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The MNB's green bond investments continue to generate a significant positive environmental impact

The Central Bank of Hungary ('Magyar Nemzeti Bank – MNB') started to build its dedicated green bond portfolio in 2019, and thus incorporated environmental sustainability aspects in its reserve management. Beyond managing the portfolio, tracking the positive environmental impacts generated by the investments is also of utmost importance. Taking this into account, the MNB also monitors the yearly positive contribution of the portfolio and publishes it for the fourth year in a row with the aim of transparency and setting a good example. In 2023, the positive impact was 66 thousand tons of CO_2 emission avoidance/reduction which corresponds approximately to the carbon footprint of a Hungarian town with 13 thousand inhabitants. The green bond portfolio reflects MNB's active role in the sustainability market segment in alignment with its mandate, without jeopardizing the primary objectives of reserve management (liquidity, security, yield).

The greening of the MNB's foreign exchange reserves continues

MNB started to build its dedicated green bond portfolio in 2019. The size of the green bond portfolio within the reserves mirrors the relative size of the global green bond market (~1-2%). Due to the intended purpose of green investments, the risk-return characteristics of the portfolio differs only in the slightly longer target duration from similar FI investments in the reserve, as these instruments typically finance longer-term investments.

Monitoring the expected or materialized positive environmental impacts of the investments is also of paramount importance in managing a green bond portfolio. Obtaining impact information on the issuer level enables the analysis of the portfolio not only financially, but also from an achieved CO_2 emission reduction/avoidance perspective, while maintaining the primary financial goals of focusing on return/risk. In addition to the carbon dioxide emission indicators, other data (e.g. energy efficiency indicators for buildings, etc.) also appear in the reports, however, at the moment, the publication of this information among the issuers is not yet sufficiently broad for a suitable aggregation to be made. In parallel with the expected future improvement in the quality and availability of data, the MNB strives to prepare the most comprehensive impact analysis possible.

The positive environmental impact of the projects financed by green bonds should be interpreted primarily in relation to a given emission benchmark: this represents the hypothetical emission level and other environmental burdens that would have been materialized in the absence of the green projects. As a result, the positive impact of the green projects can be predominantly captured as an avoided CO_2 emission. Emission benchmarks are based on several assumptions, varying across regions and project types. In addition, there is some uncertainty in the actual impact of green projects throughout their entire life cycle, which results from the estimation of physical parameters (for example, the weather dependence of renewable capacities, the rate of degradation, lifetime, etc.). Therefore, in the longer term, the comparison of the actual and

previously expected positive environmental effects at the aggregate level will be an essential element, however, this still poses significant challenges to the analysts.

It is essential to point out that green bonds should ideally fit into the given issuers' comprehensive green strategy: the specific materialized green projects should mean a building block in the firm's credible emission mitigation strategy. In case at a later stage the bonds do not fulfil the expectations from a green perspective, MNB may decide to sell the specific bonds, thereby supporting the integrity of the portfolio, the green bond market in a broader sense, and the possible reduction of the risk of greenwashing.

In December 2023, the MNB decided to double the size of the dedicated green bond portfolio in the foreign exchange reserve to EUR 500 million. With this decision, the MNB continues to support environmental sustainability, in line with international best practices and the central bank's green mandate. Increasing the green bond portfolio results in a real, short-term positive environmental impact. With its decision, the MNB, as an opinion-making economic actor, directs the attention of market participants to the importance of sustainable finance. The result of the portfolio increase will be shown in the next year's impact analysis.

Positive environmental impacts of MNB's green bond portfolio

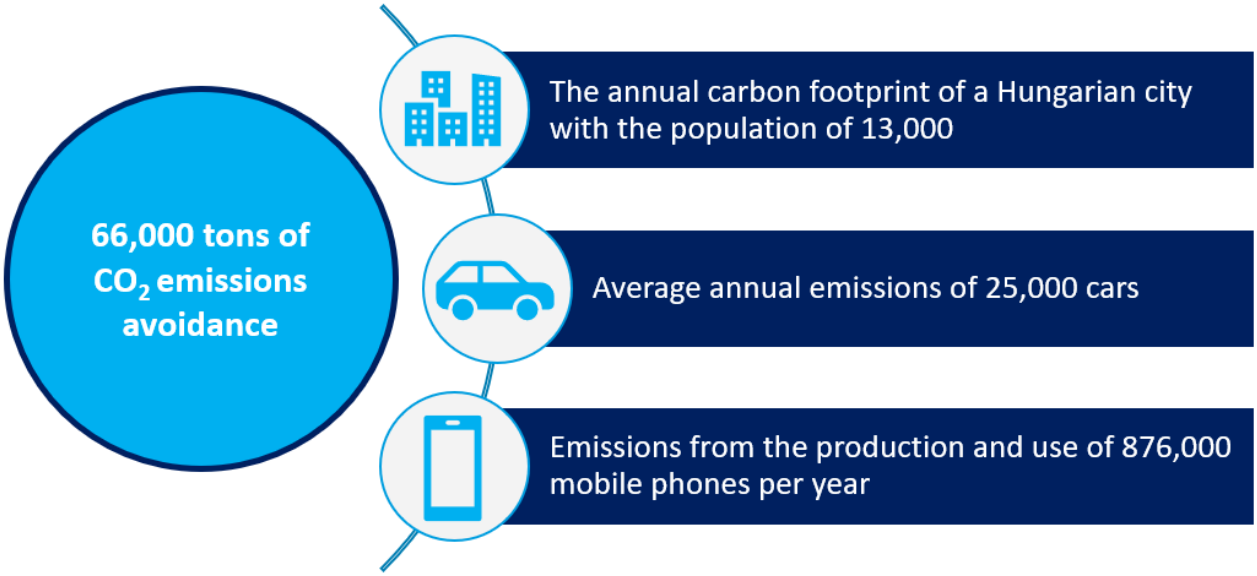
Once the green bond portfolio has been built, it is also crucial to monitor the positive environmental impact generated by those investments. With this in mind, MNB has carried out – for the fourth time – an environmental impact analysis on its green bond portfolio, showing that the impact of the green bond portfolio is equivalent to the CO_2 emissions avoidance of approximately 66,000 tons per year[1]. This impact is equal to the carbon footprint of a Hungarian city of 13,000 inhabitants[2], and to the average annual CO_2 emissions of 25,000 cars, or the emissions of 876,000 mobile phone production and one year usage[3] (Chart 1).

[1] In addition to CO_2 emissions avoidance, other positive environmental effects could be captured, but the availability and quality of the data do not currently allow to reliably quantify them. In parallel with the development of the reports of green bond issuers, MNB also strives to conduct the most comprehensive impact analysis possible in the future.

[2] In Hungary, per capita GHG emissions are approximately five tons.

[3] In the case of cars, we calculated an average consumption of 7 liters per 100 km and took an annual mileage of 16,000 km. In the case of mobile phones, we calculated an average of 75 kg of CO_2 emissions from production and use per year.

Chart 1: Impact of MNB's green bond portfolio

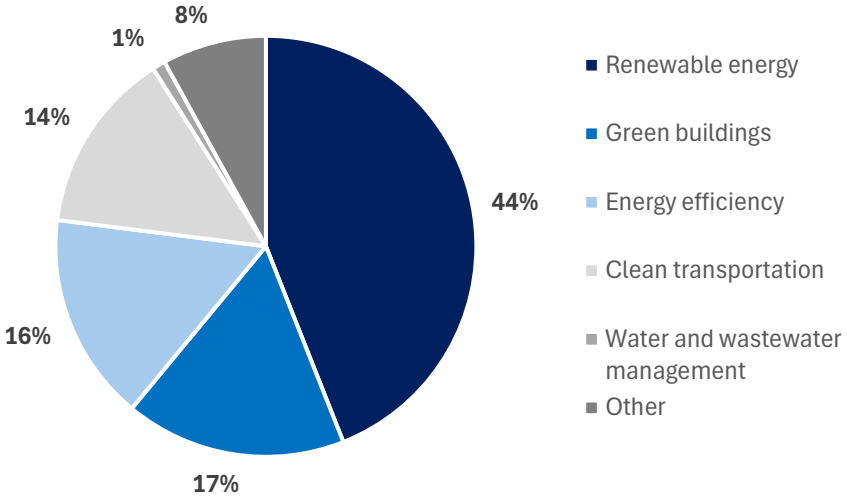


Source: MNB

Compared to the 73,000 tons of CO_2 emissions avoided in the previous year, the reduction experienced stems from several factors, among which the rebalancing of the bonds within the green bond portfolio can be highlighted. Since the management of the green bond portfolio does not differ from the management of other portfolios in terms of financial and other traditional reserve management goals (such as following benchmarks), the degree of environmental impact generated by green bonds is not optimally targeted, but a consequence. For this reason, it may happen that the sale of bonds with a higher environmental impact (for example, financing renewable projects) is followed by the purchase of covered bonds with a lower environmental impact (for example, financing energy-efficient buildings), which can thus lead to a decrease in the overall impact. However, all types of projects can play an important role in the green transformation, so a one-dimensional optimization of environmental impacts – for example, only along emission reduction/avoidance effects – would not be appropriate even if decisions were not primarily driven by financial considerations. A further difference in the size of the saved carbon footprint can be caused by the emissions-baseline hypothesis already mentioned above, which can generate different environmental effects for each region and emitter, even in the case of similar projects.

The relative proportions of the types of financed projects are in line with the overall market distribution. More than 60 percent of the projects financed by the green bond portfolio are related to renewable energy and green buildings (Chart 2). Another 30 percent is the financing of green projects aimed at energy efficiency and transport. It is important, that MNB does not run the risk of the specific projects, but as by conventional bonds the credit risk of the highly rated – in many cases 'AAA' – issuers.

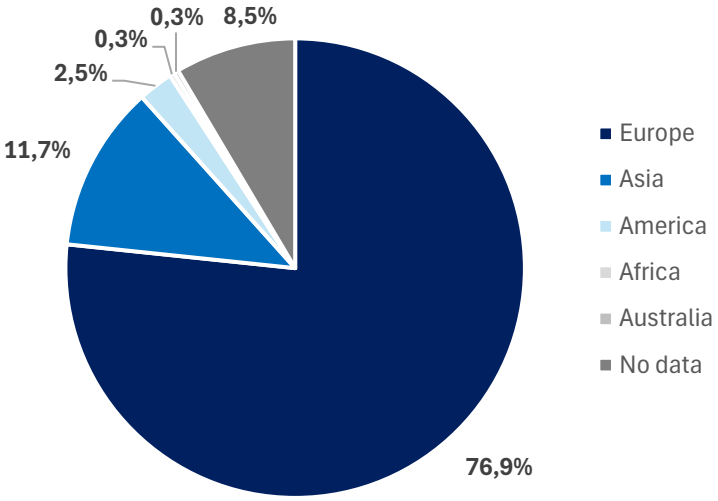
Chart 2: Distribution by type of financed green projects



Source: Bond issuers' reports

The green bond portfolio is denominated in euro, this is reflected in the predominance of European issuers and the geographical distribution of green projects realized. However, mainly thanks to projects by supranational issuers, projects in Africa and Asia have also been financed, which in many cases generate an even higher overall green 'return' due to the green investments that have replaced often more polluting operations in these countries (Chart 3).

Chart 3: Geographical distribution of financed green projects



Source: Bond issuers' reports

In their reports, bond issuers usually name which UN Sustainable Development Goals (SDGs) are targeted and reached by their projects. The 17 comprehensive goals adopted by the UN in 2015 formulate a framework for the period up to 2030, which attempts to set the world on a sustainable path through a number of pre-defined tasks. Among the goals, the purchased green bonds primarily promote goals related to climate change, energy efficiency and clean energy (Chart 4).

Chart 4: SDGs supported by projects financed by MNB's green bond portfolio

Source: Bond issuers' reports

In 2023, the positive impact of the MNB's green bond portfolio was 66 thousand tons of CO_2 emission avoidance/reduction which corresponds approximately to the carbon footprint of a Hungarian town with 13 thousand inhabitants. Overall, via its green bond portfolio, MNB is an active player in the market segment supporting sustainable growth, simultaneously ensuring the primary objectives of FX reserve management (liquidity, safety, return). A more detailed climate risk analysis of the MNB's foreign exchange reserves is contained in the MNB's financial report on climate change.