

CARBON CONUNDRUM:

The Curious Case Of Financed Emissions

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BUSINESS

CARBON CONUNDRUM: THE CURIOUS CASE OF FINANCED EMISSIONS

By Andrew Howell, CFA and Maximilian Schreck

Most major financial institutions published sustainability reports this spring. They were a mixed bag. On the positive side, many large banks have committed to net zero lending by 2050, often paired with 2030 interim targets to reduce emissions in key sectors. And disclosure has improved considerably over the past few years, providing a clearer sense of the climate impacts of lending activity than ever before.

The bad news is that, despite this progress, climate reporting from banks is still inconsistent and confusing, and shareholder proposals to add clarity have [struggled to gain traction](#). Climate accounting standards for banks and other lenders are still evolving, and in the meantime a patchwork of data disclosures lead to incomplete and sometimes misleading results.

Different metrics, different messages

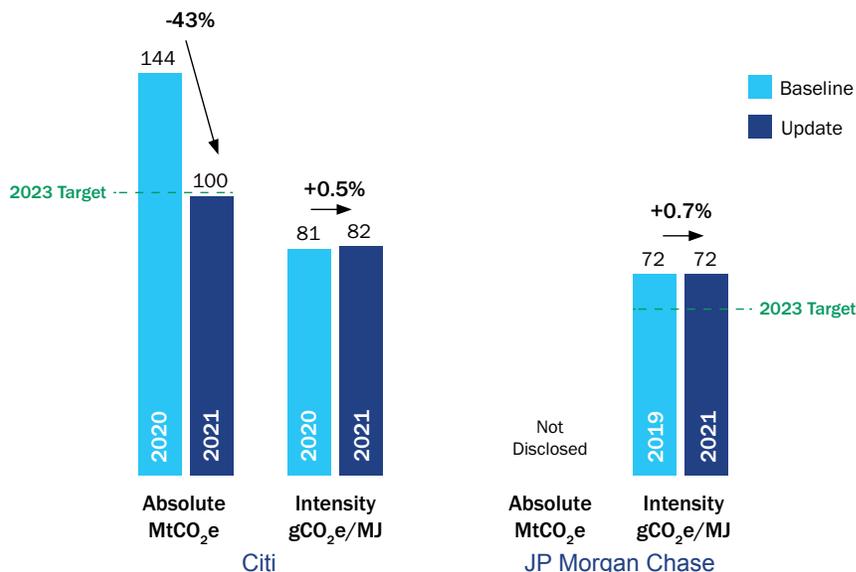
The most recent disclosures on financed emissions from Citi and JPMorgan Chase provide a window into these reporting challenges.

In its [2022 TCFD report](#) published in March 2023, Citi reported the absolute emissions of its oil & gas loan book at 100 megatons of carbon dioxide equivalent (CO₂e) in 2021. This was a striking 30% decline from the previous year. Citi also reported that its oil & gas portfolio had a physical emissions intensity of 82 grams of CO₂e per megajoule (MJ) in 2021; this intensity was slightly higher than the previous year (81g CO₂/MJ).

JPMorgan Chase, in its [Climate Report 2022](#) published last December, did not report any absolute emissions measure, but its 2021 oil & gas physical emissions intensity measure, at 72g CO₂e/MJ, was also up slightly.

These results are difficult to make sense of: how could Citi's absolute emissions plunge so sharply, while its emissions intensity rose slightly? And how can investors hope to compare Citi's carbon performance with its peer JPMorgan Chase, which did not report absolute emissions at all?

Citi and JPMorgan Chase Oil & Gas Sector Financed Emissions, from 2022 Climate and TCFD reports



Citi

- Baseline: emissions data 2019; financial data 2020
- Update: emissions data 2020; financial data 2021

JPMorgan Chase

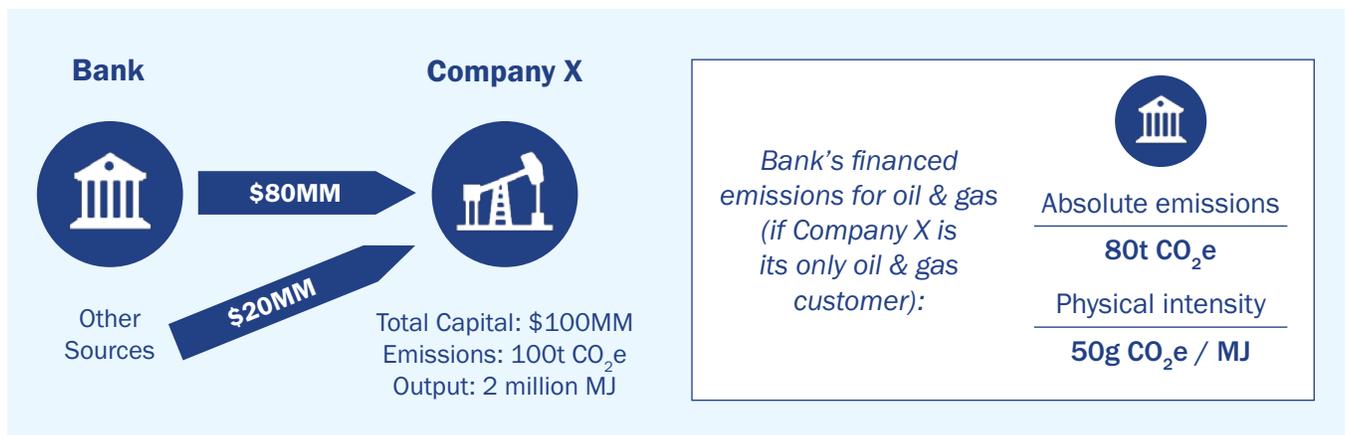
- Baseline: emissions data period undisclosed, likely 2018; financial data 2019
- Update: emissions data period undisclosed, likely 2020; financial data 2021 + 1H2022

What’s behind the numbers

To understand what’s going on here, we need to review some carbon accounting concepts. The leading framework for reporting emissions, the Greenhouse Gas Protocol, classifies financed emissions as “Scope 3, Category 15” – but standards for reporting them, governed by groups such as the Partnership for Carbon Accounting Financials (PCAF), are still evolving and not yet in universal use.

Two types of financed emissions are especially important. The first is a bank’s **absolute emissions**, which is the amount of CO₂e assigned to a bank due to its lending activity. Under the PCAF methodology, a company’s emissions are assigned to its investors and lenders relative to the amount of total finance provided to the company in a certain period. So, if in a certain period Company X emits 100 tons of CO₂ and receives 80% of its financing from a single bank, then that bank is assigned 80% of Company X’s emissions, or 80 tons of CO₂e.

A second type of emissions is **physical emissions intensity**, which assesses emissions relative to some unit of output depending on the sector (in the energy sector, that’s joules). So, if the same Company X is emitting 100 tons of CO₂e and produces oil with an energy content of 2 million megajoules, then its emissions intensity is 50g CO₂e/MJ (100 tons CO₂e / 2 million megajoules). If Company X is the bank’s only oil & gas client, then that bank’s oil & gas portfolio has an emissions intensity of 50g CO₂e/MJ.



Measurement challenges in the real world

Financed emissions in the real world are far more complicated than this example. The large banks have thousands of clients, most of which receive financing from multiple sources. Many of these borrowers lack precise, timely data on their emissions, further complicating efforts to quantify their financed emissions. A few points should be kept in mind:

- **For absolute emissions, attribution fluctuates with the level of financing.** A borrower’s emissions are assigned to a specific lender based on the attribution formula below. As the formula indicates, a bank’s share of each client’s emissions is based on the financing it provided in a given year, divided by all financing to the company (called EVIC or “enterprise value including cash”). One important property of this approach is that EVIC is based on market prices and fluctuates with listed equity valuations. If the equity valuation of a company increases, so does EVIC. This means a bank’s share of the client’s emissions can decline even though their financing to the client did not change. Another property is that if a bank increases its financing to a carbon-intensive sector, its absolute emissions will go up, even if that financing is being used to help the company fund its transition to lower emissions, which often requires significant capital. These properties mean that absolute emissions, while an important metric to track, can 1) be quite volatile and 2) require additional analysis to properly contextualize.

$$\text{absolute emissions (MtCO}_2\text{e)} = \sum \left\{ \frac{\text{financing to client (USD\$)}}{[\text{EVIC (USD\$) or (total equity + debt)}]} \times \text{client emissions (MtCO}_2\text{e)} \right\}$$

- **Physical emissions intensity tends to be more stable but does not track overall decarbonization.**

Physical emissions intensity is a loan-weighted average of emissions intensities for a bank’s clients in a certain sector; the formula below shows how this looks for the oil & gas sector. This metric is unaffected by financial market movements, and so tends to be more stable over time. However, reductions in emissions intensity do not necessarily equate to reductions in emissions in the real economy. If a bank increases its financing to lower-emission O&G projects, its emissions can still climb overall, for example if the rate of finance increase is higher than the rate of emissions decrease.

$$\text{physical intensity} \left(\frac{gCO_2e}{MJ} \right) = \sum \left\{ \frac{\text{financing to client (USD\$)}}{\text{total financing to sector (USD\$)}} \times \frac{\text{client emissions (gCO}_2\text{e)}}{\text{embedded energy in O\&G product (MJ)}} \right\}$$

- **Published data sometimes reflects a time mismatch.** Many banking clients do not report timely, precise emissions data, so banks rely on third-party data providers to gather emissions estimates. These providers do not collect data directly from companies, but rather from the data disclosure groups such as CDP, further extending the process. Company disclosures are also often incomplete, leaving data providers to rely on modeling and estimation for some figures. Data points from third-party providers can swing widely due to changes in modelling approaches or a switch to observational data. The vendors also require significant time to collect, model, and standardize data. As a result, emissions data are reported with more than a two-year delay. Financial data is much more timely, and reporting convention in the sector pairs data according to what is most recently available, not what is matched in each time period. This means banks often group emissions and financial data for different time periods. The [PCAF Standard](#) calls for the use of the “most recent data available” even if emissions and financial data are from different years, which can lead to confusion for stakeholders trying to assess a bank’s climate transition progress.
- **Committed versus drawn, and other complications.** A number of other reporting requirements are not specified in the most widely used standards, including whether to use a bank’s committed financing (which could include loan agreements that are not drawn) or outstanding financing to calculate absolute emissions and emissions intensity. In some cases, this can make a significant difference to the outcome. For example, absolute emission metrics are far more impacted by differences in committed versus drawn amounts than emissions intensity metrics.

Making sense of the reported numbers from Citi and JPMorgan Chase

Putting all this together offers some insight into Citi’s reported decline in absolute emissions in 2021. In its report, Citi reveals that its 2021 financed emissions calculations are based on 2020 emissions data and 2021 financial data. This mismatch is important: in 2020, client emissions were likely reduced by lower economic activity amid the Covid-related slowdown. However, the financial data comes from a year later, when the market’s rebound would have caused equity values (and thus EVIC) to rise, decreasing Citi’s share of its clients’ emissions. The unchanged emission intensity metric suggests that the big decline in absolute emissions was to a large extent a mirage. Although JPMorgan Chase did not publicly disclose such a temporal mismatch, it is likely that the significant delays associated with emissions reporting result in some temporal mismatches for all banks reporting financed emissions.

It’s also worth noting that despite the volatility in Citi’s absolute emissions data, it nevertheless contains information that could be useful to stakeholders over time. Absolute disclosures demonstrate actual progress toward the absolute target of net zero in 2050. Intensity disclosures demonstrate the change of finance from high-emission clients to low-emission clients, but over the long run do not necessarily demonstrate progress toward net zero in 2050. Both are needed to understand the bank’s financed emissions performance.

What is a responsible bank to do?

The divergent financed emission disclosures of Citi and JPMorgan Chase demonstrate the challenges that banks face in producing metrics that are clear and meaningful. There are, however, best practices that can help improve the quality and usefulness of financed emissions data.

- 1. Banks should disclose multiple metrics**, including at the very least, absolute emissions and physical emissions intensity, by committed amounts. Despite the greater volatility of absolute emissions seen in the example above, absolute emissions are a critical data point in the assessment of net zero progress because net zero is an absolute target. Indeed, if banks reach their emissions intensity targets in 2030 it will not necessarily show net zero alignment without additional information on absolute financed emissions. These metrics are most useful when used in conjunction over several years of reporting.
- 2. Banks should work with data providers to release emissions data more quickly**, and in the meantime, **banks should explicitly report mismatches in emissions and financial data years**. It is not accurate to report temporally mismatched data with only the year of the most recent data. While time-data issues are unavoidable for now, banks should work with data providers to shrink the time lag in emissions reporting to address mismatches as soon as possible.
- 3. Banks should support regulations** to improve emissions data quality across the market. The forthcoming [SEC climate risk disclosure](#) rule would require publicly traded companies to disclose certain climate risk-related information in their annual 10-K filings, including greenhouse gas emissions metrics and targets. Standardized disclosure requirements like this are essential to allow financial actors to assess and manage the climate risk in their portfolios. With the release of the final SEC rule expected later this year, banks should come out as vocal supporters.

A final point to keep in mind is that what really matters for climate impact and climate risk is the trajectory of emissions for the overall economy, not the changes in a single bank's financed emissions. It is relatively straightforward for a bank to lower absolute emissions by walking away from high-carbon clients. But if those clients move their business to another bank and continue business as usual, their climate impact is unchanged. Bank emissions reporting should reflect not only the emissions financed through their lending, but also how their lending choices accelerate – or slow – companies on the path to an energy transition. Investors and stakeholders should encourage this as they look beyond simple metrics and reward frameworks that encourage rapid, responsible decarbonization.