Climate-related transition risks and opportunities

White Star Real Estate Kft

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Contents

Assessment of climate-related transition risks and opportunities

Népliget Center was assessed for environmental and climate-related transition risks in April 2023. The analysis covered the financial impact of decarbonising the building according to the Paris Agreement's 1,5°C decarbonisation pathway[1]. The current risk management document divided the decarbonisation ambition into specific categories to enable a more accurate assessment of the different risk dimensions. Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD) guidelines were consulted and applied in segmenting transition risk categories. Table 1 below shows risk assessment results, and the description below provides a detailed analysis of their understanding.

Facility management of the building conducted the present assessment with the involvement of CBRE Hungary's ESG team, as an external consultant. The consultant also prepared the environmental assessment of the asset in April 2023, on which this risk and opportunity analysis relied on besides expert judgement. The financial thresholds were set based on the inputs of the owner of the building, Marathon Asset Management.

Table 1. Key climate-related transition risks identified

Climate-related transition risks		Time horizon and financial impact			
Classification	**Risk**	**2025**	**2030**	**2035**	**2040**
Policy and Legal	Alignment with climate policies				
	Carbon pricing mechanisms leading to increased costs				
	Enhanced reporting obligations				
Technology	Energy efficiency and management				
Market	Changing tenant expectations				
	Financing and capital market trends				

Note:
Minor damage – 10-100k EUR – Minor property damage/loss – No or little disruption to operational activity
Medium damage – 0,1-1m EUR – Serious property damage/loss – The asset is inoperable or operates at permanently reduced capacity
Major damage – >1m EUR – Major property damage/loss – The asset is not working/not marketable

Policy and Legal Risks

Alignment with climate policies

The assessment of the asset's compliance with the Paris Agreement's 1,5°C decarbonisation pathway was conducted with the Carbon Risk Real Estate Monitoring Tool (CRREM). According to the analysis, the asset will start being stranded as of 2025. The reduction of CO_2 emissions and alignment to the 1,5°C pathway, will require additional energy retrofitting measures (for more details, see the 'Climate scenario analysis' chapter). The cost of these measures was

[1] *"The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016.*
Its overarching goal is to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels" and pursue efforts "to limit the temperature increase to 1.5°C above pre-industrial levels. However, in recent years, world leaders have stressed the need to limit global warming to 1.5°C by the end of this century." (Source: https://unfccc.int/process-and-meetings/the-paris-agreement)

estimated to amount to approximately 700 000 EUR in the report prepared in April 2023. This corresponds to a medium-level risk allocation.

Carbon pricing mechanisms leading to increased costs

On the one hand, the European Union's new Emission Trading Scheme (EU ETS 2) will include buildings as of 2027[2]. In Hungary, a law passed in July 2023 has imposed tax payments on EU Allowances that companies receive as free emissions quota. This may be an additional factor to count with and there is uncertainty whether other such measures will be introduced over time, or not[3]. This represents a potential, currently non-quantifiable risk in increasing operational costs. At present, we classify this as a minor risk, as the current ETS carbon market price (around 90 EUR/t) multiplied by the total CO_2 emissions (1 304 tCO_2) of the building in 2023 would stay below 100 000 EUR per year. Moreover, this scenario is a worse case approach as free European Union Allowance (EUA) would most probably be allocated to assets under scope.

On the other hand, obtention of loans under favourable conditions, or at all, and investor interest will probably be at risk as we move towards the stranding year, if measures are not taken to push it back or align the asset to the 1,5°C pathway. The measures should be identified via a deeper analysis of the building.

Enhanced reporting obligations

The emerging sustainability reporting obligation can also be listed among the risk factors, but associated with a minor financial impact as the cost elements are not substantial if we consider that initial consultancy, internal resource allocation, or a dedicated person would be needed to comply with requirements.

Technology Risks

Energy efficiency

The asset's Energy Performance Certificate (EPC) dates to 2012 while a new classification system has been introduced in 2016. On 1 November 2023, the methodology was further amended, and the relating regulation requires the renewal of old building EPCs upon selling or leasing buildings in Hungary as of January 2024[4]. The EPC of Népliget Center states the highest level ("A") in the pre-2016 classification and CC level in the post 2016 classification system. Nearly Zero-Energy Building in this system started at "BB" level. Népliget Center is within the primary energy demand threshold, but is lacking 25% on-site renewable energy production, which is needed to achieve that level. EPC under the latest requirements dating November 2023, are under preparation at the time of this analysis.

90% of the building's common area lighting fixtures are LED light sources and dimming time was reduced by 50% in December 2022. Thus, the lighting system of the building is considered up-to-date posing no notable risks.

A new BMS is being commissioned, which will potentially result in 5-15% energy consumption reduction per year.

We consider energy efficiency measures as a medium risk as the total retrofit budget to reach the 1,5°C energy reduction pathway was estimated at 700 000 EUR. Further analysis is needed to refine this CAPEX estimation.

Renewable energy

Another risk factor is the lack of on-site renewable energy capacities. In the new system, prominent EPC classifications start from the "BB" level. This category (or higher) also classifies as a Nearly Zero-Energy Building (NZEB) which requires 25% of the total energy demand being produced by on-site renewables. The building currently has a Viessmann solar collector system covering approximately 35,5% of hot water production during Summer. The building's assessment found that the efficiency of the system is not optional. Hence, if the building is to be improved,

[2] https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/ets-2-buildings-road-transport-and-additional-sectors_en
[3] https://www.rsm.hu/blog/adotanacsadas/2023/07/itt-a-szen-dioxid-kvota-ado
[4] https://ceelegalmatters.com/hungary/23624-new-rules-on-energy-performance-certificates-will-apply-from-november-2023

investment in most likely solar panel installations will result in costs in the form of capital expenditure. This is considered a medium risk if costs exceed 100 000 EUR.

Building Management System and control

Besides the intensive use of fossil fuel in heating the building, the main decarbonisation risk is the non-operational Building Management System (BMS). The BMS and hardware devices are in a working condition corresponding to their age, but the Direct Digital Controllers (DDCs) storing the software, controlling various equipment, and ensuring the automatic operation of the entire building cannot be repaired due to software errors, hence is not functional. Currently, the building is operated manually by facility management. All equipment and comfort parameter settings depend on the expertise and availability of the facility management staff. Operability of the BMS affects the continuity of operations of the building already on the short-term. A new BMS is being commissioned, which will potentially result in 5-15% energy consumption reduction per year. We consider this a medium category risk as the costs will not exceed 500 000 EUR most probably.

Market Risks

Changing tenant expectations

This evolution is considered as one the major risks on the Hungarian real estate market on the long term. Seeking buildings with prominent sustainable performance is currently still an emerging tenant trend[5]. This does not necessarily come from the tenants' environmental attitude, but occurs as an indirect result of legal requirements and internal, group-level policies that tenants must comply with. Due to such compliance factors, the sustainability performance of the building will not only influence the asset value, but also the tenants. The Hungarian market is mixed in the respect of environmental awareness, meaning that both EU and non-EU players are present with different levels of expectations. That results in lagging transition dynamics comparing to Western European markets. However, the tenants' rising need for improved sustainability performance will be a medium risk factor already in the mid-term and expected to turn into an inevitable factor by the end of the decade as companies will be reaching the 2030 milestone of decarbonisation strategies. We consider this as a medium-level risk already on the mid-term if stranding occurs in 2025. Should no further retrofit occur, this might turn into a high risk as 2050 is getting closer as sustainability performance would go below market average and potentially increase vacancy.

Financing & capital market trends

As the sustainability standards will be higher for the construction of new buildings, these buildings will offer a higher sustainability performance to tenants. The decarbonisation pathway of Népliget Center shows stranding as of 2025 already without retrofit. The magnitude of decoupling from the expected pathway grows remarkably by 2040 which may mean a possibly non-marketable asset, or a carbon value-at-risk of 2,74% compared to the gross asset value of the building[6], or higher financing costs for retrofitting. Currently, market players are still preparing for accurate target setting and proper reporting, but as their awareness and the quality of data will increase, new state-of-the-art projects might emerge in the long-term. It will be a challenge for the owners of existing buildings to compete with those.

Taking into consideration the carbon value, we consider this a high risk on the long-term. Besides the influence on asset value, this risk factor could have a multiplicative impact affecting individuals working for the asset and the local community, as well. Should the market value or occupancy of the asset decrease, it may have an impact on the direct and surrounding communities:

- the employment of the buildings' service staff could be at risk
- the attractiveness of the neighbourhood and vulnerable communities' access to amenities or office space might also suffer.

[5] https://www.nordicsrealestate.com/press-releases/sustainability-certified-office-buildings
[6] Carbon value at risk was calculated in the CRREM model assuming a 35 000 000 EUR gross asset value in 2023.

Opportunities and responses to climate-related risks

Resource Efficiency and Energy Source

As a short-term action, the building's management aims at renewing its EPC and conducting an in-depth energy audit to reveal clear improvement measures. The latter action is expected to reduce energy consumption and related carbon emissions. The replacement of the non-functioning BMS has been already started at the time of drafting this assessment, and will be carried out in Q2 2024. That is expected to optimize facility management processes and maximize the building's energy efficiency potentials.

On the mid-term, several energy efficiency measures will be reviewed for implementation. Among others, the possibilities of replacing the gas boilers to heat pumps to provide heating and installing solar panels on the rooftop surface will be investigated. According to initial estimations, heat pumps could entirely substitute for the gas consumption of the building and there is suitable surface to install 4-5 000 m^2 of photovoltaic capacities and cover 20-25% of the common areas' electricity consumption. These measures would also contribute to energy independency of the building and align the asset with the expected 1,5°C decarbonisation pathway until 2050. We observe Hungary's energy efficiency credit trading scheme[7] as a risk mitigator enabling the financial capitalization on the described measures.

Products and Services & Market

The described measures are expected to put the building in a better competitive position. This will have the potential to serve shifting consumer preferences and thus, result in lower vacancy and steady revenues with probable rent premiums, which is an evolving trend on the market. The newly built buildings have been identified as a potential competitive risk to older buildings due to their higher sustainability standards[8]. That evaluation is based on present policy and market practices focusing on the operational features of buildings. Nevertheless, emerging trends show that embodied carbon emission considerations will be gradually integrated in stakeholders' decision making[9]. The potential prevalence of this trend would force tenants to prefer (retrofitted) existing buildings over new constructions.

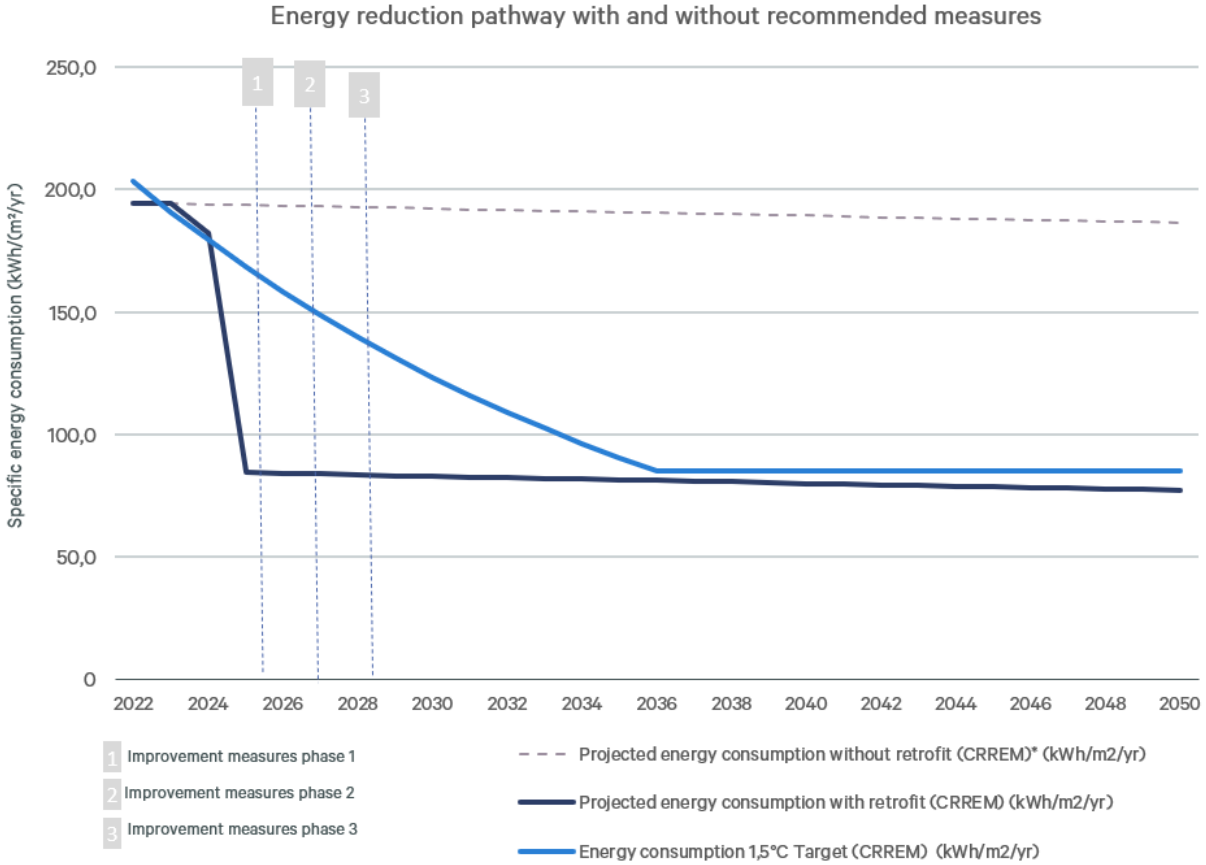
[7] https://www.enhat.mekh.hu/ekr
[8] https://mediaassets.cbre.com/-/media/project/cbre/shared-site/insights/books/2023-book-media-folder/esg-value-drivers-revealed-media-folder/2022_global_esg_survey.pdf?rev=f2611a6225c34bcd997748fd2e85130f
[9] https://www.crrem.eu/wp-content/uploads/2023/09/Report-Embodied-carbon-vs-operational-savings_Sep23.pdf

Climate scenario analysis

The assessment investigates the asset's compliance with the Paris Agreement's 1,5°C decarbonisation pathway. The calculations were made with the CRREM tool's 2022 version based on the building's 2022 energy consumption.

Figure 1 shows the building's energy reduction pathway based on the current technical parameters and includes a scenario with possible improvement measures. The present state of the building results in an short-term stranding occurring in 2024. Although, the reinstallation of the BMS is being carried out (Improvement measures phase 1), that measure itself will not be sufficient to bring it back under the consumption level required for the 1,5°C target. The most significant impact will occur in the second phase of the improvement measures, i.e. the installation of heat pumps that will remarkably reduce the building's energy intensity. Installing photovoltaic panels (Phase 3) will not further decrease, but simply decarbonise the building's energy demand. That will contribute to the decarbonisation of the energy use. The figure aggregates the impact of all three measures combined.

Figure 1. Energy reduction pathway of Népliget Center

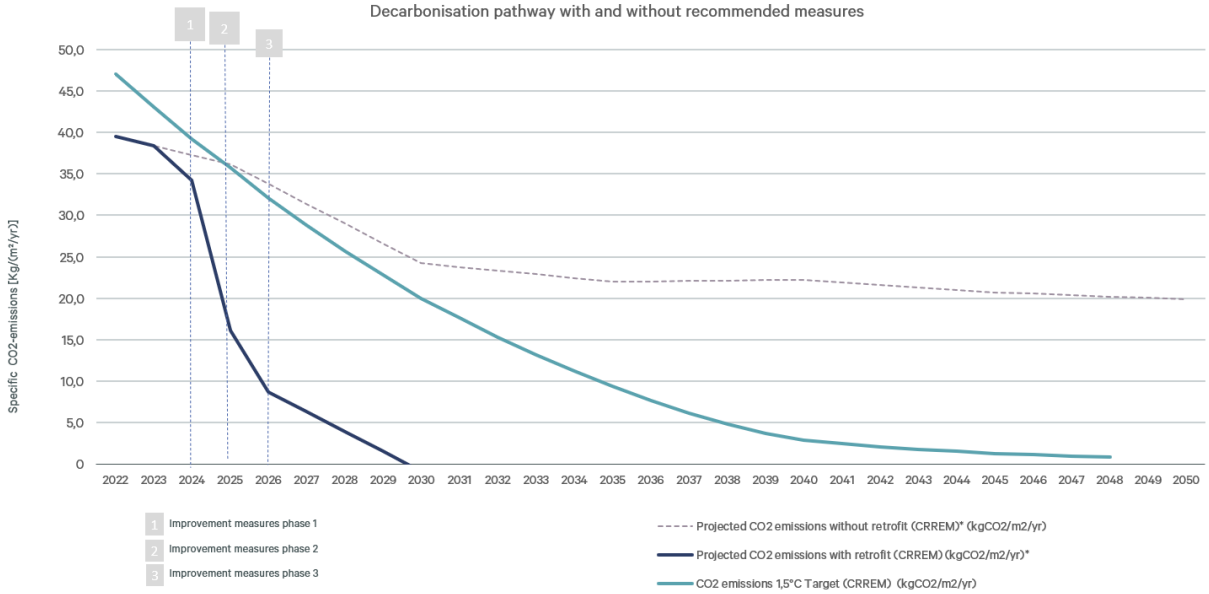


Note:
Improvement measures phase 1 – Reinstalling a BMS system to properly automate building settings
Improvement measures phase 2 – Installing heat pumps as a substitute for gas boilers to provide heating
Improvement measures phase 3 – Installing photovoltaic panels on the rooftop

Figure 2 depicts the decarbonisation pathway of the building, highlighting that it will reach a stranding point by 2025 without energy retrofit measures. The reinstallation of the BMS will enable the building to postpone this stranding to 2028. After that, three implementation scenarios may be followed. Installing only the heat pumps would keep the building's decarbonisation pathway below the targeted line, preventing stranding until 2050. If reinstalling the BMS would be followed by the photovoltaic installation, it would postpone stranding to 2032.

The figure shows the third scenario, the combined effect of the measures. It concludes that the building could achieve net-zero emissions by 2030 through installing both heat pumps and photovoltaic panels.

Figure 2. Decarbonisation pathway of Népliget Center



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Applied metrics

Table 2. Metrics used to assess climate-related transition risks

Indicator	Quantity (in 2022)	Unit
Floor size		
Gross Internal Area	25 543	m^2
Net Lettable Area	*22 232*	*m^2*
Common Areas	*2 311*	*m^2*
Average annual vacant area	2 935	m^2
Floor area of office space	75,38	%
Floor area of kitchen space	24,62	%
Energy consumption		
Annual electricity consumption	3 061 664	kWh
Annual gas consumption	2 793 179	kWh
Water consumption		
Annual water consumption	13 247	m^3
Waste management		
Total waste generation	89 996	kg
Municipal waste	*71 226*	*kg*
Paper	*9 380*	*kg*
Plastics	*1 063*	*kg*
PET bottle	*308*	*kg*
Fat and grease	*3 920*	*kg*
Oil and mud	*4 100*	*kg*

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