IMPACT REPORT

MEDIOBANCA

GREEN, SOCIAL & SUSTAINABILITY BOND FRAMEWORK

Bologna, 05/08/2025

Contents

1. EMISSIONS METHODOLOGY

This section provides an overview of CRIF's methodology to estimate avoided CO_2 emissions of Mediobanca's Green Buildings Loans Portfolio (following 'Portfolio').

The assessment relies on four pillars:

1. Calculation of buildings' related greenhouse gas emissions;

2. Identification of a national benchmark;

3. Calculation of portfolio positive impact;

4. Reporting measures.

1.1.   Calculation of buildings' greenhouse gas emissions

The calculation of GHG emissions of Mediobanca's Green Buildings is performed using three different options:

1. The CO_2 emissions are available through a valid Energy Performance Certificate (following 'EPC'). In Italy, EPCs provide this information in a standard format. Estimated CO_2 emissions result from an automatic computation by professional software in line with existing national legislation on energy efficiency and the characteristics of the assets as provided by the real estate valuer. This approach is implemented for the 92,8% of the Portfolio.

2. The CO_2 emissions are estimated by Mediobanca. This approach is implemented for the 6,8% of the Portfolio.

3. The CO_2 emissions are estimated through an algorithm owned by CRIF implementing the property's physical characteristics (e.g., construction year, building type and surface, geo-localisation, etc.). This approach is implemented for the 0,4% of the Portfolio for which the CO_2 emissions are missing.

1.2.   Identification of a National benchmark

To address the problems related to the lack of building energy efficiency data through regional energy cadasters, the Ministerial Decree on 26/06/2015 introduced a new national database, SIAPE, managed by ENEA. The SIAPE database represents the most important available data pool on the energy efficiency of Italian real estate stock, and CRIF has identified it as the data source for national benchmarks. The reference value for emissions of residential properties in Italy for year 2023 is 38,0 kg CO_2 per square meter per year. However, as shown in the left graph in figure 1, it varies according to the climatic zone. The reference value for the primary energy demand for residential properties at national level is 189,0 kWh per square meter per year. This parameter is strongly related on the climatic zone, higher for the "F" and lower to the "A" and "B".
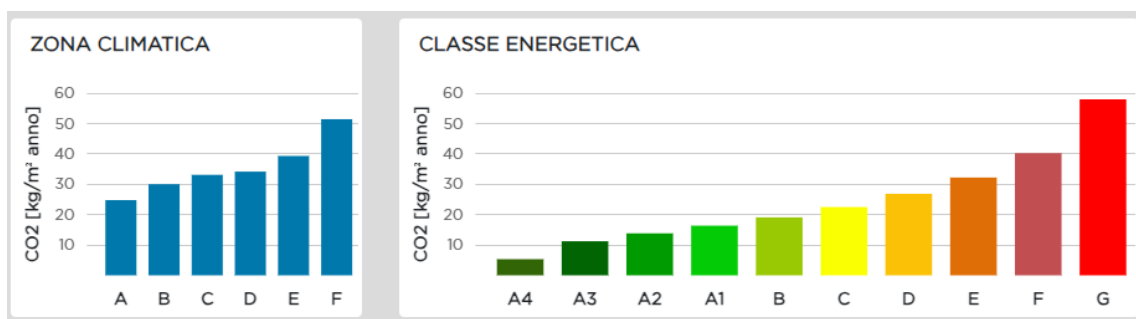

Figure 1 - Residential Buildings - Average of emissions for climate zone (zona climatica) and EPC label (classe energetica) from SIAPE portal
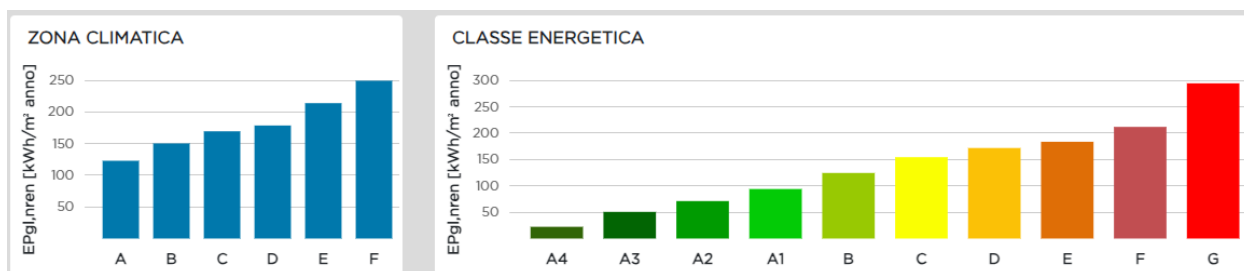

Figure 2 - Residential Buildings - Average of primary energy demands for climate zone (zona climatica) and EPC label (classe energetica) from SIAPE portal

The reference values for emissions and primary energy demand for non-residential properties in Italy are, respectively, 63,2 kg CO_2 per square meter per year and 299,7 kWh per square meter per year.

1.3. Avoided emissions

Intending to measure Mediobanca's avoided emissions for properties underlying green mortgages CRIF's methodology is in line with PCAF[1] standard. Accordingly, the following steps are followed:

1.3.1. Filtering data

In order to examine records with the best data quality we applied the following filter:

- The initial appraisal amount has to be higher than 10,000 euros;

- Loans without positive outstanding debt are not evaluated.

Only the residential or commercial properties have been evaluated because the EPC is related to these properties and not to the garage or basement.

1.3.2. Attribution of emissions

The first step consists of the identification of a proper attribution factor: Loan-to-value (LTV).

Thus, the attribution is equal to the ratio of the outstanding amount at the time of GHG accounting (t) to the property value at loan origination[2] (t_0):

$$Attribution\ factor_t = \frac{Outstanding\ amount_t}{Property\ Value_{t_0}}$$

The attribution factor is constantly updated by changing the numerator following the mortgage repayment plan. The denominator remains constant over time, and it represents the whole value of properties (e.g. the sum of dwelling and other areas belonging to it, i.e. garage values). A cap of 1 is applied to the attribution factor.[3]

---

[1] Available at: *https://carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf*, pages. 77-88.

[2] When the property value at origination is not feasible to obtain, financial institutions shall use the latest property value available and fix this value for the following years of GHG accounting (i.e., the denominator remains constant). The scope of this methodology is on-balance mortgages; off-balance are not included.

[3] The bank emission saving cannot be greater than the real one.

1.3.3. Financed emissions

The emissions of buildings are calculated as the product of a building's energy consumption and computed attribution factor as in the previous section:

$$Financed\ emissions = \sum_i^t Attribution\ factor_{i,t} \times Estimated\ emissions_{i,t}$$

Where, i = property in Mediobanca's portfolio at time t.

Estimated emissions' calculation relies on **Section 1.1**. In the applied methodology, no distinction is made between private or corporate mortgages. Concerning energy and emissions data, higher limits have been applied to limit errors in data. The limits for emissions are 80 kg per square meter per year, which is the average emissions of buildings in the worst energy class. Instead, the upper limit for energy consumption is 300 kWh, the average of buildings with poor efficiency.

1.3.4. Avoided emissions for green buildings

Starting from SIAPE's data, the portfolio's positive impact in terms of emission is calculated.

$$Avoided\ emissions = \left[\left(\sum_i^t Attribution\ factor_{i,t} \times Benchmark\ emissions_{i,t} \right) - Financed\ emission_i \right] \times Building\ surface_i$$

The formula expresses the total amount of savings in kg of CO_2 for the guarantees under investigation, considering the attribution factor and a market benchmark. A cap of 2,000 and a floor of 20 square meters is applied to the building surface.

1.4. Energy savings

Energy savings are determined as the difference between the benchmark and the non-renewable energy performance index ($EPgl_{nren}$) of the building multiplied by the building surface and the attribution factor described in chapter 1.3.2:

$$Energy\ savings\ = \sum_i^n [(EPgl_{nren})_{benchmark} - (EPgl_{nren})_i] \times Building\ surface_i \times Attribution\ factor_i$$

1.5. Positive Carbon Impact

The Positive Carbon Impact (PCI) is calculated as the ratio between tonnes of CO_2 emissions avoided and the total outstanding amount expressed in millions of euros, the PCI therefore measures the positive impact in tonnes per million euros:

$$PCI\ = \sum_i^n Avoided\ emissions_i\ /\ \sum_i^n Outstanding\ amount_i$$

1.6. Reporting measures

Once the emissions of every building are known or estimated (section 1.1), an analysis of all the mortgage guarantees shows portfolio performance, and the difference with the national benchmark is executed (section 1.2). Finally, the financial impact of each mortgages is calculated (see section 1.3 - 1.5), and the following impact indicators show the portfolio features in terms of energy efficiency:

- **Avoided emissions:** it measures avoided emissions by considering the attribution factor and a benchmark. It is expressed in tons per year.
- **Positive Carbon Impact:** It measures the positive impact per million euros invested in tons per year.
- **Energy-saving:** Portfolio energy savings are calculated starting from the EPC and the national benchmark information. The measure is obtained by considering the attribution factor and the benchmark.

Allocation (mln €)	Avoided emissions (tons)	Positive Carbon Impact (tons per 1 mln €)	Square meters	Energy saving (MWh)
1,000 €	20,000	20.0	1,200,000	100,000

Table 1 - Example of portfolio impact

2. POSITIVE CARBON IMPACT ON MEDIOBANCA'S PORTFOLIO

The positive carbon impact on Mediobanca's portfolio, calculated according with the methodology described above, is shown in table 2, 3 and 4 and represent the eligible portfolio included in the bond.

Allocated Loan Portfolio mln €	Avoided Emissions tons	PCI tons per mln €	Energy Saving MWh	Square meters
1.157,9	11.395,7	9,8	58.370,1	854.072,7

Table 2 - Positive Carbon Impact of Mediobanca's eligible loans

Region	Allocation mln €	Avoided Emissions tons	PCI tons per mln €	Energy Saving MWh	Square meters
LOMBARDIA	484,4	4.288,0	8,9	22.484,9	307.371,0
LAZIO	200,1	1.620,0	8,1	8.197,7	120.397,3
PIEMONTE	86,4	1.178,2	13,6	5.380,0	79.822,0
CAMPANIA	71,0	823,7	11,6	4.133,3	67.354,2
VENETO	66,0	918,6	13,9	4.749,5	60.603,3
PUGLIA	47,2	503,8	10,7	2.815,3	41.929,0
SICILIA	41,1	436,8	10,6	2.188,3	42.789,6
SARDEGNA	40,5	375,8	9,3	2.004,4	37.271,1
EMILIA ROMAGNA	36,8	359,3	9,8	1.915,4	26.857,5
TOSCANA	30,3	281,3	9,3	1.429,0	23.043,5
LIGURIA	14,7	118,3	8,1	548,3	9.248,2
ABRUZZO	10,9	123,4	11,4	644,2	10.071,5
CALABRIA	7,7	122,4	15,8	613,3	9.827,6
MARCHE	5,1	57,1	11,1	293,5	5.336,9
TRENTINO ALTO ADIGE	5,1	53,4	10,4	275,5	3.180,6
FRIULI VENEZIA GIULIA	4,7	55,4	11,7	277,7	3.704,8
UMBRIA	3,1	45,7	14,8	249,1	3.063,9
BASILICATA	1,6	24,6	15,1	121,9	1.584,7
VALLE D AOSTA	1,1	7,2	6,6	35,3	442,4
MOLISE	0,2	2,7	16,3	13,5	173,8
Grand Total	**1.157,9**	**11.395,7**	**9,8**	**58.370,1**	**854.072,7**

Table 3 - Positive Carbon Impact of Mediobanca's eligible loans by building's region

Criteria	Allocation mln €	Avoided Emissions tons	PCI tons per mln €	Energy Saving MWh	Square meters
EPC label in A, B, C	1.011,9	9.840,9	9,7	50.501,1	762.201,9
Building built after 2020	146,0	1.554,8	10,7	7.869,0	91.870,9
Grand Total	**1.157,9**	**11.395,7**	**9,8**	**58.370,1**	**854.072,7**

Table 4 - Positive Carbon Impact of Mediobanca's eligible loans by eligibility criteria

CRIF is a global company specializing in credit bureau and business information, outsourcing and processing services, and credit solutions. Established in 1988 in Bologna (Italy), CRIF has an international presence, operating over four continents (Europe, America, Africa and Asia).

Via M. Fantin, 1-3 | 40131 Bologna, Italy

Tel. +39 051 4176111

Fax +39 051 4176010

Email info@crif.com

www.crif.com