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# Financed Emissions Tool

Methodological Note

2023

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The assignment was carried out in the framework of the project "Promotion of Rural Finance for Sustainable MSE Development in the South Caucasus and Ukraine", implemented by DSIK and funded by the German Ministry for Economic Cooperation and Development (BMZ).

The DSIK and the NBG would like to acknowledge and show appreciation for the active participation and contribution in developing this document to the involved parties.

# NBG Financed Emissions (FE) Tool

## Context

In the context of corporate sustainability, a paradigm shift can be observed: For a long time, the consideration of the CO2 footprint of a company was focused on the emissions of the business operations and energy consumption, which are labeled as scope 1 and 2 emissions in the logic of the Greenhouse Gas Protocol (GHG Protocol 2023). Influenced especially by the work of the Task Force on Climate-related Financial Disclosures (TCFD 2023), in assessment and reporting, this rather narrow view is replaced by a more comprehensive understanding. This includes upstream and downstream emissions in the value chain – scope 3 in the GHG Protocol’s logic. For financial institutions, these scope 3 emissions include not only emissions that the banks directly *cause* but also those that they merely *enable* by provision of financing. As there is a strong indication that Financed Emissions are not only an integral part of a modern, comprehensive reporting scheme but also have a considerable relevance towards ESG risk management (Takahashi & Shino 2023), it is important to systematically assess them.

## Methodology of the Financed Emissions Tool

The Partnership for Carbon Accounting Financials (PCAF) has developed methods for different asset classes, which can be used to calculate the financed emissions (PCAF 2022). The most crucial and relevant for all banks within these asset classes is the portfolio of business loans. Here, the idea is that the capital given to a company enables its business case and, in turn, its emissions as well. Hence, the quota contributed to a company’s capital via financing is used to calculate the attributable share of its emissions and is thus labeled “Attribution factor”. While it would be ideal to calculate this and the emissions directly based on company-level data, a lack of information often makes it necessary to resort to sector data instead (PCAF 2022, 70):

Figure 1. Basic formula for calculation of financed emissions (business loans)

$$\text{Financed emissions}_S = \text{Attribution factor}_S \times \text{Emissions}_S$$

with

$$\text{Attribution factor}_S = \frac{\text{Outstanding amount}_S}{\text{Total equity + debt}_S}$$

S = Sector

The sum of total equity and debt are equal to a company's assets. Hence, the formula can be adjusted, which corresponds to option 3b of PCAF (PCAF 2022, 143):

Figure 2. Modified formula for calculating financed emissions<sup>1</sup>

$$\text{Financed Emission}_s = \text{GHG-Emissions}_s \times \frac{\text{Outstanding amount}_s}{\text{Assets}_s}$$

Using these formulas and information on sector-level, it is possible to calculate a bank's financed emissions for the business loan portfolio with a very manageable dataset. In the NBG Emission Tool, GHG emissions on the sector level have been sourced from the National Greenhouse Gas Inventory (MEPA 2021, information status 2017) and asset data from SARAS database for companies in the categories 1-4 (SARAS 2023, information status 2021). For benchmarking reasons, the calculation has also been done on the country level, using loan data from the NBG's reporting.

The NBG Financed Emissions tool is a pragmatic tool that bridges the lack of data, offers the possibility of calculating financed emissions for each customer and additionally provides a benchmarking tool. Nevertheless, if individual emission values are available for a customer, these should be used instead. Additional information on the methodology and the data used can be found on the introduction page of the tool. It is planned to update the tool when new information is available, and also it is planned to extend the calculation to other sub-portfolios.

### Financed Emission Tool in Practice

In order to apply the Financed Emission Tool into practice, let's have a look at several cases of calculation of financed emissions as well as related data. During the estimation process, the following essential statistical information is required:

- **Loan Volume in GEL** – Total Bank loan portfolio per financed sector. (Please note that loan volume in this context is not one particular real bank portfolio data, but rather an average portfolio figure, given as an example for illustrating tool).
- **Loan Volume in GEL COUNTRY** – Total loan volume to legal entities for the sector on the country level (NBG, June 2023);
- **Assets** – Total Assets on sector level, for companies CAT I-IV from 2021 (SARAS, June 2023);
- **GHG-Emissions (Gg CO<sub>2</sub> eq)** – 2017 GHG-emissions of Georgia as reported towards the Paris Agreement (2021).

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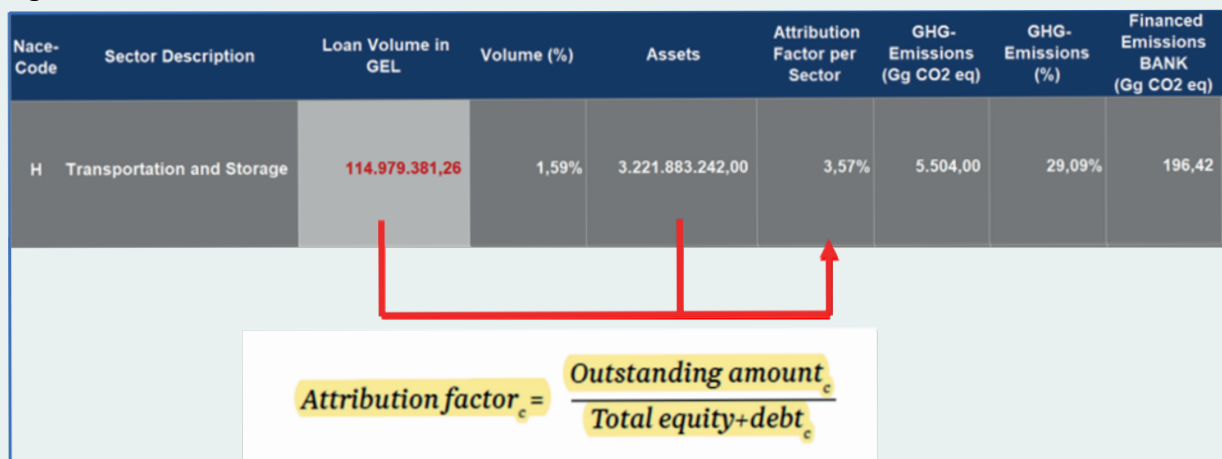
<sup>1</sup> Please note that for reasons of clarification, the method quoted by PCAF has been slightly rearranged

Based on the PCAF methodology, considering all the above-mentioned important variables and using the figures from “Transportation and Storage” sector as an example, financed emission tool provides following operations:

- **Calculation of “Attribution Factor” per Sector:**

As it was explained above, before calculating financed emission per sector or the country level, the Attribution Factor should be defined. This element is derived as follows: By dividing the bank's loan portfolio through the total assets (*Total equity + debt*) of the sector (see Figure 3). It shows which part of the economic sector's capital has been financed by the bank.

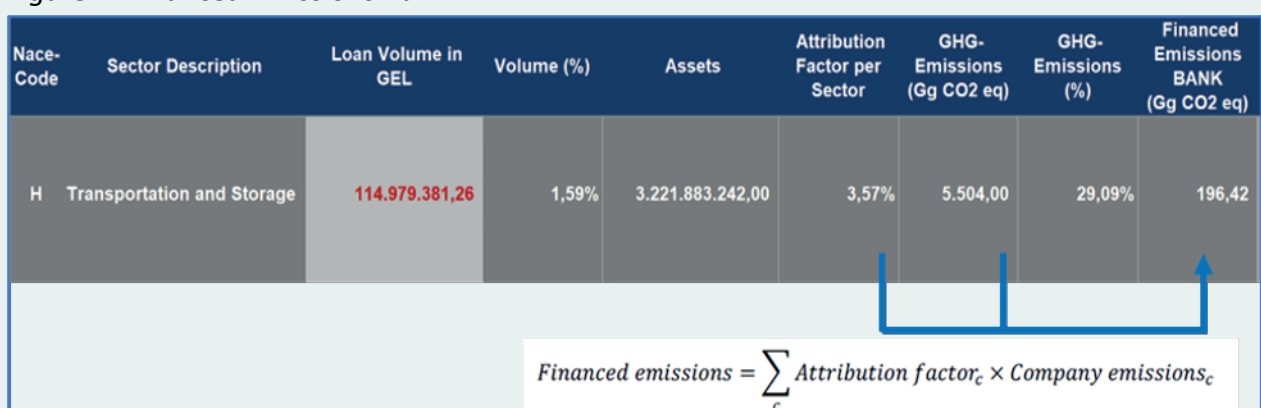
Figure 3. Attribution Factor



- **Calculation of Financed Emissions BANK:**

Using the GHG-emission volume of the sector and the Attribution Factor, the Financed Emissions on bank-level are calculated (see Figure 4).

Figure 4. Financed Emissions Bank



- **Calculation of Attribution Factor per Sector COUNTRY:**

Using data from Loan Volume in GEL COUNTRY and Assets per particular economic sector, the same operations are performed to estimate the Attribution factor on country level;

- **Calculation of Financed Emissions COUNTRY:**

Financed emissions on the country level are calculated with the same logic that was explained in the case of banks, considering respective data from the Attribution Factor per Sector COUNTRY and GHG Emission. It is used to compare each bank's financed emissions with the country's total financed emissions. It is used to compare the financed emissions of each bank with the total of the whole country.

The Finance Emissions Tool includes a **Result Dashboard**, where all the findings are available. The following table (see *Figure 5*) as one of the key elements of the dashboard, transparently presents the Financed Emissions Tool calculation's results by economic sectors for individual banks and country level separately:

*Figure 5. Results of the Financed Emission Tool, example*

Bank		Bank		Country			
Kusys	Aktivität/Branche	Financed Emissions in t CO2 e		Financed Emissions in t CO2 e		Total Emissions in t CO2 e	
A	Agriculture, Forestry and Fishing	227,130.46	24.55%	1,627,575.04	33.71%	2,308,000.00	16.39%
B	Mining and Quarrying	7,262.00	0.78%	10,381.69	0.21%	76,000.00	0.54%
C	Manufacturing: Food, Beverages & Tobacco	167,584.65	18.11%	816,884.77	16.92%	2,097,000.00	14.89%
C	Manufacturing: Chemicals	74,739.56	8.08%	282,009.06	5.84%	678,000.00	4.81%
C	Manufacturing: Rubber and Plastic	39,579.80	4.28%	168,213.66	3.48%	532,000.00	3.78%
C	Manufacturing: Metals	127,358.57	13.77%	362,287.42	7.50%	989,000.00	7.02%
C	Manufacturing: Other	11,223.47	-1.21%	17,495.63	0.36%	155,000.00	1.10%
D	Electricity, Gas, Steam and Air Conditioning Supply	9,177.15	0.99%	39,554.78	0.82%	407,000.00	2.89%
E	Water Supply, Sewerage, Waste Management and Remediation Activities	258.01	0.03%	582.90	0.01%	41,000.00	0.29%
F	Construction	54,420.78	5.88%	325,801.90	6.75%	1,045,000.00	7.42%
G	Wholesale and Retail Trade	19,153.26	2.07%	134,735.77	2.79%	541,000.00	3.84%
H	Transportation and Storage	129,650.91	14.01%	710,223.10	14.71%	3,633,000.00	25.80%
I	Accommodation and Food Service Activities	17,234.93	1.86%	126,530.34	2.62%	381,000.00	2.71%
J	Information and Communication	174.42	0.02%	2,144.10	0.04%	54,000.00	0.38%
K	Financial and Insurance Activities	1,660.95	0.18%	8,357.80	0.17%	51,000.00	0.36%
L	Real Estate Activities	2,771.73	0.30%	22,041.21	0.46%	114,000.00	0.81%
M	Professional, Scientific and Technical Activities	1,582.35	0.17%	3,343.91	0.07%	26,000.00	0.18%
N	Administrative and Support Service Activities	936.41	0.10%	5,669.98	0.12%	24,000.00	0.17%
O	Public Administration and Defence, Compulsory Social Security	26,832.22	2.90%	-	0.00%	277,000.00	1.97%
P	Education	13,200.69	1.43%	33,809.42	0.70%	109,000.00	0.77%
Q	Human Health and Social Work Activities	128.16	0.01%	91,587.70	1.90%	251,000.00	1.78%
R	Arts, Entertainment and Recreation	13,372.69	1.45%	29,009.24	0.60%	249,000.00	1.77%
S	Other Service Activities	2,214.50	0.24%	10,483.51	0.22%	46,000.00	0.33%
T	Activities of Households as Employers	-	0.00%	-	0.00%	-	0.00%
U	Activities of Extraterritorial Organisations and Bodies	-	0.00%	-	0.00%	-	0.00%
		925,200.73	100.0%	4,828,722.94	100.0%	14,084,000.00	100.0%

As provided, the total GHG emission of a country equals 14 084 000 Tone CO2 e, out of which the major contributors are the following sectors: “Transportation and Storage” and “Agricultural, Forestry and Fishing”, 26% and 16% respectively. Moreover, 34% (4 828 722 Tone CO2 e) of total GHG emissions are financed emissions on the country level. And in this

example, 19% of the total financed emissions are due to the BANK. It is worth mentioning that the sectors with the relatively higher share of financed emissions among both the Bank and Country levels are “Agricultural, Forestry and Fishing”, “Manufacturing” (most of the sub-sectors) and “Transportation and Storage”.

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