BANK EMISSIONS CALCULATIONS

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FOREWORD

For over five years, Carbone 4 has been developing a methodology which assesses the transition risk: The *Carbon Impact Analytics* (CIA) methodology. This methodology calculates greenhouse gas (GHG) emissions induced by an activity. However, the emissions associated with the banking sector were so far not calculated by this method : the CIA method concentrated on high-stakes sectors – sectors whose activities have a high impact on emissions – and the banking sector was considered as a low-stakes sector, which implied only scopes 1&2 emissions were assessed.

But for the last four years, the finance sector has been getting a lot of attention due to the major role it plays in global warming and the energy transition. Whether it was at the COP21 or through the TCFD (Task Force on Climate-related Financial Disclosures), players in the finance world are becoming much more aware of their exposure to these risks. Thus, it has become a necessity to develop a methodology that calculates emissions associated with banking activities. Even if the banks' main emission sources were known before this acknowledgment by the financial sector, the lack of data in this field did not allow us to quantify the banks' emissions with a high degree of accuracy.

As a first step, the method developed below is only being applied to **private banks**. It will be necessary to carry out further testing to see whether it is possible to use the methodology for the entire financial sector, insurers or international financial institutions for example.

REMINDER OF THE METHODOLOGICAL PRINCIPLES OF CARBON IMPACT ANALYTICS

Carbon Impact Analytics (CIA) was developed to analyse the carbon impact of listed portfolios and to assess their contribution to the energy and climate transition. We will summarise here the main methodological bases of CIA.

- **A bottom-up approach**: each asset is analysed individually before the results are consolidated at the portfolio level. Therefore, Carbon Impact Analytics provides results both at the portfolio and at the company level.

  This methodological choice allows a comparison of the assets' carbon performance within a given sector, unlike statistical methodologies which calculate the scope 3 carbon footprint from sector ratios.

- **Particular attention is given to sectors with high stakes within the energy and climate transition**: the risks and challenges of the transition to low carbon vary from one economic sector to another, both in terms of the levers for reducing emissions and of innovations. The majority of the GHG emissions comes from certain sectors and thus the efforts of the energy transition must be focused on these specific ones.

  That is why the *Carbon Impact Analytics* methodology distinguishes between high-stakes sectors and low-stakes sectors; it carries out a detailed analysis of the high stakes sectors in order to concentrate the analytical effort on the assets that have a significant impact on the carbon performance of the portfolio. This detailed analysis is based on a large amount of data, which is specific to the business and its sector. The data is available in the various reports published by the company, and can consist in the production

volumes (metric tons of steel, MWh by source, etc.), production sites or points of sale, energy efficiency of the processes, supply sources, etc.

Finance constitutes as a fourth sub-group within the high-stakes sectors. Thus, the high-stakes sectors are detailed below:

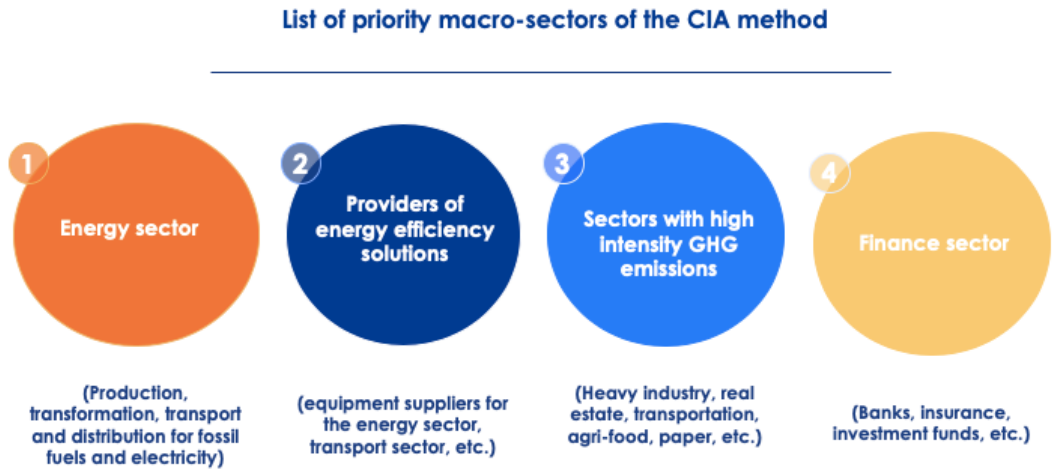


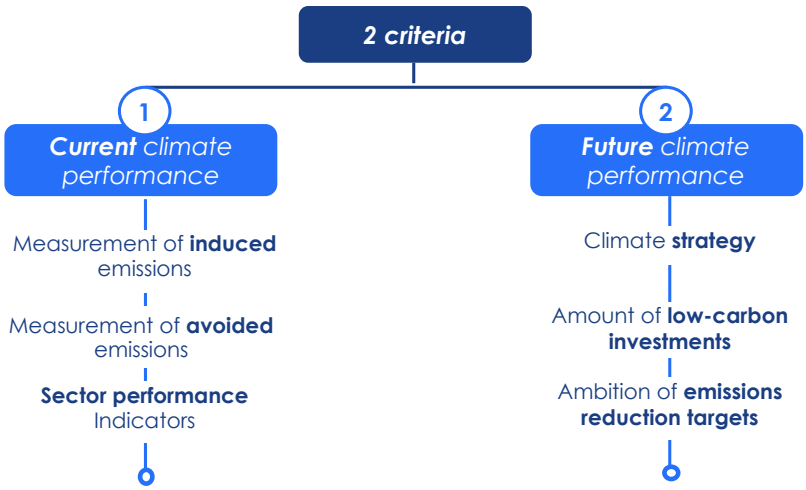
Figure 1: List of the CIA Method's Priority Macro-sectors.

- **An Exhaustive measurement of the carbon footprint**: with more than ten years of experience in carbon analysis, Carbone 4 is well acquainted with the main sources of GHG emissions. Indirect emissions (categorized as scope 3) are predominant within most sectors' activities. In order to obtain a true picture of the risks and opportunities associated with the climate, it is therefore essential to account for these emissions. Accordingly, CIA takes these emissions into account for high stakes sectors.

- **A measurement of the contribution to the energy and climate transition**: beyond the carbon footprint, it is necessary to consider a company's ability to contribute to the energy and climate transition: does it reduce its emissions? Does it enable its clients to reduce their emissions? etc. It is with this aim in mind that the CIA measures the "emissions' savings".

- **Taking into account the companies' strategies**: while saved and induced emissions provide a reasonable picture of a company's current performance, it is also important to have a forward-looking view of it. Thus, CIA measures the way energy and climate challenges are incorporated into the company's strategy, by using a qualitative indicator.

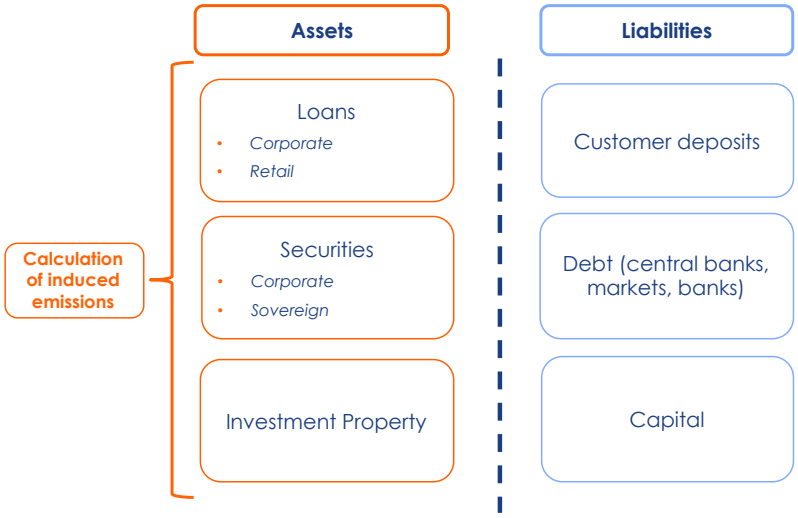
- **An overall "climate performance" score**: the overall score, which ranges from A to E, is based on two criteria: the company's current climate performance (a quantitative indicator that takes into account the induced and avoided emissions for scopes 1, 2 and 3), as well as the company's future climate performance (the qualitative indicator that takes into account the company's climate strategy, the direction of its investments and the concrete reduction targets that it sets).



THE EMISSIONS CALCULATION METHOD

The calculation for a bank's induced emissions involves taking into account the activities that it finances: this is referred to as the emissions "financed" by the bank. Indeed, a bank is defined as a sum of commitments in the form of loans or investments. This is reflected in the balance sheet of private banks: on the assets side, there are three main types of commitments:

- A loan portfolio
- An investment portfolio
- Investment property (fixed assets).



Note: interbank transactions were excluded from the analysis in order to mitigate the problem of double counting when aggregating the data in a portfolio.

The calculation of emissions financed by banks examines each of these three types of commitment:

- For the **loan portfolio**, the emissions calculation depends on the borrowers:
  - For **loans to private individuals**, long-term (mortgage) and short-term credits need to be distinguished.
    - For **long-term loans**, emissions are calculated from average building purchase prices by geographical area and from the buildings' average energy consumption. The analysis takes into account the emissions associated with the building's construction (upstream scope 3) and the use of the building (downstream scope 3). Note: long-term lending is assumed to concern only residential property.
    - **Short-term lending** is divided between automotive and consumer credit. For **automotive credit**, the emissions are calculated from the average vehicle carbon intensity by geographical area, average annual mileage and average vehicle purchase price. The analysis separates ICE vehicles from electric vehicles. As for **consumer credit**, the emissions are calculated from the carbon intensity of the GDP by geographical area.

    Note: the breakdown of lending into property, automotive and consumer segments is sometimes given in the banks' published reports. In the absence of such information, a default breakdown, taken from the 29th annual report of the *Observatoire des crédits aux ménages* (household lending observatory) is used.

  - For **business loans**, the sectoral breakdown of loans granted (breakdown based on the GICS classification – Global Industry Classification Standard – and then adapted to banks' Pillar III reporting) makes it possible to apply sectoral ratios from the CIA database.

- For **lending to public sectors**, the geographical breakdown of customers allows us to calculate the induced emissions through the use of GHG emissions ratios per million euros of public debt. Note that weighted averages by geographical area are used to adapt to the banking institutions that report less precisely.

- For investment **portfolios**, we distinguish between investments in companies and sovereign bonds:

  - For **investments in companies**, the sectoral breakdown of investments, based on the Global Industry Classification Standard (GICS) and then adapted to bank's Pillar III reporting, allows the sector ratios from the CIA database to be applied. Note: if the bank does not provide an investments breakdown by sector in its reports, a default breakdown based on the sectoral allocations of listed companies by geographical area is used.

  - For **sovereign bonds**, the geographical breakdown allows us to calculate the induced emissions by using the GHG emissions ratios per million euros of public debt. Note that weighted averages by geographical area are used to adapt to the banking institutions that report less precisely.

- For **property assets**, the calculation depends on the assets' geographical distribution, but also on the analysed bank's degree of transparency: if the bank does not specify the surface area managed by country, an average of the buildings' purchase price by geographical area allows us to estimate this area. The analysis also takes into account the building' average energy consumption. Lastly, as with property loans, the calculation takes into account both the emissions associated with the construction of the building (scope 3 upstream) and the use of the building (scope 3 downstream). Note: property investments are all assumed to be in commercial property (offices, etc.)

CLIMATE STRATEGY EVALUATION

The bank's climate strategy evaluation depends on four sub-criteria:

	1 point	2 points	3 points	4 points
Reduction target for scope 1 and 2 emissions	The bank has set a reduction target of more than 2.5% per year for its absolute scope 1 and 2 emissions.	The bank has set a reduction target for its absolute scope 1 and 2 emissions which is higher than 1% per year.	The bank has set a reduction target of less than 1% per year for its absolute scope 1 and 2 emissions.	The bank has not set a reduction target for its absolute scope 1 and 2 emissions.
Reduction target for scope 3 emissions	The bank has set a reduction target of more than 2% per year for its absolute scope 3 emissions linked to the use of its infrastructures.	The bank has set a reduction target of less than 2% per year for its absolute scope 3 emissions linked to the use of its infrastructures.	The bank is well aware of levers to reduce its scope 3 emissions related to its infrastructure, and carries out specific projects, but it does not provide any numerical figure.	The bank does not mention its scope 3 emissions linked to its infrastructures.
The bank's climate strategy	The bank has developed tools to invest in "green" projects and to withdraw from "brown" projects. (e.g. taxonomy to exclude brown industries, climate risks taken into account while granting a credit, climate taken into account while allocating the portfolio through an SRI strategy.)	The bank is aware of the climate impact of its financing activities and of the risks linked to climate. It takes into account these variables in its strategy, through guidelines or not binding goals.	The bank is aware of the climate impact of its financing activities and/or of the climate risks incurred but takes into account these variables marginally in its strategy.	The bank does not seem to take climate into account in its strategy.
Products and services facilitating customers' transition projects	The bank offers products and services that **encourage** its customers to carry out transition projects (e.g. **attractive** green savings products, green bonds **facilitated** issuance for clients, etc.) and gives details about these products and services.	The bank offers products and services that **allow** its customers to carry out transition projects (e.g. green savings products, green bonds issuance for clients, etc.) and gives details about these products and services.	The bank offers products and services for its customers to carry out transition projects (e.g. green savings products, green bonds issuance for clients, etc.) **but provides few details** about these products and services.	The bank does not mention any product or service that would facilitate its clients' transition projects.

EVALUATION OF THE BANK'S OVERALL RATING

The calculation of a bank's overall rating takes into account the intensities associated with the financing carried out by the bank in metric tons of CO_2 per million euros of financing, as well as an evaluation of the bank's climate strategy.

Note: The bank's financial structure is different from that of a non-bank listed company. Thus, it is not possible to use an indicator such as enterprise value (EV) to calculate intensities. We therefore use the financing that is granted by the bank to calculate the intensities.

AGGREGATION IN A PORTFOLIO

When aggregating several issuers in a portfolio, there is a risk of double counting of the induced emissions. For example, when a bank finances a business, we calculate the emissions financed by the bank by taking into account the company's emissions, and we also calculate the emissions of the company itself. To mitigate this problem and to avoid double counting when analysing a portfolio, we restate the bank's emissions and those of the financed company.