

Second-Party Opinion Crown Holding Kft. Green Bond Framework Hungarian Real Estate Development



Scope ESG Analysis has assessed the alignment of the Green Bond Framework (Framework) of Crown Holding Kft. (Crown) with the 2021 Green Bond Principles (GBP) of the International Capital Markets Association (ICMA). In Scope’s opinion, Crown’s green bond framework is fully aligned with the GBPs.

This second-party opinion is based on the four GBP components: use of proceeds, process for project evaluation and selection, management of proceeds, and reporting. In addition, our methodology supplements the use of proceeds element with three additional assessments: alignment with the EU Taxonomy’s criteria on climate change mitigation, an impact of proceeds assessment and a review of impact risks. The Framework has received two leaves, which is the second highest score in our ‘leaf score’ system.

Issuance assessment

GBP components	Fulfilment	Overall assessment
Use of proceeds	<ul style="list-style-type: none"> Green buildings Energy efficiency Renewable energy Clean transport 	
Process for project evaluation and selection	<ul style="list-style-type: none"> Establishment of Green Bond Committee comprising three members of the company and the possibility to include a sustainability expert to manage the process evaluation and selection of projects 	
Management of proceeds	<ul style="list-style-type: none"> Proceeds documented and updated in the green finance register Proceeds allocated as soon as possible and held in short-term, liquid interest-bearing government bonds or cash and cash equivalents before allocation 	
Reporting	<ul style="list-style-type: none"> Annual reporting of allocation of proceeds within 12 months of first issuance Impact metrics include reporting on greenhouse gas emissions savings, energy savings and renewable energy generation 	

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Figure 1: Alignment with United Nations Sustainable Development Goals



Figure 2: Engagement with EU Taxonomy draft regulation



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Methodology

We were commissioned by the issuer to provide a second-party opinion on its Framework. We based our opinion on:

- Crown's internal documents;
- Interviews with Crown's relevant stakeholders;
- Documents on external market/regulatory research; and
- Data from our internal database.

Our leaf score summarises our evaluation and verification of the environmental impact of Crown's Framework. The described targets within each of the green project categories lead to individual leaf scores. In the case of multiple project categories, the aggregate of the scores yields the overall score of our second-party opinion report.

Our minimum requirement for GBP alignment defines that each green project category of the Framework has a positive environmental impact, as represented by one green leaf.

Scoring	Description	GBP category	Sector criteria
	Transformative environmental contribution and strong alignment with relevant market standards	Green buildings Energy efficiency Renewable energy Clean transport	LEED (Platinum) or BREEAM (Outstanding) and life cycle assessment Residential Energy Performance Certificate (EPC) of A to A+ Self-sufficient building; energy supply exclusively from solar, wind or geothermal sources Zero direct-emissions transportation and supportive infrastructure such as electric vehicles and public transportation, charging stations, bicycle parking
	Significant environmental contribution and alignment with selected market standards	Green buildings Energy efficiency Renewable energy Clean transport	LEED (Gold) or BREEAM (Excellent or Very Good) Residential Energy Performance Certificate (EPC) of at least B Energy demand partly covered by renewable energy; long-term goal is self-sufficiency of the building Semi-electric transportation or transportation infrastructure that substantially reduces current emissions output
	Environmentally friendly but limited long-term transformation	Green buildings Energy efficiency Renewable energy Clean transport	LEED (Silver) or BREEAM (Good) Residential Energy Performance Certificate (EPC) of at least C At least one element (e.g. heat pump, solar cells) is integrated into the building Transportation that reduces emissions but does not contribute to long-term transformation or transportation infrastructure that can be environmentally harmful in its construction
	No significant environmental contribution	Green buildings Energy efficiency Renewable energy Clean transport	LEED (Certified) or BREEAM (Pass) Residential Energy Performance Certificate (EPC) of at least D to E Sparse use of renewable energy Transportation or transportation infrastructure that has the same overall emissions output
	Negative environmental impact	Green buildings Energy efficiency Renewable energy Clean transport	No certification Residential EPC lower than F; greenfield construction No share of renewable energy Transportation or transportation infrastructure that increases the emissions output

Business model: Acquisition and upgrading of undervalued property

Green bond framework centres around Crown's main business activities

Introduction

Crown Holding Kft. was founded in 2015 as a Hungarian limited liability company (Kft.) active in the real estate sector in Hungary and Romania. Crown's investment strategy centres around acquiring undervalued assets and development opportunities to expand its income-generating portfolio through renovations and other property upgrades. The portfolio focuses on commercial properties, including shopping malls, office buildings, and hotels. As of today, the retail sector accounts for more than 70% of the portfolio's gross leasable area.

Regarding geographical distribution, around 75% of the total property value is located in Romania and 25% in Hungary. Crown's main tenant is ITHS, a subsidiary of T-Systems and Deutsche Telekom in Hungary.

Crown has a small cluster of important assets in Oradea, Romania. Properties are concentrated in the retail sector and Crown plans to acquire more properties and develop a hotel in Budapest, as well as expanding and upgrading existing properties in its portfolio.

The company plans to issue a green bond whose proceeds will be allocated to the partial or full financing/refinancing of new and/or existing eligible projects and assets with substantial environmental benefits. The look-back period for Crown's refinancing activities will be 24 months.

Overall sustainability strategy

Crown has not defined an overarching climate strategy to date. Sustainability targets are based on climate targets from the European Union's Green Deal and the Paris Agreement as well as on the UN's Sustainable Development Goals (SDGs).

The EU has regulated new building construction in line with its aims to reduce emissions by at least 55% by 2030 and become climate-neutral by 2050¹. Crown has stated that it seeks to contribute to this objective through its business activities.





The Framework can be interpreted as a major pillar of Crown's overall sustainability strategy with its focus on the company's main business activities. Consequently, the upcoming green bond activities will be a key driver of the company's expected contribution to environmental objectives.

¹ https://ec.europa.eu/clima/eu-action/european-green-deal_en

Issuance

Green Bond Principles: assessment of issuance

I. Use of proceeds

Green project category	Fulfilment	Leaf score
Green buildings	<p>Acquisition or construction of buildings that meet the following standards:</p> <ul style="list-style-type: none"> • BREEAM (ranking Excellent or above) • LEED (ranking Gold or above) • Ranked at least 10% better than the minimum Hungarian Energy Performance Certificate (EPC) for nearly zero energy buildings (NZEB) • CBS Residential or Commercial building criteria for the target country <p>Financing of major renovations leading to at least 30% reduction in overall energy consumption or achievement of required energy efficiency in line with the applicable national building code for newly built properties or a two-grade upgrade in the local energy performance label, if it results in an at least 20% improvement in emissions/energy performance/primary energy demand</p>	
Energy efficiency	<p>Investment in R&D, operation, distribution, and maintenance of equipment or technology to reduce energy consumption and increase energy savings, such as:</p> <ul style="list-style-type: none"> • Energy storage • Smart grids • Efficient lighting 	
Renewable energy	<p>Investments in or expenditures on the installation of solar power or heat pumps or stand-alone solar farms, and related infrastructure investments such as grid connections, electric substations, or networks</p>	
Clean transport	<p>Financing of or investment in supportive clean infrastructure services (charging stations for electric vehicles or bicycle storages)</p>	

Crown's Framework scores two leaves overall

The green project categories 'green buildings' and 'energy efficiency' have scored two green leaves as the criteria demonstrate a significant environmental contribution. Crown aims for a minimum energy efficiency of BB, which signifies a nearly zero-energy building (NZEB) and consumption of less energy than buildings constructed according to the regulatory threshold.

For the 'renewable energy' category, Crown also scores two green leaves led by its intention to invest in the installation of solar power or heat pumps or stand-alone solar farms in its real estate development projects. As solar panels and heat pumps do not contribute equally to the renewable energy category, we provide further information on the environmental impact risks of heat pumps in the risk section on page 8 of this opinion.

Crown scores two green leaves in the 'clean transport' category. The company plans to finance supportive clean infrastructure services, such as charging stations for electric vehicles or bicycle storages. We note that the environmental impact is driven by the national energy mix, which is dominated by non-renewable energy sources in the respective jurisdictions.

Crown plans to invest 67% of the proceeds in Hungary and 33% in Romania.

Crown scores two green leaves in each individual category.

Scope's assessment: Crown's aggregate score of two leaves indicates alignment with selected sector criteria. The use of proceeds provisions of the Framework comply with the GBP.

II. Process for project evaluation and selection

Crown will establish a Green Bond Committee (GBC) to monitor the sustainability finance processes of the company. The GBC will select the eligible projects and assets based on the use of proceeds categories defined in the Framework.

The GBC will meet at least annually and will oversee the preparation, coordination and governance of Crown's green strategy and sustainable investment decisions, as well as monitoring the development of the relevant green key performance indicators and targets.

The GBC comprises three members of Crown: the CEO, CFO and a technical director. The company will also use the option of including an external sustainability expert on a voluntary basis. The GBC will conduct its decision-making process by open voting and a simple majority of present members. The Chairman's vote will decide in case of a tie.

Crown has detailed the exclusion criteria for its eligible projects and assets under the green bond proceeds. These are activities that would contradict alignment with the net-zero economy and social goals. Hence, the following sectors are excluded from direct activities:

- Fossil-based energy generation
- Nuclear energy generation
- R&D in the weapons and defence industries
- Environmentally negative resource extraction operations
- Gambling
- Tobacco

Scope's assessment: Crown's project evaluation is aligned with the GBP. The inclusion of an external sustainability expert in the GBC as well as the detailed exclusion criteria lend credibility and ensure the quality of the process. In view of Crown's company size and capacities, we assess the composition and decision-making process of the GBC as adequate.

III. Management of proceeds

The proceeds from the green bond(s) will be managed by the GBC in a green register. The company will track the proceeds of each green bond separately in the green register. The green register will include detailed information on the selected projects, assets and green bonds such as project category, location, ISIN, maturity and amount outstanding. If a project or asset no longer qualifies as eligible during the life of the bond, it will be removed from the register and an amount equal to the allocated funds will be reinvested in an eligible asset.

Crown intends to allocate the proceeds as soon as possible, preferably within 24 months after issuance. Before allocation, the proceeds may be invested in short-term, liquid interest-bearing securities (e.g. Hungarian or other European sovereign bonds) or cash/cash equivalents, following Crown's sustainability policy. Crown will not allocate proceeds to temporary holdings if those assets have ESG-related controversies.

Crown will publish annual allocation and impact reports on project outcomes

Crown intends to use at least 90% of the green bond proceeds to finance new projects and, in the case of further issuances, a maximum 30% of the bond proceeds will be allocated to refinancing activities.

Scope's assessment: Crown's management of proceeds complies with the GBP.

IV. Reporting

Crown has committed to publishing an annual report on its website within 12 months of the green bond issuance and then annually until full allocation. The company will provide an annual allocation report containing information on the eligible projects and assets, a summary of the company's activities in the previous year linked to the green bond and will include examples of financed projects and assets.

The allocation of green bond proceeds will be provided at a project level, when no confidentiality agreements, competitive considerations, or a large number of underlying qualifying projects limit the amount of detail that can be published. In such cases, the information will be provided at an aggregated level, with an explanation of why project-level data was not given. The allocation report will include the following metrics:

Allocation report
Total amount of green bonds allocated
Remaining balance of unallocated bond proceeds
Geographical distribution of projects
Share of financing/refinancing

In accordance with the 2021 Harmonised Framework for Impact Reporting, Crown has committed to annually report the impact indicators listed in the table below, if available.

Category	Impact report
Green building	Type of certification and degree of certification for buildings (LEED, BREEAM, EPC)
	Estimated annual greenhouse gas emissions avoided (tCO ₂ e)
	Annual energy savings (MWh)
Energy efficiency	CO ₂ emissions reduced/avoided in tCO ₂
	Energy savings in kWh/m ²
	Amount of waste minimised, reused, or recycled in tons
Renewable energy	Expected annual renewable energy generation (MWh)
	Installed renewable energy capacity (MW)
Clean transport	Number of clean (e.g. electric) vehicle chargers deployed
	Electric vehicle charging station total power (MWh)
	Geographical coverage of the electric vehicle charging stations in km ²

Scope's assessment: The reporting proposed by Crown complies with the GBP.

Scope's opinion

Alignment with SDGs

The SDGs adopted by all UN member states in 2015 are a collection of 17 global targets comprising an agenda for achieving sustainable development by 2030. We deem the

Crown's Framework links to five relevant UN SDGs

following SDGs to be relevant for Crown²:

7. Affordable and clean energy: Ensure access to affordable, reliable, sustainable, and modern energy for all.

8. Decent work and economic growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all.

9. Industry, innovation and infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation.

11. Sustainable cities and communities: Make cities and human settlements inclusive, safe, resilient, and sustainable.

13. Climate action: Take urgent action to combat climate change and its impacts.

Appendix 3 lists the relevant indicators for measuring Crown's contribution to each SDG. The contribution to the SDGs can be quantified in post-issuance impact reporting.

Alignment with EU Taxonomy

The Taxonomy Regulation was published in the Official Journal of the European Union on 22 June 2020 and entered into force on 12 July 2020. It establishes a basis for the EU taxonomy by setting out four overarching conditions that a particular economic activity must meet to qualify as environmentally sustainable. The Taxonomy Regulation establishes six environmental objectives: climate change mitigation, climate change adaptation, the sustainable use and protection of water and marine resources, the transition to a circular economy, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems. A first delegated act on sustainable activities for climate change adaptation and mitigation was approved on 21 April 2021 and formally adopted on 4 June 2021 for scrutiny by co-legislators. A second delegated act for the remaining objectives will be published in 2022.

The project categories of Crown's Framework pertain to the following taxonomy sectors for which the first delegated act on climate change mitigation specifies technical screening criteria:

- Acquisition and ownership of buildings
- Construction of new buildings
- Renovation of existing buildings
- Installation, maintenance and repair of energy efficiency equipment
- Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings
- Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)
- Installation, maintenance and repair of renewable energy technologies

The technical screening criteria for the construction of new buildings states that the net primary energy demand of new construction must be at least 10% lower than the primary energy demand resulting from the relevant NZEB requirements. Crown's Framework sets the minimum requirement for outperforming the EPC of NZEBs at 10%. For the acquisition and ownership of buildings, the taxonomy's technical criteria require the

Crown's Framework voluntarily engages with EU Taxonomy Regulation draft

² In its Green Bond Framework, Crown refers only to SDGs 7 and 11 as material SDGs for the scope of its projects. In its SPOs, Scope maps the eligible GBP categories to those SDGs with a high relevance for the SDGs rather than those with a high degree of alignment or positive achievement.

buildings to have at least an EPC class A or to be within the top 15% of the operational EPC. Crown's Framework aligns with these criteria. For the renovation of existing buildings, the taxonomy's technical criteria require a reduction in primary energy demand by at least 30% or compliance with national and regional building regulations for 'major renovation'. Crown's Framework aligns with these criteria as it sets the same requirements for renovation of existing buildings. For the installation, maintenance and repair of energy equipment, the taxonomy's technical criteria require the installation of energy efficient light sources, as well as heating, ventilation, and air conditioning with highly efficient technologies. Crown's Framework aligns with these criteria for the installation of equipment or technology that helps reduce energy consumption such as energy storage, smart grids, and efficient lighting. For the installation, maintenance and repair of instruments and devices for measuring, regulation and controlling the energy performance of buildings, the taxonomy's technical criteria require the installation of smart thermostat systems, lighting control systems, and/or solar control systems in roofs. Crown's Framework aligns with these criteria. For the installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings), the taxonomy's technical criteria specify the installation, maintenance or repair of charging stations for electric vehicles. Crown's Framework complies with the technical screening criteria as the activity within clean transportation specifies the installation of charging stations for electric vehicles. Finally, for the installation, maintenance and repair of renewable energy technologies, the activity complies with the technical screening criteria as Crown's framework will finance solar power systems and heat pumps, contributing to the targets for renewable energy for heating and cooling in accordance with Directive (EU) 2018/2001.

The EU Taxonomy defines a 'do no significant harm' (DNSH) assessment. The DNSH assessment ensures that other environmental objectives are not harmed while a substantial contribution is made to one or more environmental objectives.

Crown has confirmed adherence to DNSH criteria

The DNSH specify a set of criteria for activities relating to the construction of new buildings, the renovation of existing buildings and the installation, maintenance, and repair of energy efficiency equipment. Crown has stated its intention to align with these criteria where the necessary data are available. Going forward, Crown plans to monitor the additional DNSH criteria including the performance of the state-of-the-art water appliances in its buildings. The EU taxonomy has not specified DNSH criteria for the remaining sectors.

An assessment of minimum social safeguards is not included in the analysis.

Impact of proceeds

Crown's impact: renewable energy

Share of renewable energy in Hungary and Romania

The EU is setting energy targets which aim to derive at least 32% of energy from renewables by 2023³. Hungary's Energy Strategy aims for approximately 20% of primary energy to be derived from renewables by 2023⁴; Romania aims to achieve 30.7% by 2023⁵. Figure 1 shows that obtaining a larger share of electricity from renewable sources remains a challenging objective for Hungary. While the share is increasing, at approximately 16.49%, it remains significantly below the European average of 19.6%. Romania plans to replace a significant share of electricity production based on carbon-

³ https://ec.europa.eu/clima/policies/strategies/2030_en

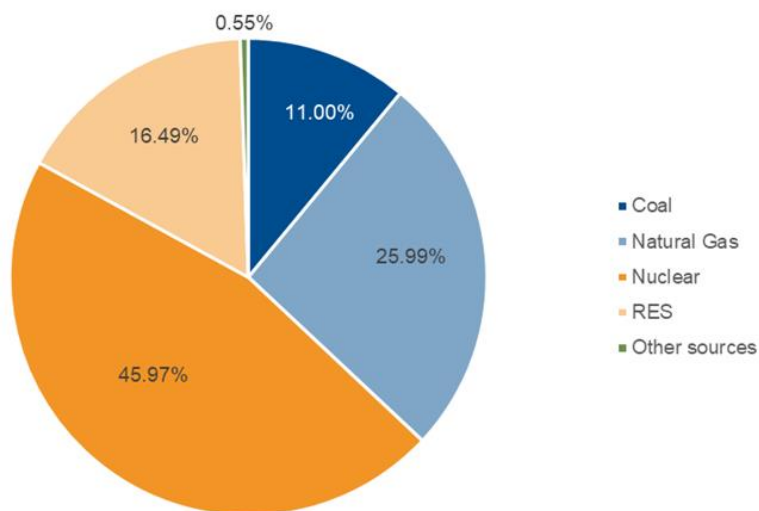
⁴ <https://www.iea.org/policies/5913-2030-energy-strategy-of-hungary>

⁵ https://ec.europa.eu/energy/sites/ener/files/documents/ro_final_necp_main_en.pdf

⁶ https://www.destatis.de/Europa/EN/Topic/Environment-energy/_node.html?sessionid=B84CAE3B50C87A095766BA4C2208304B.live722

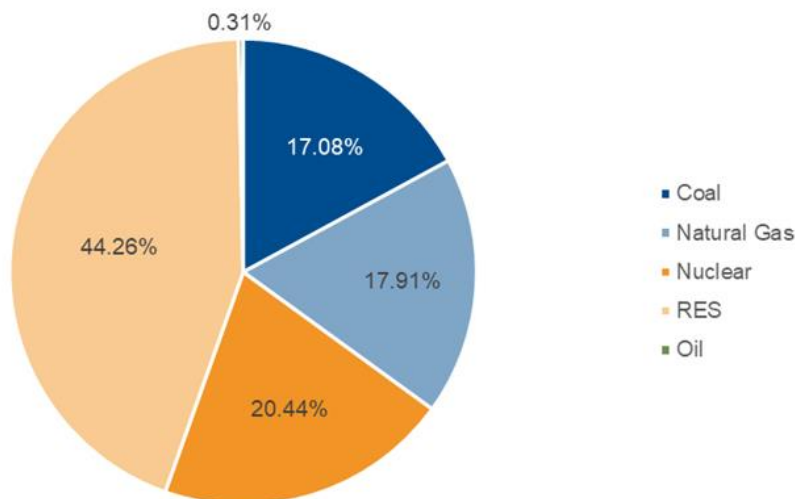
intensive sources with new gas, nuclear energy, and renewable energy sources as well as efficient low-carbon plants⁷. Figure 2 shows that in total, Romania's electricity mix already includes a share of 44.26% from renewables.

Figure 1: Net electricity generation structure in Hungary 2020



Source: <https://www.iea.org/countries/hungary>

Figure 2: Net electricity generation structure in Romania 2020



Source: <https://www.iea.org/countries/romania>

Crown's ambitions in the renewable energy sector are twofold: the company plans to finance stand-alone solar farms with this issuance as well as solar panels or heat pumps to directly supply real estate within renewable energy.

By financing solar farms or related infrastructure, Crown will contribute to increasing renewable energy generation (Figures 1 and 2). Furthermore, this goal will contribute to lower reliance on energy imports.

According to Hungary's Energy Strategy, 75% of Hungarian household energy consumption relates to heating⁸. Hot water production in households accounts for a

⁷ https://ec.europa.eu/energy/sites/ener/files/documents/ro_final_necp_main_en.pdf

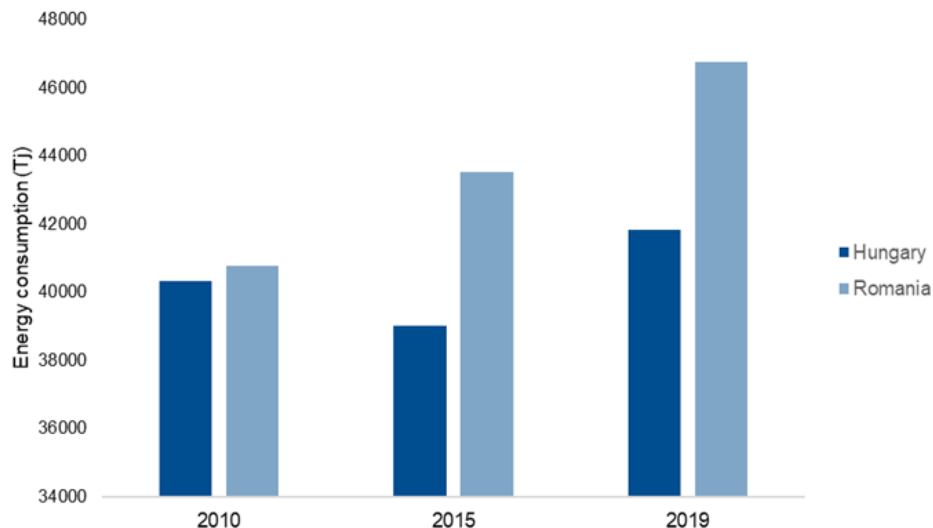
Crown focuses on national and EU level requirements for green buildings

further 10% of energy consumption. Currently, heating is largely supplied with natural gas⁹. Hungarian regulation has prescribed an average 25% share of renewable energy for new property construction after 2020 to reach the NZEB performance level¹⁰. In Romania, the government has increased its share of renewable energy from 10% to 30% to reach the NZEB performance level¹¹. To realise these objectives, the strategy strongly encourages the installation of decentralised heat pumps and solar power.

Crown's impact: green buildings

In addition to the taxonomy on sustainable finance, the EU has set targets to realise the Paris Agreement, including a reduction in greenhouse gas emissions of at least 40% by 2030¹². For Hungary, a 40% reduction means its gross emissions may not exceed an equivalent of 56.19bn tonnes of CO₂¹³. The National Building Energy Performance Strategy has found that buildings account for approximately 40% of primary energy use in Hungary¹⁴ and 28% in Romania¹⁵. Figure 3 shows Hungary and Romania's residential sector energy consumption levels. Hungary's average consumption level remained high in 2019 compared to 2015. Energy efficiency in buildings and renewable energy provisions are central to Hungary's discussions on how to reach energy targets by 2030. Romania has also planned to achieve higher energy efficiency by targeting the residential sector. Authorities have implemented a long-term renovation strategy, which involves the renovation of buildings in order to increase energy efficiency as well as the adoption of renewable energy source technologies, such as the installation of heat solar panels, photovoltaic panels and heat pumps¹⁶.

Figure 3: Residential energy consumption in Hungary and Romania



Source: <https://www.iea.org/countries>

In alignment with national environmental targets, Crown focuses on the energy consumption of its real estate after construction.

⁸ https://ec.europa.eu/energy/sites/ener/files/documents/hu_final_necp_main_en.pdf

⁹ https://ec.europa.eu/energy/sites/ener/files/documents/hungaryActionPlan2014_en.pdf

¹⁰ https://ec.europa.eu/energy/sites/ener/files/documents/hu_final_necp_main_en.pdf

¹¹ https://ec.europa.eu/energy/sites/ener/files/documents/ro_final_necp_main_en.pdf

¹² https://ec.europa.eu/clima/policies/strategies/2030_en

¹³ https://ec.europa.eu/energy/sites/ener/files/documents/hu_final_necp_main_en.pdf

¹⁴ https://ec.europa.eu/energy/sites/ener/files/documents/2014_article4_hungary_en%20translation.pdf

¹⁵ https://ec.europa.eu/energy/sites/ener/files/documents/ro_final_necp_main_en.pdf

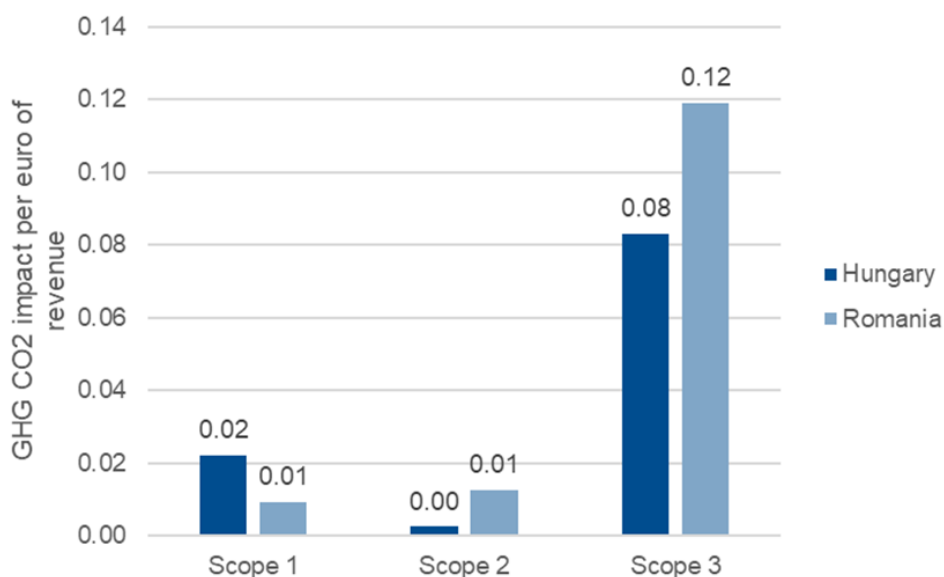
¹⁶ https://ec.europa.eu/energy/sites/ener/files/documents/ro_final_necp_main_en.pdf

Material upstream impact mitigation requires data on materials used for construction

Upstream impact

Scope's internal data on greenhouse gas emissions across countries and regions shed light on the upstream and downstream emissions arising from the construction of new buildings. Figure 4 illustrates the CO₂ impact per euro of revenue defined on scope 1, 2 and 3 emissions for Hungary and Romania. On average, the greenhouse gas impact of real estate construction is higher in Romania than in Hungary, i.e. the material mix used in construction is produced with higher emissions per EUR of revenue generated.

Figure 4: Upstream impact emissions from construction of new buildings in Hungary and Romania



Source: Internal model based on OECD input-output tables, Scope ESG Analysis

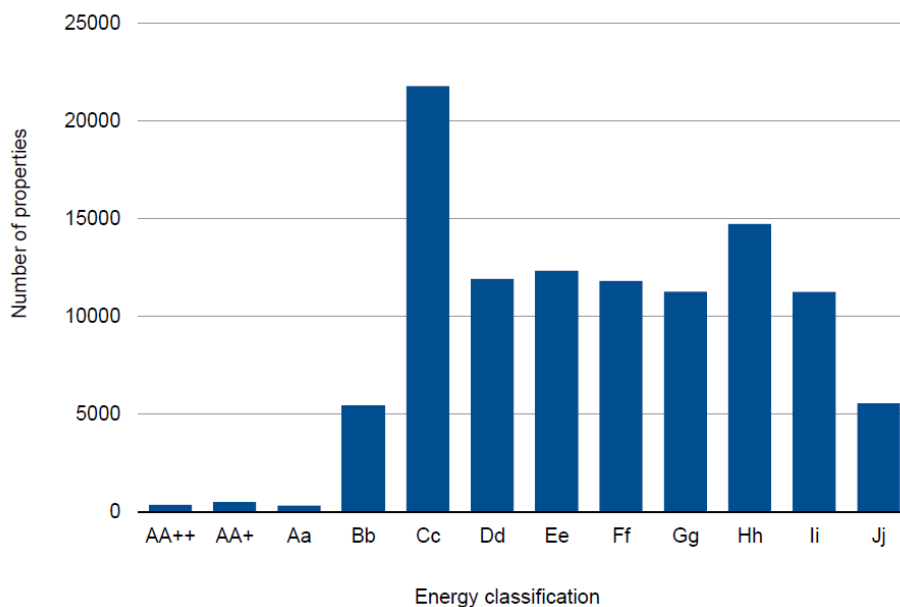
Crown's Framework does not refer to environmental standards in construction. Therefore, we have not assessed the risks related to the use of environmentally sustainable materials in the refurbishment or building of new units for the proceeds used in this Framework.

Downstream impact

By primarily focusing on energy efficiency, Crown aims to reduce its downstream emissions. This objective reflects the EU Taxonomy's technical screening criteria for the construction of new buildings and renovation of existing property, which also focus on downstream energy consumption.

Figure 5 depicts the energy efficiency of the current stock of commercial and residential buildings in Hungary. Crown plans to invest in projects with a minimum energy efficiency of BB. In 2021, only 6.2% of the building stock in Hungary was classified as BB or above.

Figure 5: Commercial and residential real estate in Hungary, 2021



Source: https://entan.e-epites.hu/?stat_megoszlas

Crown focuses on the criteria for green buildings, aiming to ensure that the buildings it acquires, constructs or refurbishes achieve at least 'Excellent' under the BREEAM certification standard, at least 'Gold' standard under LEED or perform at least 10% better than the minimum Hungarian EPC for NZEBs (category BB or above).

Currently 75% of the building stock in the EU is not energy efficient and only 1% of European buildings undergo renovation to increase energy efficiency each year¹⁷. The EU promotes the refurbishment of buildings as part of its Renovation Wave initiative. The action taken by Crown to renovate Hungarian and Romanian buildings will contribute to EU climate targets of reducing greenhouse gas emissions by 40% by 2030 compared to 1990 levels.

Crown's impact: energy efficiency

By 2030, the EU intends to improve energy efficiency among its member states by 32.5%¹⁸. Hungary's national targets for residential real estate closely follow EU recommendations. Crown aims to provide highly energy-efficient buildings in Hungary and Romania. Major renovations or refurbishment of existing properties undertaken by Crown will result in a minimum 30% reduction in overall energy consumption. Crown will also consider a two-grade upgrade in the local energy performance label if it results in an at least 20% improvement in emissions/energy performance/primary energy demand. Crown also plans to invest in R&D operation to improve energy efficiency in different technologies such as smart grids, energy storage, district heating and efficient lightning.

¹⁷ https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en

¹⁸ https://ec.europa.eu/clima/policies/strategies/2030_en

Crown's impact: clean transport

In Europe, transport is the largest source of carbon emissions at 27%, of which two-thirds come from automobiles and vans¹⁹. Focusing on clean transport in Hungary and Romania is therefore key to meeting EU emission targets. Crown plans to use a non-specified share of bond proceeds to finance supportive infrastructure such as charging stations for electric vehicles, bicycle storage or other investments supporting low-carbon transportation methods.

Risks

The Framework's eligible categories entail social and environmental risks. Crown considers the projects' environmental and social risks by including a risk management process, in the form of a relevant trade-off analysis. If a relevant environmental or social risk is identified, the green bond committee will provide a mitigation proposal for the selected project. The Framework provides no further details on the specific associated project risks while Romanian and Hungarian labour laws and environmental protection standards comply with the EU-wide minimum thresholds.

Associated project risks	Issuer's risk mitigation measures
Health and safety risks	In Hungary, the Act of 1993 concerning Occupational Safety and Health aims to ensure the health and safe working conditions of workers ²⁰ . In Romania, the OSH protects the health and safety of workers ²¹ . In addition, there are EU-level regulations and minimum standards regarding the health and safety of workers ²² .
Energy mix risk	Since increased energy may be required for heat pumps, Hungary's current electricity mix may pose a risk (Figure 1). The share of renewable energy is still low for EU standards, implying a high probability that heat pumps will remain powered by polluting sources of energy. Similarly, the energy consumed by electric vehicle charging stations is expected to be based on polluting sources and to be only gradually replaced by a higher share of renewables in electricity production.
High greenhouse gas impact of material production in the construction sector	According to our internal data on greenhouse gas production, almost 40% of the global environmental impact of the construction sector can be attributed to the materials sector (especially cement production). Crown does not provide information on the quality of materials used in construction.
Environmental risk	We have no Framework-specific information on environmental management systems or external environmental impact assessments.
Biodiversity risk	The EU has implemented a biodiversity strategy for 2030 ²³ , which also includes buildings. The strategy aims to counteract the loss of green spaces and ecosystems in urban areas by promoting the inclusion of environmentally friendly designs for buildings that have a connection to nature. We have no Framework-specific information on biodiversity management.

¹⁹ <https://www.transportenvironment.org/publications/co2-emissions-cars-facts>

²⁰ <https://www.ilo.org/dyn/natlex/docs/WEBTEXT/38155/64930/E93HUN01.htm>

²¹ https://www.ilo.org/dyn/legosh/en/f?p=14100:1100:0::NO::P1100_ISO_CODE3,P1100_YEAR:ROM,2013

²² <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31989L0391&from=EN>

²³ https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en



Second-Party Opinion

Crown Holding Kft. Green Bond Framework



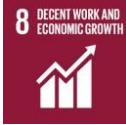









I. Appendix: Documents provided by Crown

Issuer documents	Document description
Market research on sector/regional standards	The 2021-2030 Integrated National Energy and Climate Plan- Romania
	National Energy and Climate Plan – Hungary
	Central Bank of Hungary document: Analysis of Housing Market
	Hungarian building regulation EPC
	Central Bank of Hungary document: Financing the Hungarian Renewable Energy sector
General information provided by the issuer	Company overview
	Energy efficiency performance of Crown's past project
Green bond-specific documentation provided by the issuer	Green Bond Framework
	Information on use of proceeds

II. Appendix: Green building certification schemes & regulation

	LEED	BREEAM	Hungarian EPC
Description	The LEED (Leadership in Energy and Environmental Design) certification process developed by the US Green Building Council is widely used globally, with high acceptance among users and international real estate markets.	BREEAM certification (Building Research Establishment Environmental Assessment Method) is a sustainability assessment method used to certify projects, infrastructure, and buildings. It sets benchmarks for the environmental characteristics of buildings through the design, specification, construction, and operational phases and can be applied to new buildings or refurbishment plans.	The Energy Performance of Buildings Directive in Hungary sets requirements in terms of energy generation and efficiency that buildings need to fulfil to qualify for public funding.
Certification levels	<ul style="list-style-type: none"> Platinum Gold Silver Certified 	<ul style="list-style-type: none"> Outstanding Excellent Very Good Good Pass 	Yes/no
Areas of assessment	<ul style="list-style-type: none"> Sustainable cities Water efficiency Energy & atmosphere Materials & resources Indoor environmental quality Innovation in design 	<ul style="list-style-type: none"> Energy Health and wellbeing Innovation Land use Materials Management Pollution Transport Waste Water 	<ul style="list-style-type: none"> Energy efficiency Renewable share Energy generation
Requirements	Prerequisites (independent of level of certification) and credits with associated points LEED has different rating systems that apply to specific sectors	Prerequisites depending on the levels of certification and credits with associated points	<ul style="list-style-type: none"> Energy efficiency of at least BB Minimum renewable share of 25% Thresholds for U-values of building elements
Accreditation	Internationally accepted, widespread and guaranteed high quality	Can be easily applied to local requirements; predominant environmental focus; standards less strict than LEED	Mandatory European regulation

III. Appendix: SDG alignment

GBP category	SDG alignment	Indicators to be evaluated
Green buildings		<ul style="list-style-type: none"> • Avoided kWh per square meter, or in percentage terms (%) below national building standards • Annual greenhouse gas emissions reduced or avoided, in tonnes of CO₂ equivalents.
Energy efficiency	   	<ul style="list-style-type: none"> • Annual energy reduced or avoided in MWh or GWh (electricity) and MWh or GWh (other energy savings) • Other indicators: annual gross greenhouse gas emissions from the project in tonnes of CO₂ equivalents.
Renewable energy	   	<ul style="list-style-type: none"> • Annual energy production on-site, in MWh or GWh • Quantity of installed solar power panels or heat pumps per square meter.
Clean transport	  	<ul style="list-style-type: none"> • Quantity of installed electric vehicle charging stations

IV. Appendix: EU Taxonomy: Alignment with Climate Change Mitigation Criteria

Issuer's Framework activity	Green buildings	
Taxonomy activity	7.1 Construction of new buildings	
	EU technical mitigation criteria	Comments on potential alignment
Mitigation criteria (metric and threshold)	<p>1. The primary energy demand, defining the energy performance of the building resulting from the construction, is at least 10% lower than the threshold set for the nearly zero-energy building (NZEB) requirements in national measures implementing Directive 2010/31/EU of the European Parliament and of the Council. The energy performance is certified using an as built Energy Performance Certificate (EPC).</p> <p>2. For buildings larger than 5000 m², upon completion, the building resulting from the construction undergoes testing for air-tightness and thermal integrity, and any deviation in the levels of performance set at the design stage or defects in the building envelope are disclosed to investors and clients. Where robust and traceable quality control processes are in place during the construction process this is acceptable as an alternative to thermal integrity testing.</p> <p>3. For buildings larger than 5000 m², the life-cycle Global Warming Potential (GWP) of the building resulting from the construction has been calculated for each stage in the life cycle and is disclosed to investors and clients on demand.</p>	Crown's Framework sets the minimum requirement of outperforming the EPC of NZEBs at 10%. Therefore, the projects financed by the issuance are aligned with the criteria for buildings below 5000m ²
	EU Taxonomy DNSH criteria	Comments on potential alignment
Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex	No climate risk or vulnerability assessment has been conducted because the climate-related hazards listed in Section II of Appendix A are not directly material to the activity financed under this Framework.
Sustainable use and protection of water and marine resources	<p>Where installed, except for installations in residential building units, the specified water use for the following water appliances are tested by product datasheets, a building certification or an existing product label in the Union, in accordance with the technical specifications laid down in Appendix E to this Annex:</p> <ul style="list-style-type: none"> (a) Wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min; (b) Showers have a maximum water flow of 8 litres/min; (c) WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3.5 litres; (d) Urinals use a maximum of 2 litres/bowl/hour. Flushing urinals have a maximum full flush volume of 1 litre. <p>To avoid impact from the construction site, the activity complies with the criteria set out in Appendix B to this Annex.</p>	Crown has expressed its efforts to comply with the DNSH criteria. In addition, Crown plans to monitor the performance of the state-of-the-art water appliances in its buildings.
Transition to a circular economy (circular economy)	<p>At least 70% (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material referred to in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol.</p> <p>Operators limit waste generation in processes related to construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.</p> <p>Building designs and construction techniques support circularity and in particular demonstrate, with reference to ISO 20887 or other standards for assessing the disassembly or adaptability of buildings, how they are designed to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.</p>	



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Pollution prevention and control	<p>Building components and materials used in the construction comply with the criteria set out in Appendix C to this Annex.</p> <p>Building components and materials used in the construction that may come into contact with occupiers emit less than 0,06 mg of formaldehyde per m³ of material or component upon testing in accordance with the conditions specified in Annex XVII to Regulation (EC) No 1907/2006 and less than 0,001 mg of other categories 1A and 1B carcinogenic volatile organic compounds per m³ of material or component, upon testing in accordance with CEN/EN 16516 or ISO 16000-3:2011 or other equivalent standardised test conditions and determination methods.</p> <p>Where the new construction is located on a potentially contaminated site (brownfield site), the site has been subject to an investigation for potential contaminants, for example using standard ISO 18400.</p> <p>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</p>	<p>Crown has expressed its efforts to comply with the DNSH criteria. Crown has not provided further details regarding the circular economy, pollution prevention and control or protection and restoration of biodiversity.</p>
Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p> <p>The new construction is not built on one of the following:</p> <ul style="list-style-type: none">(a) arable land and crop land with a moderate to high level of soil fertility and below ground biodiversity as referred to the EU LUCAS survey;(b) greenfield land of recognised high biodiversity value and land that serves as habitat of endangered species (flora and fauna) listed on the European Red List²⁹⁵ or the IUCN Red List;(c) land matching the definition of forest as set out in national law used in the national greenhouse gas inventory, or where not available, is in accordance with the FAO definition of forest.	

Issuer's Framework activity	Green buildings	
Taxonomy activity	7.2 Renovation of existing buildings	
	EU technical mitigation criteria	Comments on potential alignment
Mitigation criteria (metric and threshold)	<p>The building renovation complies with the applicable requirements for major renovations²⁴.</p> <p>Alternatively, it leads to a reduction of primary energy demand of at least 30%²⁵.</p>	Crown is aligned with the stated criteria as its Framework sets the same criteria for the renovation of existing buildings.
	EU Taxonomy DNSH criteria	Comments on potential alignment
Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex	No climate risk or vulnerability assessment has been conducted because the climate-related hazards listed in Section II of Appendix A are not directly material to the activity financed under this Framework.
Sustainable use and protection of water and marine resources	<p>Where installed, except for installations in residential building units, the specified water use for the following water appliances are tested by product datasheets, a building certification or an existing product label in the Union, in accordance with the technical specifications laid down in Appendix E to this Annex:</p> <ul style="list-style-type: none"> (a) Wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min; (b) Showers have a maximum water flow of 8 litres/min; (c) WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3.5 litres; (d) Urinals use a maximum of 2 litres/bowl/hour. Flushing urinals have a maximum full flush volume of 1 litre. 	Crown has expressed its efforts to comply with the DNSH criteria. In addition, Crown plans to monitor the performance of the state-of-the-art water appliances in its buildings.
Transition to a circular economy (circular economy)	<p>At least 70% (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material referred to in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol. Operators limit waste generation in processes related to construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.</p> <p>Building designs and construction techniques support circularity and in particular demonstrate, with reference to ISO 20887 or other standards for assessing the disassembly or adaptability of buildings, how they are designed to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.</p>	Crown has expressed its efforts to comply with the DNSH criteria. Crown has not provided further details on the circular economy or pollution prevention and control.

²⁴ As set out in the applicable national and regional building regulations for 'major renovation' implementing Directive 2010/31/EU. The energy performance of the building or the renovated part that is upgraded must meet cost-optimal minimum energy performance requirements in accordance with the respective directive.

²⁵ The initial primary energy demand and the estimated improvement is based on a detailed building survey, an energy audit conducted by an accredited independent expert or any other transparent and proportionate method and validated with an Energy Performance Certificate. The 30% improvement results from an actual reduction in primary energy demand (where the reductions in net primary energy demand through renewable energy sources are not taken into account) and can be achieved via a succession of measures within a maximum of three years



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Pollution prevention and control	<p>Building components and materials used in the construction comply with the criteria set out in Appendix C to this Annex.</p> <p>Building components and materials used in the building renovation that may come into contact with occupiers emit less than 0,06 mg of formaldehyde per m³ of material or component upon testing in accordance with the conditions specified in Annex XVII to Regulation (EC) No 1907/2006 and less than 0,001 mg of other categories 1A and 1B carcinogenic volatile organic compounds per m³ of material or component, upon testing in accordance with CEN/EN 16516 or ISO 16000-3:2011 or other equivalent standardised test conditions and determination methods.</p> <p>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</p>	
Protection and restoration of biodiversity and ecosystems	N/A	

Issuer's Framework activity	Green buildings	
Taxonomy activity	7.7 Acquisition and ownership of buildings	
	EU technical mitigation criteria	Comments on potential alignment
Mitigation criteria (metric and threshold)	<p>1. For buildings built before 31 December 2020, the building has at least an Energy Performance Certificate (EPC) class A. As an alternative, the building is within the top 15% of the national or regional building stock expressed as operational Primary Energy Demand (PED) and demonstrated by adequate evidence, which at least compares the performance of the relevant asset to the performance of the national or regional stock built before 31 December 2020 and at least distinguishes between residential and non-residential buildings.</p> <p>2. For buildings built after 31 December 2020, the building meets the criteria specified in Section 7.1 of this Annex that are relevant at the time of the acquisition.</p> <p>3. Where the building is a large non-residential building (with an effective rated output for heating systems, systems for combined space heating and ventilation, air-conditioning systems or systems for combined air-conditioning and ventilation of over 290 kW) it is efficiently operated through energy performance monitoring and assessment.</p>	<p>Crown's Framework is aligned with the stated criteria. Crown sets the requirements for the acquisition of buildings at BREEAM (Excellent or above), LEED (Gold or above) or at least 10% better than the minimum criteria for NZEB.</p>
	EU Taxonomy DNSH criteria	Comments on potential alignment
Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex	No climate risk or vulnerability assessment has been conducted because the climate-related hazards listed in Section II of Appendix A are not directly material to the activity financed under this framework.
Sustainable use and protection of water and marine resources	N/A	
Transition to a circular economy (circular economy)	N/A	
Pollution prevention and control	N/A	
Protection and restoration of biodiversity and ecosystems	N/A	

Issuer's Framework activity	Energy efficiency	
Taxonomy activity	7.3 Installation, maintenance and repair of energy efficiency equipment	
	EU technical mitigation criteria	Comments on potential alignment
Mitigation criteria (metric and threshold)	<p>The activity consists in one of the following individual measures provided that they comply with minimum requirements set for individual components and systems in the applicable national measures implementing Directive 2010/31/EU and, where applicable, are rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation:</p> <ul style="list-style-type: none"> (a) addition of insulation to existing envelope components, such as external walls (including green walls), roofs (including green roofs), lofts, basements and ground floors (including measures to ensure air-tightness, measures to reduce the effects of thermal bridges and scaffolding) and products for the application of the insulation to the building envelope (including mechanical fixings and adhesive); (b) replacement of existing windows with new energy efficient windows; (c) replacement of existing external doors with new energy efficient doors; (d) installation and replacement of energy efficient light sources; (e) installation, replacement, maintenance and repair of heating, ventilation and air-conditioning (HVAC) and water heating systems, including equipment related to district heating services, with highly efficient technologies; (f) installation of low water and energy using kitchen and sanitary water fittings which comply with technical specifications set out in Appendix E to this Annex and, in case of shower solutions, mixer showers, shower outlets and taps, have a max water flow of 6 L/min or less attested by an existing label in the Union market. 	Crown's Framework is aligned with these criteria.
	EU Taxonomy DNSH criteria	Comments on potential alignment
Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.	No climate risk or vulnerability assessment has been conducted because the climate-related hazards listed in Section II of Appendix A are not directly material to the activity financed under this Framework.
Sustainable use and protection of water and marine resources	N/A	
Transition to a circular economy (circular economy)	N/A	
Pollution prevention and control	<p>Building components and materials comply with the criteria set out in Appendix C to this Annex.</p> <p>In case of addition of thermal insulation to an existing building envelope, a building survey is carried out in accordance with national law by a competent specialist with training in asbestos surveying. Any stripping of lagging that contains or is likely to contain asbestos, breaking, or mechanical drilling or screwing or removal of insulation board, tiles and other asbestos containing materials is carried out by appropriately trained personnel, with health monitoring before, during and after the works, in accordance with national law.</p>	Crown has expressed its efforts to comply with the DNSH criteria. Crown has not provided further details on pollution prevention and control.
Protection and restoration of biodiversity and ecosystems	N/A	

Issuer's Framework activity	Energy efficiency	
Taxonomy activity	7.5 Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	
	EU technical mitigation criteria	Comments on potential alignment
Mitigation criteria (metric and threshold)	<p>The activity consists in one of the following individual measures:</p> <ul style="list-style-type: none"> (a) installation, maintenance and repair of zoned thermostats, smart thermostat systems and sensing equipment, including. motion and day light control; (b) installation, maintenance and repair of building automation and control systems, building energy management systems (BEMS), lighting control systems and energy management systems (EMS); (c) installation, maintenance and repair of smart meters for gas, heat, cool and electricity; (d) installation, maintenance and repair of façade and roofing elements with a solar shading or solar control function, including those that support the growing of vegetation. 	<p>Crown's Framework is aligned with the mitigation criteria as the activity within energy efficiency consists of investing in equipment or technology that reduce energy consumption and increase energy savings such as energy storage, smart grids, and efficient lighting.</p>
	EU Taxonomy DNSH criteria	Comments on potential alignment
Climate change adaptation	<p>The activity complies with the criteria set out in Appendix A to this Annex.</p>	<p>No climate risk or vulnerability assessment has been conducted because the climate-related hazards listed in Section II of Appendix A are not directly material to the activity financed under this Framework.</p>
Sustainable use and protection of water and marine resources	N/A	
Transition to a circular economy (circular economy)	N/A	
Pollution prevention and control	N/A	
Protection and restoration of biodiversity and ecosystems	N/A	

Issuer's Framework activity	Renewable energy	
Taxonomy activity	7.6 Installation, maintenance and repair of renewable energy technologies	
	EU technical mitigation criteria	Comments on potential alignment
Mitigation criteria (metric and threshold)	<p>The activity consists in one of the following individual measures, if installed on-site as technical building systems:</p> <ul style="list-style-type: none"> (a) installation, maintenance and repair of solar photovoltaic systems and the ancillary technical equipment; (b) installation, maintenance and repair of solar hot water panels and the ancillary technical equipment; (c) installation, maintenance, repair and upgrade of heat pumps contributing to the targets for renewable energy in heat and cool in accordance with Directive (EU) 2018/2001 and the ancillary technical equipment; (d) installation, maintenance and repair of wind turbines and the ancillary technical equipment; (e) installation, maintenance and repair of solar transpired collectors and the ancillary technical equipment; (f) installation, maintenance and repair of thermal or electric energy storage units and the ancillary technical equipment; (g) installation, maintenance and repair of high efficiency micro CHP (combined heat and power) plant; (h) installation, maintenance and repair of heat exchanger/recovery systems. 	<p>Crown's Framework is aligned with the mitigation criteria as the activity within renewable energies consists of the installation, maintenance and repair of solar photovoltaic systems and the ancillary technical equipment, as well as heat pumps contributing to the targets for renewable energy for heating and cooling in accordance with Directive (EU) 2018/2021 and the ancillary technical equipment.</p>
	EU Taxonomy DNSH criteria	Comments on potential alignment
Climate change adaptation	<p>The activity complies with the criteria set out in Appendix A to this Annex.</p>	<p>No climate risk or vulnerability assessment has been conducted because the climate-related hazards listed in Section II of Appendix A are not directly material to the activity financed under this Framework.</p>
Sustainable use and protection of water and marine resources	<p>N/A</p>	
Transition to a circular economy (circular economy)	<p>N/A</p>	
Pollution prevention and control	<p>N/A</p>	
Protection and restoration of biodiversity and ecosystems	<p>N/A</p>	



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Issuer's Framework activity	Clean transport	
Taxonomy activity	7.4 Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	
	EU technical mitigation criteria	Comments on potential alignment
Mitigation criteria (metric and threshold)	Installation, maintenance or repair of charging stations for electric vehicles	Crown's Framework is aligned with the mitigation criteria as the activity within clean transportation specifies the installation of charging stations for electric vehicles.
	EU Taxonomy DNSH criteria	Comments on potential alignment
Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.	No climate risk or vulnerability assessment has been conducted because the climate-related hazards listed in Section II of Appendix A are not directly material to the activity financed under this Framework.
Sustainable use and protection of water and marine resources	N/A	
Transition to a circular economy (circular economy)	N/A	
Pollution prevention and control	N/A	
Protection and restoration of biodiversity and ecosystems	N/A	



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