]. For equity participations, eligible investments also include investments by Munich Re in private, non-listed companies for which at least 90% of turnover is attributable to projects meeting the Eligibility Criteria as defined below.

In the case of refinancing existing Eligible Projects, investments and expenditures which have been made within the 36-months period preceding the date of issuance of the Green Bond shall be considered for inclusion as Eligible Projects.

Eligible Projects

Eligible Green Project Category	Eligibility Criteria	Sustainable Development Goal
Renewable Energy	Financings related to the acquisition, conception, construction, development, installation and operations of infrastructures in renewable energy production units. This includes the production units and storage facilities, but also the transportation to and through the grid/network. Renewable energy sources include: – On- and offshore wind energy – Solar energy – Geothermal facilities – Hydropower (following an environmental and social impact assessment by a reputable third party for new hydropower facilities) – Biomass facilities (waste and non-waste) operating above 80% of GHG emissions reduction in relation to the relative fossil fuel comparator set out in EU RED II increasing to 100% by 2050 · Waste biomass includes (a) lignocellulosic waste biomass, including wood waste (forestry residue from well managed forests), straw, cane trash, sugarcane bagasse, (b) animal manure and (c) agricultural residue (from well managed agricultural production) such as corn cobs, nut shells and soybean hulls · Non-waste biomass focuses on advanced feedstock. In case such biofuels are produced from crop-based sources, credible certifications (e.g. by the Roundtable on Sustainable Biomaterials) will be aimed for. The following are excluded: (a) production of biofuels on land with high biodiversity, (b) land with a high amount of carbon that has been converted for biofuel feedstock production and (c) competition with food supply chains. – Hydrogen (e.g. production of hydrogen, which will be done through electrolysis, and when feasible this process will be performed using renewable electricity) Munich Re will ensure renewable energy projects meet the emissions threshold of 100g CO_2e/kWh, declining to 0g CO_2e/kWh by 2050 for all renewable electricity production.	7 AFFORDABLE AND CLEAN ENERGY
Energy Efficiency	Financings related to: – Improved infrastructure (e.g. LED lighting) – Energy storage (e.g. "power to x") – Energy grids (i.e. development, manufacture and installation of technologies enabling more efficient transmission and distribution and/or end user demand management) – Smart meters and smart grid investments (steering of the grid with the help of smart meters (IoT for example)) for more efficient transmission and distribution of energy or reduction of demand – Usage of waste heat (e.g. using excess heat generated from waste-to-energy and other industrial plants – excluding excess heat from fossil fuel production/ operations – to provide heat to nearby communities and cities)	7 AFFORDABLE AND CLEAN ENERGY
Clean Transportation	Financings related to the development, construction, acquisition, operation, maintenance and upgrades of zero-carbon and low-carbon transport assets. – Zero-carbon transport: investments in passenger and freight vehicles with zero tailpipe emissions, such as electric cars, hydrogen cars, trains etc. – Low-carbon transport: · Investment in low-carbon passenger vehicles with tailpipe emissions intensity of max. 50g CO_2/km until 2025. From 2026 onwards, only vehicles with emission intensity of 0g CO_2/km are eligible · Investment in low-carbon freight vehicles with tailpipe emissions intensity of max. 25g CO_2 per tonne-km – Investments in infrastructure to support the use of zero-carbon and low-carbon vehicles – Investments in transportation infrastructure for mass transportation (expansion of train/metro networks, projects in relation to capacity improvement, station upgrades)	11 SUSTAINABLE CITIES AND COMMUNITIES

[6] However, such green bonds will be considered as temporary investments as described in section 2.3.

Green Buildings	Financings related to: – Residential and commercial buildings (including existing buildings, renovated buildings and new constructions) that earn any of the following certifications or any equivalent and recognised level of certification: · Leadership in Energy and Environmental Design (LEED) Gold or Platinum · Living Building Challenge · BREEAM very good or above – Expenses in building retrofitting with an improvement in energy efficiency resulting in a minimum of 20% of energy savings.
Sustainable Water and Wastewater Management	Financings related to the development, construction, acquisition, installation, operation and upgrades of sustainable water management projects, including: – Drinking water treatment and distribution systems – Water recycling systems, wastewater treatment facilities (excluding wastewater from fossil fuel operations) – Flood prevention, flood defence or stormwater management such as green roofs, wetlands, retention berms, reservoirs lagoons, sluice gates etc. (with climate risk assessments included as part of the technical due diligence) – Other water related projects (e.g. freshwater infrastructure, wastewater infrastructure)
Eco-Efficient and/or Circular Economy	Investments related to waste management, circular economy, pollution prevention and control related to: – Facilities for collection, sorting and material recovery – Facilities for the recycling/reuse of materials – Facilities for the production of compost/biogas from organic waste (e.g. forestry or agricultural residue sourced from well managed crops, municipal waste such as food waste) – Facilities managing efficient waste (e.g. municipal/household waste), such as waste-to-energy plants generating electricity and heat from the incineration of waste. The separation of recyclables from the feedstock will be aimed for For facilities handling electronic waste, an assessment of related environmental and social risks will be performed by a reputable third party and/or related certificates will be required.
Environmentally Sustainable Management of Living Natural Resources and Land Use	Investments related to: – Sustainable agriculture practices and climate smart farming (e.g. biological crop protection[7] or drip-irrigation) – Environmentally sustainable fishery and aquaculture certified by a reputable third-party organisation (e.g. MSC, BAP (at least 2 star), ASC) – Environmentally sustainable forestry certified by a reputable third-party organisation (e.g. FSC, PEFC), including activities such as plantation forestry, management of native forests and afforestation, targeting the production of wood products while at the same time considering environmental and social aspects.

Exclusions

For the avoidance of doubt, the following activities are excluded from the financing by Munich Re's Green Bond(s):

- Energy production from oil, black coal, lignite and oil sands (including energy-efficient technologies that are inherently carbon-intensive and/or primarily driven/powered by oil and/or black coal)
- Sourcing of palm oil from sources not certified by organisations such as the Roundtable on Sustainable Palm Oil (RSPO)
- Gambling
- Tobacco
- Alcohol
- Weapons

2.2 Project Evaluation and Selection Process

Within the context of the issuance of its inaugural Green Bond, Munich Re will establish a Green Bond Committee with responsibility for governing selection and monitoring of the Eligible Projects. The Green Bond Committee will be an extension of the existing Group Investment Management Alternative Investment Investment Committee (GIM-AIIC[8]), additionally including the Head of Economics, Sustainability and Public Affairs as well as the Head of Investor Relations.

The Head of Alternative Investments will semi-annually recommend Eligible Projects to the Green Bond Committee, which will then screen these projects and assess whether they are in line with the Eligibility Criteria and the Exclusions laid out in section 2.1 of this Framework as well as with Munich Re's sustainability policies and procedures.

Once identified, the Group Investment Management department will track the actual allocation to the Eligible Projects using internal systems. The Green Bond Committee will annually review the list of Eligible Projects against the Eligibility Criteria and the Exclusions. If a project no longer meets the Eligibility Criteria set forth in this Framework, the

[6] However, such green bonds will be considered as temporary investments as described in section 2.3.
[7] Biological crop protection means the control of pests and diseases in the crop through the introduction of natural enemies of the harmful organisms, biological plant protection products and plant protection products of natural origin.
[8] The GIM-AIIC is currently composed of the Head of Investment Strategy, the Head of Tactical Asset Allocation, the Head of Alternative Investments and the Head of Strategic Asset Allocation ERGO Life/Health.

project will be removed and replaced as soon as one or more Eligible Projects has been identified as a substitute.

2.3 Management of Proceeds

Munich Re's Group Investment Management department manages the allocation of an amount equivalent to the net proceeds of the Green Bond(s) to Eligible Projects using a portfolio approach. Munich Re strives to achieve a level of allocation to the portfolio of Eligible Projects that matches or exceeds the balance of net proceeds of its outstanding Green Bond(s) within 36 months from the issuance of each Green Bond.

Pending full allocation of an amount equal to the net proceeds of the outstanding Green Bond(s) to Eligible Projects, the net proceeds not allocated to Eligible Projects will be allocated to temporary investments such as cash, cash equivalents and/or other liquid marketable investments (preferably green bonds issued by other issuers) in line with Munich Re's Responsible Investment Guideline and excluding investments covered by any of the Exclusions mentioned in section 2.1 above.

2.4 Reporting

For each Green Bond, Munich Re commits to publish on its website an allocation and impact report one year after issuance of the Green Bond and annually thereafter until full allocation of the net proceeds as well as in the event of any material changes of the allocation as long as the Green Bond is outstanding.

Allocation Reporting

Munich Re will provide information on the allocation of the net proceeds of its Green Bonds. The information will contain at least the following details:

- Net proceeds of the outstanding Green Bond(s)
- Amount of net proceeds allocated to Eligible Project Categories as defined in section 2.1 of this Framework
- A list of the Projects in Munich Re's Eligible Project portfolio, including a description of the projects and allocated amounts (subject to confidentiality considerations)
- The proportional allocation of net proceeds to existing projects (refinancing) and new projects
- The remaining balance of unallocated net proceeds, if any

Impact Reporting

Munich Re will provide impact reporting at the level of each Eligible Project Category. Impact reporting may include metrics such as the following:[9]

Eligible Green Project Category	Key Performance Indicators (KPI)
Renewable Energy	– Total energy produced – GHG emissions avoided per year – …
Energy Efficiency	– Energy saved/reduced per year – GHG emissions avoided per year – # of smart meters installed – …
Clean Transportation	– GHG emissions avoided per year – # of zero-carbon and/or low-carbon vehicles financed – # of electric vehicle charging points installed – Annual ridership of each mass transit system supported – # of kilometers of new train lines, bicycle lanes etc. created – Estimated reduction in car use and car kilometers the project will replace – …
Green Buildings	– # of green buildings/units financed – GHG emissions avoided per year – Annual energy production on-site – Annual energy reduction compared to the pre-investment situation (for refurbishment) – …
Sustainable Water and Wastewater Management	– # of people served by the system – # of water meters installed – Volume of water saved, reduced or treated – …
Eco-Efficient and/or Circular Economy	– Amount of waste collected/recycled – # of people benefiting from waste reduction projects – GHG emissions avoided per year – Total energy produced from biogas and waste-to-energy projects – …
Environmentally Sustainable Management of Living Natural Resources and Land Use	– Surface area of land preserved/restored – Area under sustainable agriculture certification – Amount of crops produced with sustainable agricultural certifications – GHG emissions avoided per year – …

[9] Indicative only – actual metrics may or may not include any of the indicated metrics.

2.5 External Reviews

Munich Re's Green Bond Framework is supported by the external reviews mentioned below.

Second-Party Opinion (SPO)

Munich Re has retained Sustainalytics to provide an SPO on this Green Bond Framework to confirm alignment with the ICMA Green Bond Principles 2018. The document is available on the Sustainalytics website at www.sustainalytics.com as well as on Munich Re's website at www.munichre.com.

Post Issuance External Verification on Reporting

Munich Re intends to appoint an external reviewer to provide comfort on the use of net proceeds of the outstanding Green Bond(s). The external reviewer will examine whether the net proceeds of the Green Bond(s) are allocated to Eligible Projects as defined in this Framework. This review will be published alongside Munich Re's allocation reporting as stated above.

Picture credit: mauritius images/Masterfile