Green Finance In Hungary

Consultation document by the Central Bank of Hungary

3 July 2019

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Contents

EXECUTIVE SUMMARY

The purpose of the Central Bank of Hungary ("MNB") is to ensure that the domestic system of financial intermediation should support, much more powerfully than at present, environmental sustainability through its financial products, services. This document presents the MNB's ideas in this regard and the possible steps assessed by the MNB, in order to plan the future measures of the MNB, taking into account the opinions of various stakeholders (financial organizations, government sector representatives, professional and non-governmental organizations).

The MNB intends to follow the principles listed below for possible steps to establish and develop the domestic green finance segment:

- it is desirable from a macroeconomic and ecological point of view that green investments (supporting environmental sustainability) should be subject to more favourable financing conditions than other investments, particularly those that are environmentally harmful;
- at the same time, the expansion of green financing must not lead to a deterioration in the individual financial stability and soundness of financial institutions, or to an increase in prudential risks;
- that is why the expansion of green lending, investment and other financial services must go hand in hand with the development of risk management; it must be ensured that environmental aspects are considered more prominently in the operation and management of domestic financial institutions than is currently the case;
- in addition, it is important to avoid the risk of the appearance of products portrayed as green on the "sideline" of green financing that might be expanding, but deliver no real environmental benefit (the risk of so-called greenwashing).

In line with the above principles and taking into account the plans for the EU sustainable finance framework under development, the MNB examines a number of measures, of which the discussion paper mainly focuses on the following areas.

- establishment and development of environmental risk management systems in the banking sector;
- supporting the development of a retail (and SME) customer base for the demand for green financial products;
- facilitating research and training for experts and the development of knowledge base in the field of green finance;
- defining standards for dedicated green products and collecting these into a green product register;
- redirecting bank funding, especially in the field of energy efficiency investments, into a green direction, through the capital requirements for assets;
- promotion of long-term funding for green financing through the use of green covered bonds;
- regulatory changes to further reduce the use of paper, in order to make the business operations of financial organizations greener.

1. INTRODUCTION

The Magyar Nemzeti Bank (MNB) announced its Green Program on 11 February 2019[1]. Within this framework, the central bank intends to contribute to the mitigation of ecological, economic and financial risks posed by environmental anomalies (such as climate change) and the development of Hungary through various external and internal, domestic and international initiatives. MNB's Competitiveness Program[2] identifies the Green Economy as a take-off point, as an area where ecological benefits can also be achieved by accomplishing sustainable economic growth. The Network for Greening the Financial System - an organization in which the MNB is also a member - has also called central banks in its recommendations published on 17 April 2019 to help the management of environmental risks and to start greening the financial system so as to help the achievement of the Paris Climate Agreement's goals.[3]

Ensuring adequate financing is a key issue for the development of the green economy and for promoting environmental sustainability - as for all economic policy objectives. While domestic fiscal funds, provided by the European Union to a large extent, can serve targeted climate protection, green efforts, they are naturally limited, while the funds managed by the domestic financial markets still hold a huge green potential. This potential also exists from two “directions”: on the one hand, more funding could flow towards dedicated green investments, projects, goals, on the other hand, it would be a step forward if there were less funding for aims that raise environmental, climate protection concerns.

The need for increased funding is also supported by external analyses: the OECD's 2018 environmental report, for example, highlights that, although in the period 2007 to 2020 public spending for green purposes (in particular water, waste management and transport infrastructure) could increase, with the help of EU funds, the volume of business environmental investments decreased. In addition, private investments are also heavily dependent on EU funds, and there is a risk that, as a kind of displacement effect, the country finances from public funds environmental investments that could be realized on a private basis (OECD 2018). Although the volume of private green investment depends on many factors (regulatory environment, administrative burdens, possible regulatory prices, etc.), the financial environment determined by financial markets can be an important driver.

The purpose of this consultation document is to explore the opportunities, focus points of expanding the Hungarian green finance (as is called in international terminology) segment, to identify potential barriers to segment growth, and channel the views of market players and other stakeholders into the domestic public discourse. Consultations already began this spring, and many of the possible steps outlined in this document have been included on the basis of these dialogues - partly on the proposal of market participants.

By green finance, we mean financial intermediation based on private resources, fundamentally on a market basis, in which financial, investment and insurance services are - without damaging the principles of risk management - dedicated to environmental sustainability, typically through the financing of investments and projects. (Donations, supports provided as part of the CSR activity of market players do not belong in this category). The definition of investments for environmental sustainability (so-called taxonomy) is being developed in the European Union and in many other countries around the world. In this document we apply

[1] https://www.mnb.hu/letoltes/az-mnb-zold-programja.pdf
[2] https://www.mnb.hu/letoltes/versenykepessegi-program.pdf
[3] https://www.banque-france.fr/sites/default/files/media/2019/04/17/ngfs_first_comprehensive_report_-_17042019_0.pdf

the most common definition of financial markets at present, i.e. based on the most common green bond standard [4] we consider such projects as green that are aimed at the following areas:

- renewable energy,
- energy efficiency,
- pollution prevention and control,
- environmentally sustainable agriculture and animal husbandry,
- biodiversity conservation in land in water,
- clean transport,
- sustainable water management, wastewater management,
- adaptation to climate change,
- products and technologies of "eco-efficient" or circular economy,
- green buildings.[5]

In the light of the responses to the consultation, the MNB is planning market support, development and orienting steps, and therefore it would be particularly useful to know the needs and expectations of the MNB's possible involvement.

It is possible for anyone to comment on the MNB's discussion paper, but the MNB expressly expects feedback from the following stakeholders:

- financial organizations (banks, insurers, investment service providers, funds, etc.);
- professional organizations of financial market participants;
- representatives of the governmental sector and its institutions;
- sustainability consulting and auditing companies;
- sustainability researchers, analysts;
- green organizations;
- relevant representatives of the corporate, SME sector.

In connection with the discussion paper, the MNB awaits comments and suggestions to the zold.penzugyek@mnb.hu email address by 4 September 2019.

[4] Definitions of ICMA Green Bond Principles: https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2018/Green-Bond-Principles---June-2018-140618-WEB.pdf

[5] Obviously, the above points mean quite general categories. More detailed, more scientifically grounded definitions are under development in several international forums. This consultation material regards the list as a kind of working hypothesis, the purpose of which is only to facilitate consultation at this stage.

2. ASSESSMENT OF THE INITIAL SITUATION

2.1. International experiences

In the developed financial markets, a green finance segment has emerged in many countries, where different products and services serve environmental sustainability in some way, either directly or indirectly. Although some of these green financial solutions are part of a state-subsidized program (backed up by low interest bank funding, budgetary or EU resources), the purely market-based green financial segment is also becoming increasingly prominent. From this point on, this discussion paper deals only with the latter, i.e. with financing not meaningfully supported by the state.

It is a remarkable development in foreign practice that green financial products can be found not only in the offering of specialized, niche (ethical) small banks, but in the offering of more and more universal financial groups as well. In the developed markets today, virtually every traditional banking or other financial product has its green counterpart. Naturally, in the case of the latter one of the most basic questions is on what basis the product is considered green. In this field, the taxonomies elaborated by the professional organizations and in some countries by the regulators, already mentioned in the Introductory chapter provide the definition and the criteria system, and compliance with these is usually certified by an external certification company.

Products and services classified as green in this way are called labelled green financial products. However, it is important to note that some of the non-labelled products and transactions will certainly finance environmentally beneficial aims, but this green character will remain latent, and environmental benefits will sometimes be an unintended "side-effect". Often, even the financial service provider itself does not register what part of its loans or other services is green.

On the credit side “labelled" green loans appeared one or two years ago. It applies to each of these loans that the purpose of the loan complies with a green taxonomy, and the creditor confirms with a transparent process and data reporting that the financing really serves the declared environmental purposes. In addition to simple green investment loans and project loans, green syndicated loans can also be found (typically to finance the largest, most complex investment projects) along with some highly innovative financing forms.

Sustainability-linked or ESG [6]performance-linked loans constitute a special, highly innovative sub-category of labelled green loans in which the borrower company's environmental (or ESG) performance determines the interest rate of the loan, and often not only when the decision on the loan is made, but even during the entire term of the loan. Thus, the interest burden of an environmentally sound debtor may decrease during the term of the loan, and although this may slightly worsen the bank's margin, this effect may even be counterbalanced by a reduction in risk costs. (Empirically it is increasingly confirmed that high ESG performance entails lower credit risk.) In 2018, the disbursement of labelled green loans amounted to 36.4 billion dollars, (Trucost 2019), and the stock has by now exceeded 100 billion dollars, i.e. it is growing very dynamically from a low base (Environmental Finance 2019).

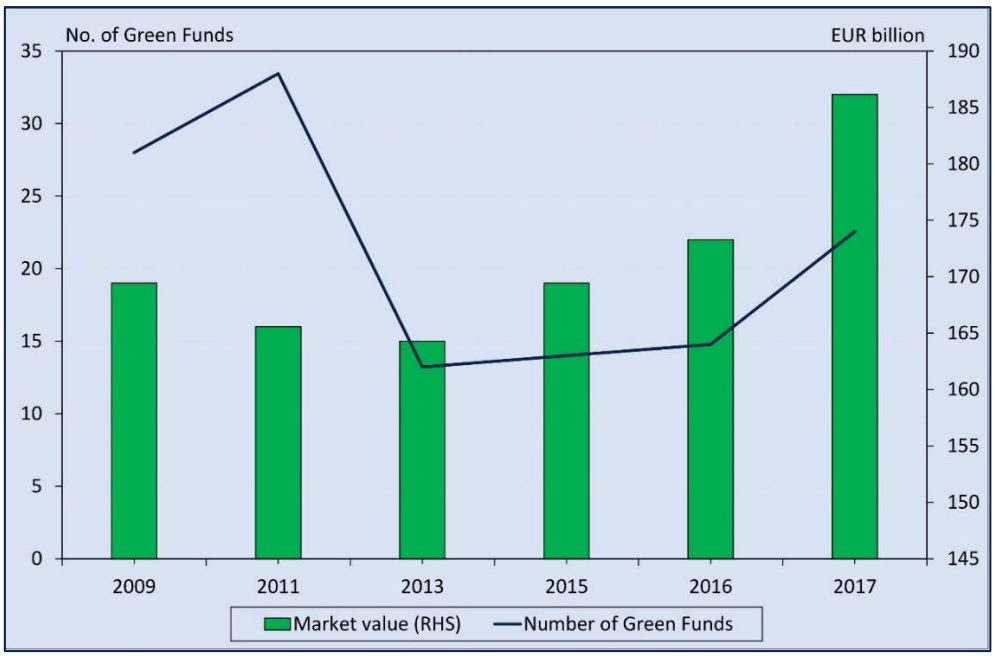
Obviously, the portfolio of loans that do not have green labels, but otherwise finance environmentally beneficial projects, investments, is larger by orders of magnitude, but there are no standardized data on these.

[6] ESG stands for Environmental, Social and Governance characteristics as a system of aspects.

Regarding **savings**, the green deposits available on foreign markets take many forms, from the aspect of what is the basis of their green qualification. In the case of one type of deposits called green, the **deposit** is green only from an operational point of view, i.e. for example, the whole life cycle of the product is paperless or the "reward" of depositing is the planting of a tree.[7] A more ambitious form of green deposit is when the deposit-taking bank undertakes to extend at least the same volume of loans as that of green deposits, to dedicated green projects. (From this point on, in this document by green deposit we will only mean this form). Similarly to loans, there are also cases of green deposits (or more precisely, the environmental benefit of loan-side activity financed from the deposit), certified by an external auditor or consultant as well.[8] In this case, in fact, there is a very similar financial intermediation for green bonds, typically as a form of fundraising for institutional investors, only on the basis of household resources, and without the constraints of bond issuance.

In the field of green **investment funds** the yield-risk framework being considered in investment decision-making seems to have been complemented for several years for a growing number of players by taking into account the green (and generally the ESG) aspects. The rise of socially Responsible Investment (SRI) is becoming increasingly important in international capital markets. According to data collected by Novethic, the wealth managed by European "green" or SRI funds exceeded EUR 32 billion at the end of 2017. Funds available for small investors and institutional clients contained 174 instruments of 16 different countries. 70% of the EUR 10 billion jump in assets under management (AuM) in 2017 was due to capital inflows, while the remaining 30% was attributable to the exchange rate gains of underlying products (Figure 1).

Figure 1: Changes in assets under management and number of European green funds in 2009 to 2017



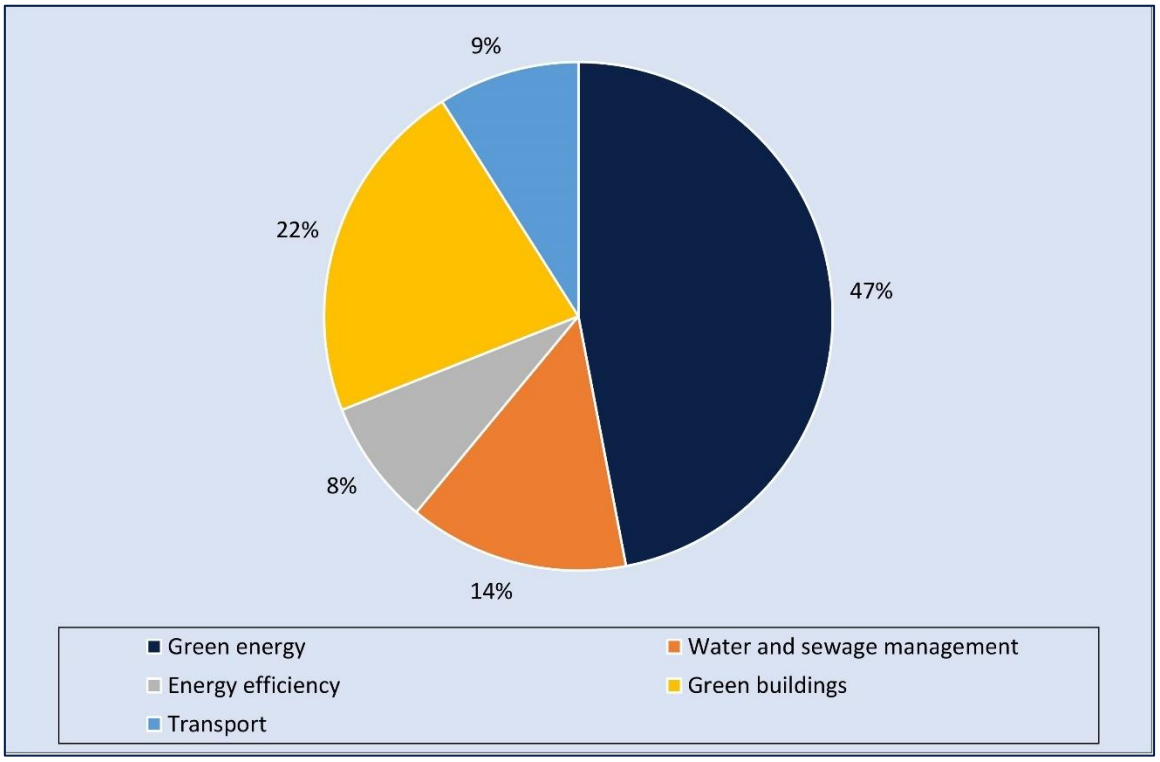
Source: Novethic (2018)

[7] See, for example: https://www.yesbank.in/green-future-deposit-2018

[8] See, for example: https://www.ubank.com.au/term-deposits/green and https://www.climatebonds.net/files/files/Westpac%20Green%20Deposits%20Framework%20September%202018.pdf

It is important to mention **green bonds** in the field fundraising for green purposes**.** These are debt securities whose issuer undertakes to finance from the funds collected by the bond some kind of environmental or related investment project. The most typical investment goals are green energy developments and the design and development of green buildings, but water and wastewater management, transport and energy efficiency are also among the frequent areas of finance (Figure 2).

Figure 2: Distribution of projects financed from green bonds



Source: S&P Global Ratings, MNB

The market for green bonds is growing dynamically, both in terms of volumes and issuers. Not only are their issuers (companies, financial organizations, development banks, municipalities, states, etc.) diverse, but they present a varied picture in their other parameters as well, such as maturity, capital, interest or even external credit ratings. It is an important difference compared to traditional bonds that “in exchange” for the green label [9] the given instrument is only allowed to finance a certain range of uses and aims, therefore both the processes intended to secure this and the specific use of resources should be precisely defined and documented.

[9] Today several international standards exist for green bonds, for the purpose of resolving the green label dilemmas (such as Green Bond Principles and Climate Bond Standards), based on which the minimum requirements for these financial instruments seem to crystallize. In fact, several companies and agencies have appeared on the market that offer independent opinions or even certifications on the compliance of the bonds with the above standards. Standards have become increasingly stricter and more detailed in recent years. While the two globally accepted standards mentioned above were created as private initiatives, the EU Green Bond label that is expected to be released this year will be the first "official" standard.

2.2. Domestic Green Financial Services - An Overview

In Hungary - similarly to other markets of the region - there are no labelled (certified by an outsider organization) green financial products, but naturally, there are transactions and products serving green purposes.

Among **green loan products,** in the retail business currently the most important one is a non-market-based, loan-like product, the Residential Energy Efficiency Loan Programme, which actually exists in the form of a refundable EU-grant. In this program with a total budget of HUF 115 billion, individuals, condominiums and housing cooperatives can take advantage of a preferential 0% fixed rate loan for such purposes, among others, as upgrade of heating, insulation, replacing doors and installation of solar panels. The maturity of the loan can be up to 20 years, with a maximum amount of HUF 10 million for individuals and an own resource requirement of at least 10%.[10]

Naturally, commercial banks - some of which are also intermediaries of MFB (the Hungarian Development Bank) products - offer loans that can be used, for example, to purchase and install solar panels. In addition, there were previously and there are also currently credit institutions (with relatively low volumes of placement) whose mortgage loans support the improvement of energy efficiency by granting a lower interest to customers on account of the energy efficiency of the financed property, but there are no data reports on the portfolio of these loans. In the corporate and local government segment, the MNB has no data on green lending either, however, the amount of solar power generator loans is already HUF 100 billion in terms of magnitude.

We do not have data on green **savings** either, there being no green labels. According to the MNB, currently one credit institution has a **deposit** product, in which the depositor may, in addition to several other options, instruct the deposit-collecting bank that in its lending activities it should grant lower interest to borrowing customers belonging to the categories of environment protection or “green energy”. (In this case, therefore, theoretically it is not the depositor who sacrifices some of its interests, rather the bank, at the expense of its own profit). According to the information published on the website of the relevant credit institution, the portfolio of such preferential deposits totals about HUF 2 billion. [11] Thus, the portfolio of this single, dedicated green deposit is dwindling compared to the deposits of domestic households, which are close to HUF 10,000 billion.

In order to expand the green financial segment, it is also important to see the strategy of credit institutions as well, about which the MNB conducted a voluntary questionnaire survey among credit institutions in April 2019.[12] According to this survey, in the strategy and corporate governance of banks, the green aspect is represented to various extent, but is not dominant in any case (with one exception). Few of the responding banks have a declared, officially issued sustainability strategy, but many report that a corporate strategy of this kind is under development. Several banks have stated that although they do not have a sustainability strategy, sustainability considerations are part of their decision-making mechanisms. According to the

[10] www.mfb.hu/maganszemelyek/lakossagi-energiahatekonysagi-hitelprogram-t32-p32#/

[11] https://www.magnetbank.hu/download/6/cs/3yemc.pdf. State as of 19 January 2019.

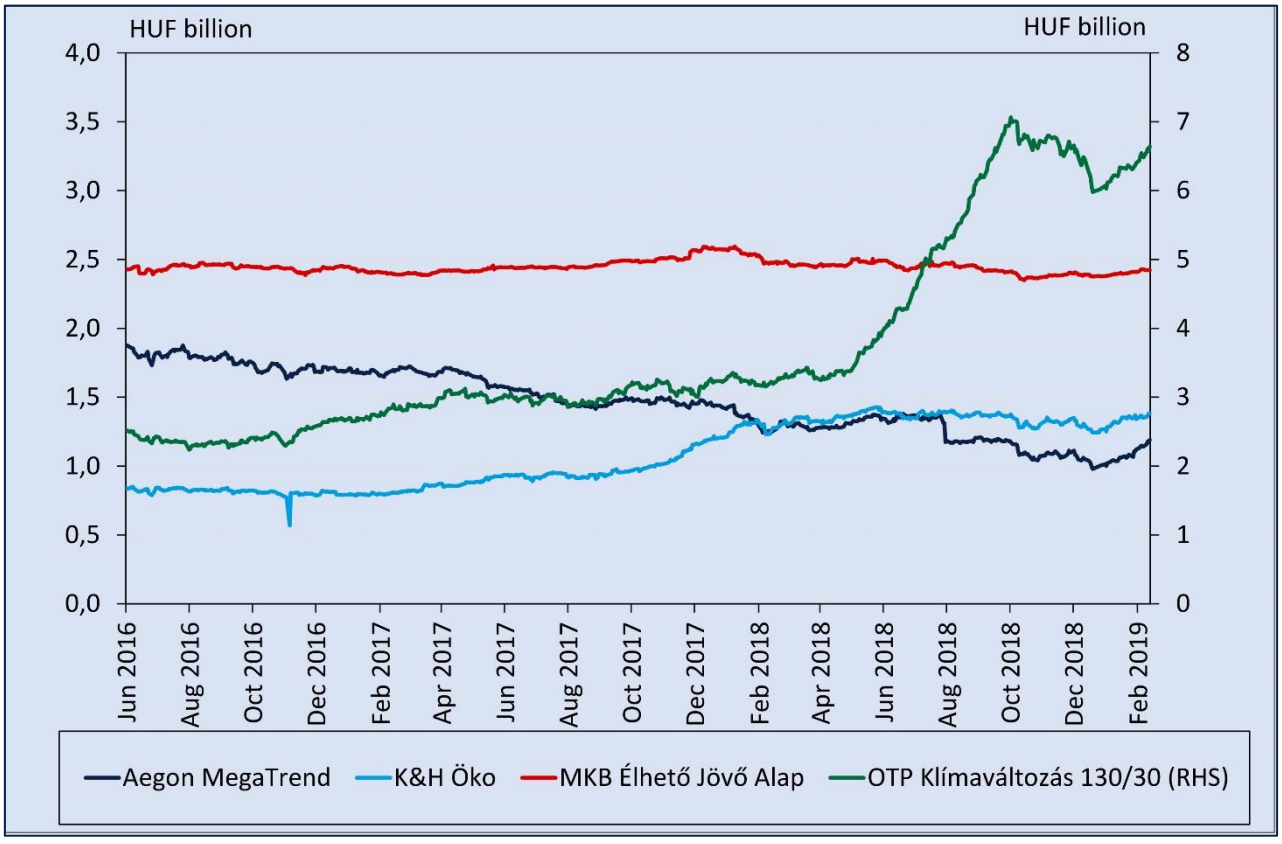
[12] The questionnaire was filled by 67.74% of the polled, but the filling institutions represent 77.35% of the balance sheet total of the aggregate banking sector (considering only those banks that fully completed the questionnaire).

replies, the weight of climate protection aspects have been increasing year-by-year in the strategic planning of the company.

The majority of the responding credit institutions considered the promotion of environmental awareness, the application of new, environmentally friendly solutions in banking practices (for example, green offices, branches, facilitating digitization) as the responsibility of the banking system, and concerning lending the promotion of investments in energy efficiency, renewable energy production were mentioned repeatedly, as well as selling the shares of green investment funds. It should be highlighted that 95 percent of banks stated that the banking system should place greater emphasis on climate change issues.

Returning to green savings, the **investment funds** offer a wider portfolio compared to deposits. Among the products offered by domestic fund managers, there are several funds that can be considered green, although their presence is negligible in terms of quantity and amounts, compared to the entire core offering. According to the data of BAMOSZ as of 31 January 2019, products that bear some kind of climate protection, ecological or sustainable characteristic in their names only took a share of 0.4% of the aggregate assets of the domestic market of investment funds, and their performance was also mixed (Figure 3).

Figure 3: Net asset value of sustainability themed investment funds



Source: BAMOSZ, MNB

There are several factors underlying this modest stock. In addition to the currently still low level of interest on the demand side, “classical” business policy considerations, such as the extra resources required by a green fund, the cost of the necessary know-how, which must be contrasted with the size of the marketable stock, must also be taken into account. Presumably, it is also related to the said resource requirement that domestic green investment funds typically invest in foreign assets, mainly foreign green/responsible investment funds, i.e. the substantial part of the asset selection from the environmental point of view takes place abroad.

On the demand side, the characteristics of the product and the level of development of the investor culture together make it difficult to spread green funds. On the basis of the product information leaflets, it is recommended to invest in green funds - in a scheme focused on equities - for at least 5 years, which does not necessarily meet the general expectations of the Hungarian small investor base. The majority of domestic financial customers are risk-averse or have a low risk appetite.

In the **insurance** sector, primarily unit-linked asset funds are suitable for displaying green aspects and green customer preferences, by having the option of holding more risky assets, which enables them to invest in the shares, corporate bonds of “green” companies, or in “green” investment shares. The MNB has accurate data on the supply of green products, as it has recently conducted a survey among institutions on this topic as well. The questionnaire was sent to the 12 insurers that offer unit-linked asset funds.

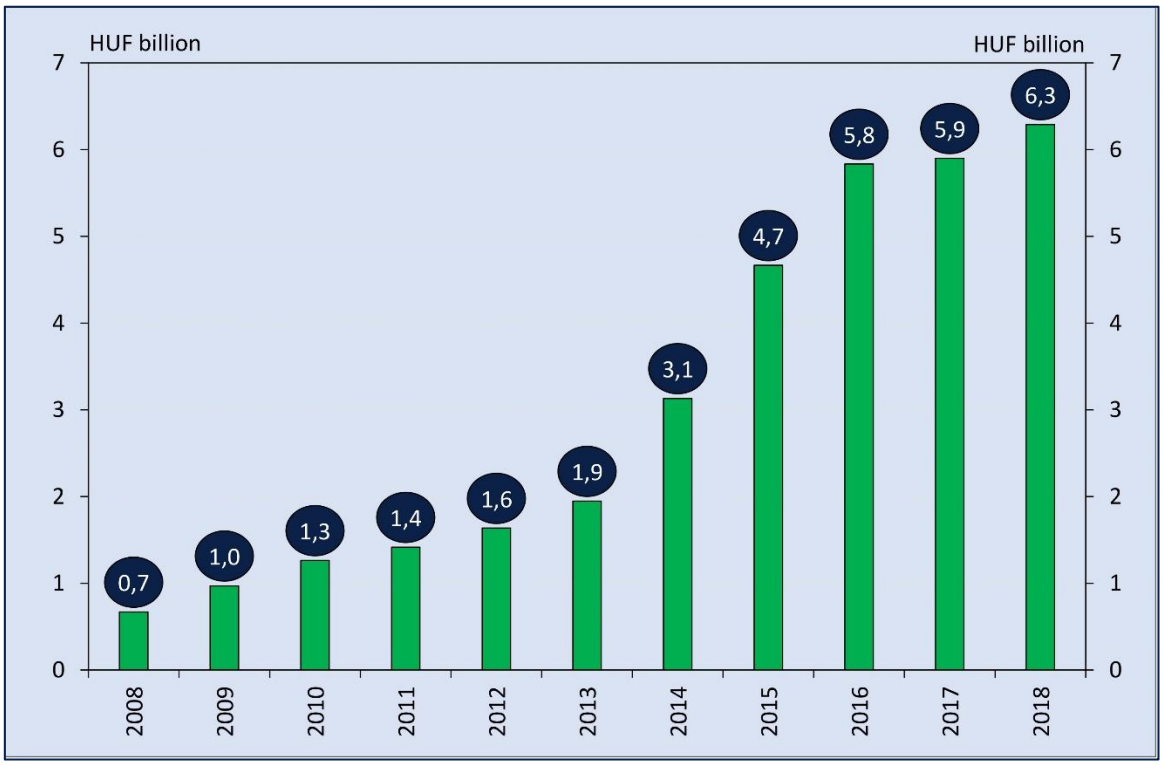
Concerning the specific stocks, it can be determined that in the fourth quarter of 2018, 5 insurers offered a total of 8 green asset funds, in which a total of 17.5 billion forints of customer assets were managed. In terms of the entire market, green exposure is not considered outstanding at the moment, as the sector-level unit-linked reserve amounted to nearly HUF 1,200 billion at the end of 2018, only 1.5% of which are customer assets held in green asset funds. With regard to the investment composition of asset funds, insurers are implementing green aspects through green investment funds abroad and ETFs - so this is one more area there the practice is similar to that of investment funds and fund managers. Based on the answers to the qualitative questions of the questionnaire, domestic insurers do not have a green program at individual level, most of them do not separately define green investments. Green aspects rather appear at operating level, in their internal processes (paperless operation, energy saving solutions, etc.).

The MNB also conducted a questionnaire survey in the spring of 2019 concerning **funds**. With regard to “green” investments, none of the funds takes into account the ESG factors with such awareness that they should be specifically highlighted and defined in investment policies or asset management policies that regulate the activities of asset managers. In the questionnaires (completed by 37 institutions) a total of 15 funds stated they held assets considered green by them. These assets (ALTEO and Panenergy shares, K&H Eco Fund of Funds, Torony Real Estate Investment Fund and foreign shares held in some portfolios) were worth HUF 3.7 billion in the market on 31.03.2019.

The **voluntary pension funds** may implement green aspects through the long-term perspective of the optional portfolio system. At the end of 2018, the total value of voluntary pension funds' coverage pool was close to HUF 1,400 billion. Of the 37 institutions, one pension fund offers a portfolio that has significant

green exposure.[13] The assets of the portfolio increased more than threefold over 5 years, nearly tenfold over 10 years, and amounted to HUF 6.3 billion on 31.12.2018, representing 0.5% of the sector-level coverage reserve. In terms of investment composition, the portfolio is predominantly made up of Hungarian government securities and foreign equities, subject to a high risk rating, therefore customers are recommended to join at least 15 years before retirement (Figure 4).

Figure 4: Evolution of the assets of the "green" pension fund portfolio for the period 2008 to 2018



Source: MNB

To provide a more complete picture of the domestic financial products offering, no **green bond** has yet been issued by any Hungarian financial organization or company.

3.CONDITIONS AND POTENTIAL AREAS FOR GREEN GROWTH

3.1. Macro environment

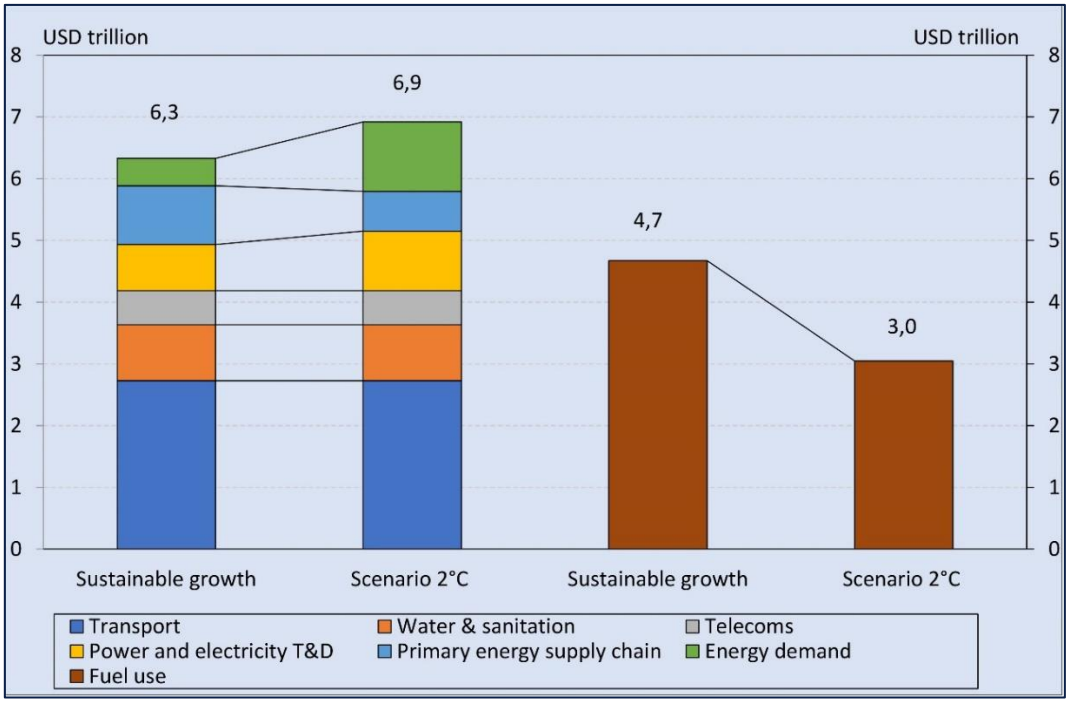
Human activity has contributed to global warming by around 1 °C since the beginning of industrialization, the adverse consequences of which (e.g. an increase in the frequency of extreme weather events) are observable all over the Earth. Mitigation of the risks of climate change, keeping the increase of average global temperature below 1.5-2 °C (as stipulated in the Paris Climate Agreement) require a significant

[13] See: https://www.aegonalapkezelo.hu/befektetesi-alapok/klasszikus/aegon-megatrend-reszveny-befektetesi-alapok-alapja/

restriction of the emission of greenhouse gases. Compared to IPCC 2010, to reach the 1.5 °C target by 2030, it is believed that the annual global net CO_2 emissions should be reduced by 45%, and even achieving the 2 °C target would require a 25% reduction in annual emissions (IPCC, 2018). Such decarbonisation is inconceivable without the rapid and profound transformation of the infrastructure, technology and operational model of most greenhouse gas emitting sectors (mainly energy supply, manufacturing, agriculture, transport and construction).

Radical changes in environmental policy (e.g. restriction of emission, prohibition of certain pollutant technologies, restructuring of taxation and subsidy systems) are also necessary to achieve a low greenhouse gas economy. The transition requires a significant increase in the volume of public and private investment, the re-channelling of funding sources towards low-emission infrastructures, buildings and services. According to the calculations of OECD, in order to achieve sustainable development on a global level, over 15 years a total of 95 thousand billion dollars, an annual average of 6.3 thousand billion dollars in energy, transport, water and telecommunications infrastructure investments are needed, even if the climate protection goals are disregarded. In comparison, in order to achieve the 2 °C target, additional infrastructure investment of 0.6 thousand billion dollars are required. This is about 1.5-2 times the current estimated value of 3.4-4.4 billion dollars. The financial implications of the investments made to achieve climate protection goals can be partially offset in time by the estimated 1.7 billion dollars of savings in fuel costs by 2030, if the investments are implemented. Another positive result may be the economy stimulating effect of the necessary investments. According to the OECD's estimates, investments that integrate climate protection goals could increase the GDP by 1% within 4 years, while by 2050 they could generate GDP growth of 4.7% (OECD, 2017) (Figure 5).

Figure 5: Annual infrastructure investment needs and fuel savings in a low carbon future

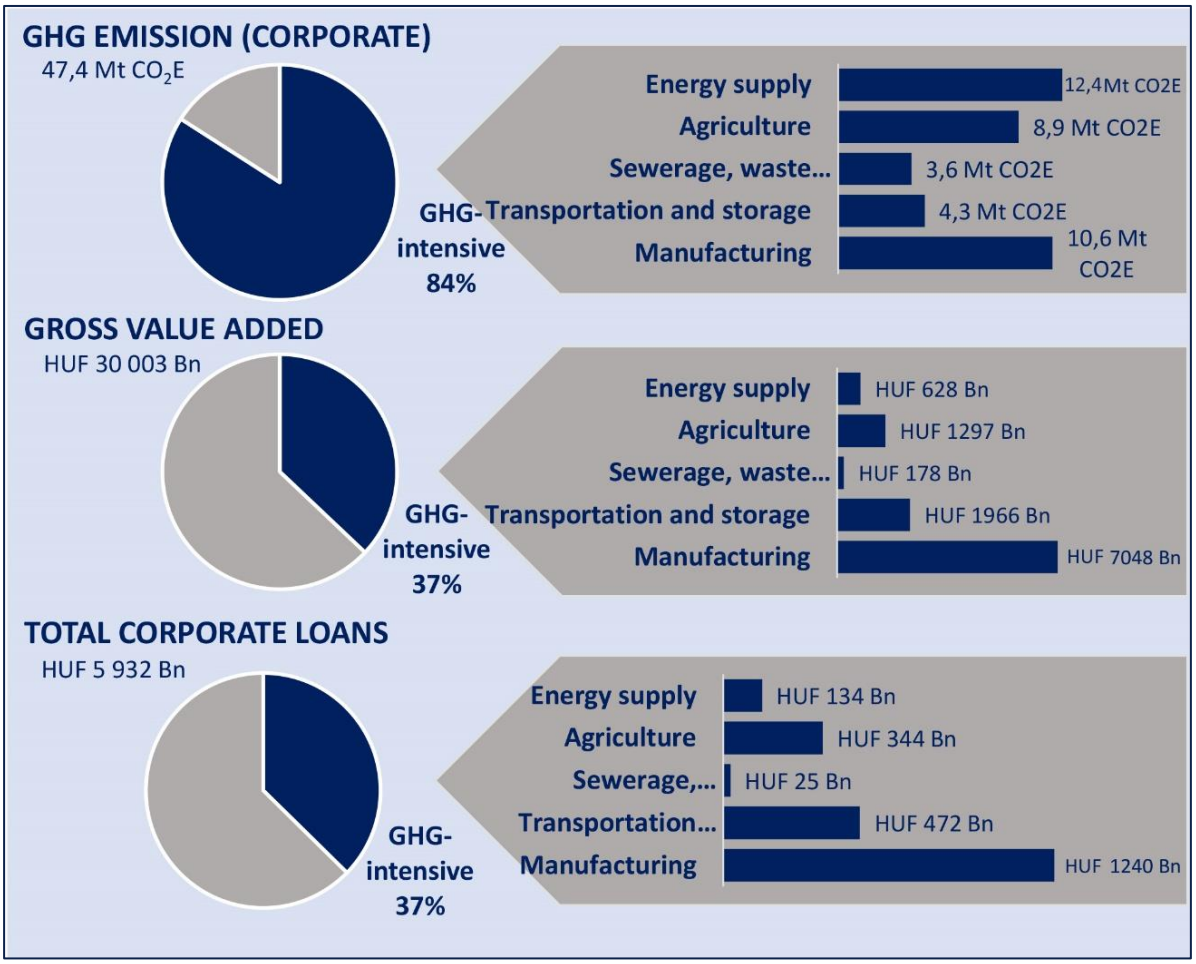


Source: OECD (2017), MNB

In Hungary, the second National Climate Change Strategy (NES), adopted by the Parliament in the autumn of 2018, not only confirms that Hungary is one of the most vulnerable countries in Europe in terms of the consequences of climate change, but also designates the Hungarian Decarbonisation Roadmap. Key elements of the latter include promoting the replacement of fossil fuels, increasing energy efficiency and enhancing energy saving, reducing the exploitation of natural resources, development of the circular economy and green economy, including the related support to research, development, innovation and demonstration projects (ITM, 2018).

At the end of February 2019 Hungary submitted the draft of the National Energy and Climate Plan to the European Commission. One of the most substantial goals of the climate plan is to reduce greenhouse gases (GHG) by at least 40% by 2030 compared to the 1990 baseline, which represents a further 13% reduction compared to 2017 (NEKT 2018). In Hungary, the weight of the 5 sectors responsible for 84% of corporate GHG emission (energy supply, manufacturing, agriculture, transport and storage, wastewater and waste management) stands at 37%, both within the gross value added and the loan portfolio (Figure 6).

Figure 6: The economic-environmental importance of the 5 largest greenhouse gas emitting sectors in Hungary in 2016



Source: Eurostat, MNB

Other specific objectives of the National Energy and Climate Plan by 2030 include the accomplishment of 20% renewable energy share in final energy use, compared to 14.2% in 2016, and energy savings of 8-10% compared to the baseline scenario (business as usual) (NEKT, 2018**).** The transition to a low-GHG economy will require significant investments in Hungary, which, on the one hand, poses a risk owing to the uncertainty regarding the adaptation costs of companies using technologies with bad carbon intensity, which have a significantly bigger environmental footprint than would be justified by their economic weight, on the other hand, it also provides business opportunities for domestic companies and businesses and for the financial sector.

The plan estimates the value of energy efficiency and renewable energy investments necessary for the accomplishment of the goals formulated by it at about HUF 14,700 billion. Naturally, there are a number of additional areas that require significant investments in order to promote environmental sustainability, and that could be financed from private resources allocated through the system of financial intermediaries (environmental investments by SMEs, renovation and modernization of water utilities, expansion of wastewater and cleaning infrastructure, increasing the proportion of recycled waste or even developing the infrastructure of agricultural irrigation, etc.). The MNB's Competitiveness Program regards the implementation of investments aimed at environmental sustainability as important take-off points for Hungary's competitiveness.

3.2. Customer base

To assess the potential of green financial products, it is essential to study the environmental attitudes of the retail segment, since households, as savers and borrowers, can be one of the “bases” of green finance in many ways. Therefore, it is advisable to review the related recent international and domestic research and analysis before examining individual retail products (savings/investments, loans and insurance). The MNB is not aware of any specific research on the green financial demand of the Hungarian household sector, but an overview of relevant international and domestic analyses can still be informative.

The European Commission (EC) has been reporting on the environmental attitudes of European Union citizens every three years since 2007 in the framework of the Eurobarometer surveys. The survey is based on a representative sample at both EU and Member State levels. From the point of view of green finance, the opinions about the personal importance of environmental protection and the role of financial incentives are of particular interest. We have summarized these into Table 1, showing a comparison of the results of the Hungarian sample and those of the entire EU sample.

According to these surveys, almost half of the population in the EU, and within that in Hungary, consider environmental protection to be particularly important. The proportion of those who consider the topic as important is persistently and expressly high, although in the case of Hungary the proportion of “very important” ratings has dropped significantly. The proportion of those Hungarians is also substantial (31%) who believe that the individual has a role in environment protection. Of the possible solutions to environmental problems, a quarter of Hungarians prefer technology investments. The proportion of those who consider financial incentives an effective tool for the resolution, is persistently high (33%). This ratio is higher than the EU average. Financial counter-incentives (taxation) are typically considered by the people to be less favourable. It is characteristic of public expectations of market participants that more than two-thirds of the Hungarians polled said that large companies and industry did not make sufficient efforts to protect the environment (Table 1).

Table 1: Evolution of the environmental attitudes of the Hungarian population in comparison with the EU, based on the Eurobarometer surveys of the European Commission (proportion of those who agree with the statement)

Attitude/variable	2007		2011		2014		2017	
	HU	EU	HU	EU	HU	EU	HU	EU
Environmental protection is very important	71%	64%	64%	58%	58%	53%	49%	56%
Environmental protection is important or very important	98%	96%	96%	95%	95%	95%	94%	94%
Technological investment is an effective solution	- -	- -	19%	26%	- -	- -	25%	35%
The individual has a role in environmental protection	- -	- -	- -	- -	33%	43%	31%	45%
Large companies, industry are doing less than they should **	- -	- -	82%	79%	68%	77%	73%	79%
Providing financial incentives is an effective solution	29%	29%	33%	26%	33%	33%	33%	27%
Taxing pollutants is an effective solution	11%	14%	18%	15%	15%	18%	21%	22%

Source: European Commission Eurobarometer 2007, 2011, 2014 and 2017 on environmental attitudes of the population of the EU.

*2011: More efficient use of natural resources is effective in overcoming problems.
** 2011: to use natural resources effectively, 2014 and 2017: in the interest of environment protection.

Similar results were obtained from the representative survey of the Hungarian Academy of Sciences (Baranyai – Varjú 2015). According to this survey, not only do the majority of the population pay attention to environmental issues, more than two thirds (71%) would be willing to pay more for "climate-friendly" products and services. While the European Commission's survey of 2017 shows that there is no difference in the importance of environmental protection at EU level according to demographic characteristics, the research of the Hungarian Academy of Sciences indicates that residents of Budapest are more concerned about the environment than the rural population of Hungary. The two studies, however, are in agreement in that Hungarians consider, in addition to their own responsibility, the responsibility of companies as significant.

Similar international and foreign surveys also cover attitudes about green and in general sustainability and social responsibility linked finance. Based on these, there are several signs of future growth: research almost unambiguously shows that the “millennial" or Y generation (those born between 1980 and 1995), which holds an increasing share of purchasing power/financial assets, typically wants to manage their finances in accordance with their personal values (EY 2017, US Trust 2018). This is reflected in the investment decisions of the age group, which may play a role in the fact that the global segment of sustainable investments has doubled every year since 2012 and currently accounts for 18% of all managed assets (EY 2017). Recently, investors no longer accomplish the implementation of the values important for them at the expense of return on investment, it is much more typical that they choose the best-in-class in the category of responsible investments. As a result, these portfolios reach - and even outperform - the benchmarks of the traditional investment market (Morgan Stanley 2015).

Similar results are shown by other (not only American) research. For example Schroders' Global Investor Study of 2016 showed the significant appreciation of the ESG (i.e. sustainable environmentally, socially and in terms of management-governance) aspects, according to this study climate change (and other social problems, such as poverty) are significantly more important for this generation, than for other investment segments. It should be highlighted, that according to a survey of 28 countries, representatives of the Y generation are more likely to withdraw their investments from companies poorly performing in terms of ESG, that is, they are specifically “ready to act" in their finances when it comes to sustainability issues (Schroders 2016).

Concerning the results related to attitudes, it should be emphasized that a positive attitude does not necessarily result in corresponding actual behaviour. As Nagy (2012) points out, external factors also play an important role in shaping behaviour. Of these, the author highlights comfort and lack of financial resources. His domestic research has demonstrated a link between these factors and environmentally conscious behaviour. According to his results, the more important comfort is for the individual, the less likely he/she will practice an environmentally conscious behaviour. Not surprisingly, financial constraints also hinder environmentally conscious action, for example, in making decisions on consumption. The financial situation (income) proved to be relevant in the work of Baranyai – Varjú (2015) in terms of environmentally conscious behaviour - for example, the actual financial expenditure involved in purchasing decisions. As a summary of the above, it can be stated that the relevant foreign – international research indicates almost uniformly growing household demands for green (and other responsible, sustainable) financial savings and investments. In a European Union comparison, the green attitude of the Hungarian population is not significantly weaker than in the rest of the countries of the continent, although the role of the individual is considered by the Hungarians to be significantly less important in environment protection. According to the MNB's assessment, it would be absolutely necessary to strengthen the financial literacy and awareness of the Hungarian population, in the expectation that - hopefully - the growing green attitude in Hungary could also appear in finances.

In the above part we only discussed the potential residential customer base. At the same time, naturally, a thorough understanding and targeted fulfilment of the green investment needs and demands of SMEs, companies and municipalities as customers is equally important.

4. STRUCTURAL MEASURES FOR THE DEVELOPMENT OF GREEN FINANCIAL MARKETS

4.1. Integrating the green aspect into risk management by banks

According to the statutory requirements, credit institutions must have a comprehensive, efficient and reliable corporate governance system commensurate with the nature, scale and complexity of the risks inherent in the financial services they perform and the business model applied. One of the most important requirements for this corporate governance system is that banks should apply effective procedures for identifying, measuring, managing, monitoring and reporting emerging risks. According to the regulations in force, the function of corporate governance is not only to promote the smooth and efficient operation of

the organization, to maintain trust in the institution and to implement the economic interests, but also to protect the clients' "social aims related to the institution".[14]

The MNB is of the opinion that environmental sustainability considerations should be integrated into corporate governance, and within that, into risk management, in a much more powerful way than at present. There are two reasons for this: the increase in environmental anomalies is accompanied by an increase in financial (credit and market) and non-financial (reputational and legal) risks, particularly in relation to climate change. On the other hand, the expanding green financing that the MNB wants to encourage should be accompanied by an increase in risk awareness.

Assessed action # 1

The MNB is considering imposing a requirement for all credit institutions to have a proportionate environmental risk management system, that is

- suitable for the identification, measurement, management, monitoring and reporting of environmental hazards, and
- fits in with its lending policy organically, including financing decisions, pricing and the calculation of the bank's internal capital requirement (ICAAP), among others.

According to the MNB's assessment, domestic credit institutions stand at different levels of development in managing environmental risks. Some credit institutions are already taking these effects into account in a relatively sophisticated way, but other banks practically neglect these aspects at present. Of course, there are differences arising from the composition of the loan portfolios and from the nature of the transactions, for example, the direct environmental impact and exposure of project lending and retail lending differ significantly. It follows from the above that the need to adapt arising from the new regulations will vary from one bank to another, but according to the MNB's assessment, all market participants should progress from their current levels.

The MNB expects that, if the environmental risk management system is to be an integral part of the operation of credit institutions, funding should be organically directed towards "greener" paths from transactions carrying a high environmental risk. Apparently, the regulators can facilitate this guiding by internalising the externalities as thoroughly as possible. The MNB, as a regulatory authority, is able to carry out this internalisation only to a limited extent by imposing capital requirement for loans and investments, complementing the toolset of classical environmental regulations (taxes, qualitative and quantitative limits, carbon dioxide emission quotas, etc.).

According to the current plans of the MNB, the recommendation on the environmental risk management system would be issued in 2020. In addition to incorporating existing national and international best practices, there is a strong intention to "channel" the recommendations of the Hungarian environmental experts, environmental agencies and non-governmental organizations as well.

[14]Act CCXXXVII of 2013 on Credit Institutions and Financial Enterprises Article 107

After the entry into force of the new regulation - and the appropriate preparation period - the MNB would also carry out on-site inspections within its supervisory powers, to verify in practice whether lending is performed with a view to environmental risks and impacts.

It should be emphasized that the MNB is simultaneously planning supportive steps for the measure under review, in particular by setting out the main content requirements in the aforementioned, detailed recommendation, providing technical assistance (research, analysis, data) and consulting opportunities for the market participants.

4.2. Developing of retail demand

The MNB's green financial aims cannot be accomplished without a sufficient customer base, without consumer demand, even if the green financing expansion has to be realized to a large extent in the business, corporate segment. Households and businesses, SMEs can make a substantial contribution to the establishment of the green financial segment, both as savers and borrowers.

As explained in chapter 3.2, there is ample room for improvement in the awareness and attitude of the Hungarian population regarding climate change and environmental problems. The latter is the competence of governmental, educational and civil entities and organizations. At the same time, it is a statutory task of MNB to strengthen and disseminate financial literacy and to develop financial awareness. That's why the MNB plans to implement various actions, in order to contribute to enabling the domestic retail (and partly the SME) segment to seek consciously those financial solutions that help achieving environmentally beneficial aims.

Obviously, only a long-term, development strategy with a time horizon of several years is feasible in this field, since neither the development of financial literacy nor the product offering of financial organizations can “become green” overnight. In this context, the MNB is currently planning to launch two measures.

In 2019 the MNB is launching a market research project to assess not only the current awareness and demand of households and businesses in relation to green financial products, but also the drivers of potential growth in the upcoming years. In order to develop the market, it is important to see which products (age group, income, education, etc.) and what kind of product features (for example, environmental impact report presenting the benefits, pricing, participation, etc.) provide a chance for growth. The MNB plans to share the results of market research in a non-competitive way among financial institutions, to promote product development.

In addition to market research, financial education offers the other option for advancement. The MNB is already working on several channels (school programs, publications, events, mobile apps, social media, free financial advice, etc.) together with its partners, disseminating financial knowledge and promoting financial literacy. In the existing channels, the MNB intends to present gradually the idea of green finance to the public, to create awareness in the population of the opportunity to make our finances work for the environment.

Assessed action # 2

The aim of the MNB is to create a growing demand for green financial products in the retail, business and SME segments - hopefully to be offered in an increasingly expanding range, for which the application of the following tools is intended:

- market research in the retail and SME segments;
- financial education programs addressing all segments of the population.

4.3. Trainings, development of the knowledge base

In addition to corporate governance of financial organizations, strengthening the retail base, the third structural development opportunity can be identified in the field of research and training of professionals. International experiences show that the launch of a green financial segment (and otherwise, any other structural change) requires the development of the right knowledge base and human capacity.

For this reason, the MNB is planning a number of steps in this area, involving its existing and potential new partners. Green finance as a topic is expected to be included in the curricula in several universities from the autumn semester of 2019-2020 in lectures and seminars on finances or environmental economics, and in order to mobilize students, the MNB plans to support the announcement of grants for studies. As a result of the increasing number of university programs, it is likely that more and more graduates will be able to enter the labour market with an existing basic knowledge of green finance and, in some cases, with deeper knowledge of a particular subject (for example, they wrote a thesis on it). The Budapest Institute of Banking (BÉT), a subsidiary of the Budapest Stock Exchange, offers practical, basic and advanced level green financial education for experts and managers working in financial organizations.[15]

In the next year, years, the MNB intends to launch a number of theoretical and applied research projects on green finance with its own economic capacities and university partners**,** such as the relationship between energy efficiency and credit risk, the impact of a low-fossil economic transition on the value chain of the sectors financed by lending, or concerning the time horizon applied by economic operators (the so-called short-termism problem). These research projects - as well as further useful contents - are intended to be made public in a dedicated knowledge base available on the world wide web, for use by further researchers and bank analysts.

Assessed/Planned actions #3

Together with its partners, the MNB plans to implement the following measures (some of which have already been implemented or are in progress), in order to build capacity:

- continuously expanding finance specialist training organized by the Budapest Institute of Banking;
- university and PhD level green educational programs;
- conducting and sponsoring applied research;
- sharing and making widely available the green financial knowledge base.

[15] See https://www.bib-edu.hu/kurzusok/banki_penzugyi_tanfolyamok/zold_penzugyek_ii and https://www.bib-edu.hu/kurzusok/zold_penzugyek

5. ACTIONS AIMED TO SUPPORT GREEN FINANCING

5.1. Facilitating the supply of green retail financial products

The purpose of the MNB is to ensure that either the "classic" financial, investment and insurance products should, as much as possible, carry green features (thereby contributing to environmental sustainability) or a dedicated green subcategory is introduced.

In recent years, the central bank has already contributed to the consumer-friendly nature of retail products, comparability and, through these, to boosting competition (fair banking, ethical life insurance concept, qualified consumer-friendly home loans, etc.). The MNB is investigating ways, building on the results so far and the actions - as well as the demand side steps presented in Chapter 4.2 - to promote a regime where green financial products are identifiable and accessible for the consumers as much as possible, furthermore, ensuring that products qualified as green should really have a tangible, verifiable, green benefit.

Assessed action # 4

Possible steps considered by the MNB:

- Definition of criteria for Green Housing Loans
- Definition of criteria for Green Deposits
- Definition of criteria for Green Home Insurance schemes
- Definition of criteria for Green Investment Funds

In the case of green home loans, the purpose of the loan itself would provide the green feature (purchasing energy-efficient property, upgrades improving energy efficiency, purchasing a solar cell or solar collector and installing it), and - as described in detail in chapter 5.2 - lower interest pricing of such loans and potentially capital requirement relief would constitute the necessary supply and demand side incentives. An important conceptual issue is the relationship between green home loans and Qualified Consumer Friendly loans (MFL). According to the current concepts of the MNB, green housing loans would constitute a sub-category of MFL loans, i.e. by applying a kind of ESG approach, a home loan could be labelled green only if it was otherwise consumer friendly.

The MNB is also exploring the possibility of defining criteria for Gree Car Loans/Leasing services that exclusively finance the purchase of electric vehicles. However, it should be noted that for such loans there is no empirical evidence for the favourable risk characteristics (in contrast to energy efficient mortgages where this feature still needs to be further underpinned) and the ultimate environmental benefit is also highly dependent on the energy sourced used to charge car batteries.

The definition of Green Deposit criteria may take place in a later stage compared to Green Housing Loans. The reason for this is that a precondition of a green deposit definition is the more exact definition of green loans (either household or company loan) on the asset side. Should this be achieved, it will be possible to promise savers that placing their funds in green deposits will come with tangible environmental benefits.

In the case of green home insurance, the insurance coverage or pricing of equipment for residential (renewable) energy consumption (solar panel, solar collector, heat pump, etc.) and for the reduction of the

ecological footprint (e.g. equipment utilizing rainwater, special insulation) associated with residential property can be a prerequisite for obtaining the green "label." It may be an important aspect that exclusions should not discriminate items and equipment serving green purposes. At the same time, it should be noted that a similar, positive relationship in insurance does not exists, or is not likely to exist, as opposed to green housing loans (where there is probably a positive correlation between energy efficiency and good credit quality).

In the case of green investment funds, naturally, the composition of the fund's assets could constitute the green nature. For some assets, it is relatively easy to assess the green character (for example, labelled, certified green bonds), while for others, such assessment is more difficult (for example, shares of companies considered to be responsible in some form).

Assessed action # 5

The MNB is also considering the possibility that financial products that may be awarded a green label will be included in the Green Product Register available from the web site of the MNB, to help searches by consumers and the comparability of various offers.

5.2. Capital regulation facilitating green financing

As a supervisory authority, the MNB is responsible for the safe, stable and fair operation of financial market actors, and it is a statutory task for the MNB is to ensure the sustainable contribution of the financial system to economic growth. It follows from all the above mandates that the MNB does not and may not create regulations with a primary environmental goal, since that is the competence of other authorities.

At the same time, the MNB's mandate also implies that it has to pay attention to the environmental impact of financing by banks and other financial organizations, as environmentally irresponsible lending will sooner or later lead to credit, reputation or business model problems and losses.

That is why it is justifiable for the MNB to examine the extent to which it can route - while staying within its micro and macro prudential framework - by applying the regulatory toolset used by it, the resources mediated by the financial system in a green direction.

One of the most important regulatory tools of the MNB is the determination of the capital requirement for loans and investments (shares), since through this it can influence the capital cost and margin of financing. Capital requirements are determined by legislation (the European Union's Capital Requirements Regulation, CRR) in the first round, and in the second round, by the institutions themselves (under the socalled ICAAP process), and ultimately by the MNB (in the so-called SREP process). One of the most important issues in international banking (and insurance) regulation is whether green loans and assets can be shown to carry lower financial risk compared to non-green (or expressly brown, i.e. environmentally problematic) assets. While the MNB participates in these international analyses, negotiations, in the domestic banking market it is planning to introduce these types of green incentives sooner, as a pilot.

Assessed action # 6

As a tool for developing the domestic green economy, in the context of SREP reviews the MNB examines the possibility of introducing new incentives having an effect through the capital adequacy of credit institutions. The MNB is considering the pilot introduction of three different, but not mutually exclusive capital side incentives:

- a green loan capital programme, which is a transitional scheme, supporting green financing as an *advance measure*,
- selective support to green financing, separately for each asset category,
- at a later stage, determination of the capital requirements that discourage the financing of environmentally adverse activities.

According to current plans, the green credit capital program would operate in a way similar to the capital relief related to the former Market Credit Program (MCP), i.e. it would be based on the supervisory review (SREP) process, whereby the MNB regularly reviews the credit institutions' internal capital calculation and determines the minimum capital required by the institutions based on the assessment of the risks. In this context, the central bank would encourage green lending by financial institutions by releasing part of the capital requirement for their new green credit placements for a specified term (e.g. 3 to 5 years).

If the program is launched, then the details would naturally be designed based on consultations with credit institutions and other stakeholders. According to the current plans of the MNB

- the definition of green loans provided by the MNB would be based on the European Commission's drafts of taxonomy[16],
- but energy-efficient mortgages (see below) and loans intended to finance renewable energy production would also almost certainly constitute part of it;
- certain conditions would be laid down for loans underlying the capital relief (e.g. lower interest rates),
- the banks participating in the program would be required to make certain commitments, in particular the provision of data on green loans.

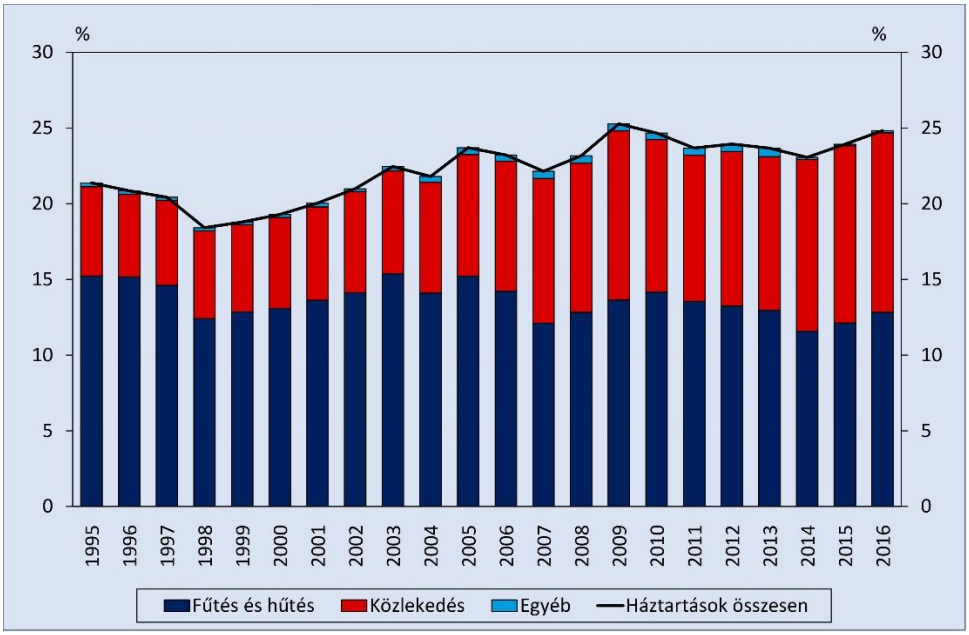
The purpose of this data provision is to enable the MNB to accurately measure and model the credit quality of green loans, so that the advance program, currently planned to be transitional, can be replaced by a system with longer-term sustainability, in which high quality green loans (or certain subcategories thereof) would qualify permanently for the (SREP) capital relief under pillar II (SREP) or even - in view of the regulatory developments of the Union - for the (regulatory) capital relief under pillar I. In the first round, the MNB plans to assess justification of this non-transitional capital requirement relief based on this data provision, in the category of energy-efficient mortgage loans.

[16] https://ec.europa.eu/info/files/190618-sustainable-finance-teg-report-taxonomy_en

Energy-efficient mortgage loans

Based on Eurostat's data, 25% of greenhouse gases (GHG) are emitted directly by households, by burning different fuels in Hungary, half of which come from heating and cooling activities (Figure 7). [17] In addition to direct GHG emissions, indirect GHG emissions from households are also significant. In Hungary, 20% of total emissions can be attributed to energy supply, 40% of which is used by households, while the EU average for the same figure is only 26.5% (ITM, 2018). Domestic energy consumption is increased by the fact that nearly 80% of the 4.4 million Hungarian homes do not meet the state-of-the-art functional technical and thermal technical requirements. Especially buildings built between 1946 and 1980, most notably detached single-family houses have poor energy efficiency (NFM, 2015). This has a huge potential for reducing residential energy consumption and GHG emissions, however, further transformation of public attitudes and environmental awareness are also essential, in addition to the provision of financial incentives and accessible forms of funding.

Figure 7: Households' direct emission share within total greenhouse gas emission



Source: Eurostat, MNB

In order to facilitate financing, a number of financial institutions worldwide offer dedicated retail green credit products that are mostly aimed at improving the energy efficiency of homes. A common feature of these products is that borrowing is encouraged by providing various benefits, such as lower interest rates, a higher credit amount available with the same income or credit collateral, or waiver of the prepayment fee. In Europe, the EU-funded Energy Efficient Mortgages Initiative aims to promote energy-efficient real estate purchases and energy efficiency improving investments in real estate through preferential loans.

[17] https://ec.europa.eu/eurostat/data/database#

Incorporating financial incentives into the lending process can be justified from an economic point of view, in addition to supporting the accomplishment of global climate protection goals. Based on the results of the research of the University of North Carolina, the risk of mortgage loans borrowed for energy-efficient homes is 32% lower than the risk of other mortgage loans, with all other factors unchanged (Kaza et al., 2013). Of the reasons we could highlight lower public utility bills, resulting in higher income available for loan amortization and the higher collateral value attributable to the value-increasing effect of energy efficiency investments.

The Energy Efficient Mortgage Initiative[18] - which was launched 2 years ago - has the primary aim to promote the flow of private capital in energy efficiency investments by the creation and wide implementation of the uniform *energy efficient mortgage* (EEM) concept. Participating banks are committed to supporting the purchase and construction of energy-efficient properties and investment in energy efficiency improvement in residential buildings, having recognized the lower credit risk of energy-efficient properties.

By April 2019, 45 credit institutions from 14 European countries joined the pilot project of EEM, which together cover 55% of the European Union's existing mortgage loans. [19] From the Central-Eastern European region, banks in Poland and Romania are participating in the pilot project.

The MNB has recently joined the EEM Advisory Board, and intends to launch a domestic platform among Hungarian banks, with the same purpose as that of the international initiative. Based on the data of the participating banks, the aim is to build a comprehensive credit risk database as well, which will provide a good basis for assessing the lower risk of energy efficient mortgages, and therefore the reduction of the capital requirement applying to them.

In addition to the two regulatory approaches (both of which are based on benefits) outlined above, the MNB also plans to introduce "reverse" incentives in the long run. Funding of economic activities raising environmental concerns could be discouraged by a higher capital requirement. However, the introduction of such a regulation requires caution and further work. Ideally, the externalities of environmentally harmful activities will be internalized by different means (e.g. taxes, fees), and therefore this item will already appear in the profitability of the particular polluter company, which should theoretically make borrowing loans from banks more expensive and less available. At the same time, today a significant part of the externalities are not properly internalized, and some restrictions may only come into effect during the term of loans with longer maturity (a case in point is the transition risk arising from emission restricting measures), which banks do not or do not necessarily take into account today.

Therefore, because of the difficulties mentioned above, it is a time-consuming task to determine the extra capital requirements of "brown" loans, and this aim cannot be detached from the risk management project mentioned in chapter 4.1 either. With regard to those, in the initial stage of the Green Program the MNB

[18] Participants include the European Commission, the European Parliament, the European Investment Fund, the European Investment Bank, investors, issuers, creditors, appraisers , energy suppliers, construction experts and scientific institutes.

[19] https://eemap.energyefficientmortgages.eu/the-energy-mortgages-initiative-embraces-the-polish-market-pko-bank-polski-and-pko-bank-hipoteczny-join-the-pilot-scheme/

considers not penalizing brown loans, rather giving incentives to green loans as the measure that can be implemented sooner.

5.3. Promoting long-term fundraising for green lending

Owing to their nature, most of the investments serving environmental sustainability will be returned only over a relatively long time horizon. From the point of view of banks' liquidity risk, long-term loans increase the maturity mismatch between assets and liabilities, and the limitation of this mismatch is a requirement for risk management that is required by the regulatory agencies with increasing stringency.

The MNB does not consider it justified from a prudential aspect that green assets should be preferred in the liquidity rules (LCR, NSFR, etc.) to "non-green" items. At the same time, as the provision of the necessary long-term financing is a fundamental condition for green growth, it is considering ways to promote the provision of this long-term financing.

As mentioned in Chapter 2.1, in the current international practice, green bonds are one of the fastest growing financing instruments, and - based on foreign experience - the financial sector is playing an increasingly prominent role in the green bond issuer market, both in the case of uncovered and covered bonds („green covered bond” – “green covered bond”). In our region (Poland), the first green covered bond issue (in the amount of 250 million zlotys) has taken place recently, covered by energy-efficient mortgage loans.

Naturally, the most substantial benefits of green bond or green covered bond issuance are the financed green projects. However, obviously, green projects can also be financed from "non-green" sources (such as simple deposits or borrowing in the case of companies), i.e. green bonds themselves are not required for green benefits to exist.

At the same time, according to the assessment of the MNB, green bonds and green covered bonds may have specific advantages compared to other fundraising channels. From a financial point of view, it could enable the achievement of lower funding cost compared to other forms of fundraising, which is caused by the current demand-heavy situation on the one hand, on the other hand, the transparency required for green bond issuance could also help to improve credit pricing. It is important to highlight that the potential price advantage is a function of many factors (e.g. the amount of the issue) and is not high anyhow - currently the so-called “greenium” hovers between 0-3bp, depending on the bond sector. Another possible financial advantage is that potentially such ESG investors are also accessible who would not otherwise buy Hungarian bonds, or even longer maturities are accessible.

However, according to the MNB's assessment, green bond issue could also have non-financial and "macro-level" benefits going beyond that scope. The most important of these advantages is the message of green bond issue: based on foreign experience, green bonds are actually catalysts for launching the entire green financial segment by putting the country on the map for international markets, ESG investors, while the issuer itself apparently acquires a significant reputation advantage compared to its competitors. A further advantage of green bond issuance that is difficult to quantify is the accreditation process itself, which can enhance corporate culture. That is, the issuing entity must think through its processes, measure and report on the effects of the financed projects, and apparently, improve its corporate governance and investor

transparency. In many cases, this requires a completely new approach, which can sometimes be assisted by an external consultant, a so-called second party or an external green rating.

Naturally, in addition to the benefits, costs should also be anticipated. For the sake of a realistic picture, it is important to recognize that while the lower cost of funds theoretically feasible with a green bond is uncertain, there are certainly extra costs (such as external rating, internal processes) compared to regular bond issue by a bank, which costs are typically fixed, i.e. relatively significant if the issued amount is low. While the costs of a possible Hungarian issuance is difficult to estimate, according to some indications, the price of external ratings could be a few tens of thousand euros, the development of the internal corporate governance systems is a much more significant cost element.

In view of the above, the MNB would consider it favourable if green bonds were also issued in Hungary. From the aspect of corporate bond issues, it is important to mention the MNB's Bond Funding for Growth Scheme, which may also include corporate green bonds or green securities issued under securitization, with the same conditions as "non-green" bonds.[20] As the authority responsible for regulating the financial sector, the MNB is able to stimulate the issuance of green bank covered bonds issued by mortgage banks.

Assessed action # 7

To encourage green covered bond issuance, the MNB is considering to grant benefits to green covered bonds in the Mortgage Loan Financing Compliance Indicator (MLFCI);

The MLFCI ratio is calculated as the ratio of net forint funds (e.g. covered bonds, other securities issued with mortgage coverage, mortgage bank's refinancing loans) divided by the portfolio of net retail mortgage HUF loans with an outstanding maturity of over 1 year on the consolidated level. The regulation does not currently distinguish between green and non-green covered bonds. However, the MNB investigates the possibility and the justification for green covered bonds to be taken into account with a higher weight in the numerator of the indicator, given the extra quality element provided by green accreditation and the presumably better loan quality of the cover assets (green loans), and through that the more stable cash flows.

6. FURTHER ASSESSED ACTIONS

The measures outlined above are the areas where the MNB considers progress to be most important, and where thinking has gone the longest way. There are three additional topics that are related - with varying degrees of closeness - to the scope of the planned measures.

Green rating companies: As stated in this document in several places, the key players in green financial markets are the qualifying, certifying firms, agencies that certify, assess compliance with green standards.

[20] https://www.mnb.hu/monetaris-politika/novekedesi-kotvenyprogram-nkp

(This rating is always requested and paid for by the entity that issues the green product, like a green bond). The most important benefit of external rating is the maintenance of the “integrity" of the green label, reduction of the risk of *greenwashing*. At the same tim e, certification obviously means a disadvantage for green products on the cost side, compared to the rest of financial products. This element, which can actually be considered as a market entry barrier, is therefore useful, on the one hand, but on the other hand, it should not have an exceedingly strong restricting effect in a market still in its infancy.

The MNB will therefore analyse in detail the extent to which it is appropriate to rely on external rating companies for green products. On the basis of foreign experience, the range of options is very wide: it is possible that certification companies offering affordable services will appear in the Hungarian market and offer a satisfactory (a purely market-based) solution, but there are also examples of well-functioning models in which non-profit organizations or even state owned institutions act in this role.

The role of sustainability disclosures: Some credit institutions in Hungary disclose information on environmental sustainability on their website, and some market actors also prepare a comprehensive sustainability report compliant with the Global Reporting Initiative (GRI). The forthcoming EU framework contains elements that will make the disclosure of sustainability information and data - but not a complete sustainability report - mandatory. The MNB currently does not plan to introduce these European requirements sooner, but analyses the possibility of requiring the publishing of some sustainability information (even with a narrower scope initially) to effectively support the development and expansion of the green financial segment.

Paperless operations: In recent years, financial institutions in Hungary have achieved remarkable results in the digitisation of their services and, through this, in the field of de-papering. De-papering (or at least lower paper usage) was partly made possible by the more permissive regulatory environment. In order to make further progress, the MNB analyses whether there are still remaining legislative requirements that impose unjustified paperwork.

On the basis of the proposals received by the MNB so far, the mandatory paper-based filing of complaints and the requirement to send a copy of the minutes drawn up in the case of complaints received by telephone or through video bank results in the consumption of several thousand sheets of paper annually. Therefore, the Supervisory Authority will assess the possibility of amending the regulation in this field. The other potential opportunity for de-papering is offered by the administrative rules of the Financial Arbitration Board (FAB), where the MNB analyses the opportunities for digitisation in cooperation with the office of FAB. Customers wishing to settle their dispute with financial service providers are currently required to file their claim on paper, and all subsequent communications are made on paper, including, for example, the reply documents of financial services providers. At the same time, however, it is important to emphasize that the interests of customers (in particular, the more vulnerable consumers who do not have electronic communication facilities) may not be harmed in the interest of de-papering.

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Naturally, in addition to the above, several other steps may be justified, useful, concerning the establishment of the green financial market. One of the aims of this discussion paper is to inspire further ideas and suggestions. The MNB expects financial organizations and other stakeholders not only to comment on the plans outlined above, but also encourages the raising of new ideas, even completely innovative ones, from stakeholders.

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