



CRÉDIT AGRICOLE S.A.

Technical paper

Green–Brown Outstanding Ratio

The objective of this document is to **propose a method for measuring banks' footprint on the energy mix** and their efforts in terms of transition.

Crédit Agricole Group has carried out an in-depth review of the various approaches proposed by a wide range of stakeholders — research institutes, financial data providers, non-governmental organizations, among others. Following this work, the Group selected a well-founded methodology aimed at constructing a **Green–Brown outstanding Ratio**, designed to estimate the impact of bank financing on the evolution of the energy mix in the context of the climate transition.

The Green–Brown Ratio aims to measure the contribution of banking institutions to the energy transition by comparing volumes of financing and investment directed toward so-called “green” energies with those allocated to “brown” energies. Faced with the diversity of existing calculation methodologies, the Group chose an approach that is robust, transparent, and easy to understand, the principles and implementation of which are presented in this document.

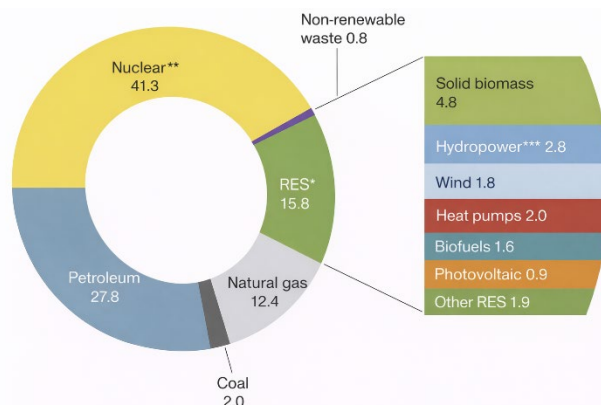
1. Choice of activity scope

The Group has chosen to focus on **primary energy**, which represents energy as it is produced or extracted before any transformation or consumption, as opposed to **final energy**, which corresponds to energy available to the end-user after conversion, transport, or refining.

This ratio therefore makes it possible to directly assess the contribution of bank financing to green or brown energy sources. It avoids distortions related to losses, transport, and intermediate transformations, and enabling consistent comparisons between players within each value chain.

For example, in France, the breakdown of primary energy consumption by category is as follows (source: SDES, France's Energy Balance):

Breakdown of primary energy consumption by energy source TOTAL: 2,575 TWh in 2024¹ (data not adjusted for climate variations)



¹ Provisional 2024 data.

* RES = renewable energy sources.

** This corresponds mainly to nuclear production, after deducting the net electricity export balance. It also includes hydroelectric production from pumped-storage power stations, although this remains marginal compared with nuclear production.

*** Hydropower excluding pumping.

Note: Nuclear production corresponds to the heat released by the nuclear reaction, conventionally estimated at approximately three times the final electricity output.

Scope: France.

Source: SDES, Energy Balance of France.

Scopes considered for the calculation of the Green–Brown Outstanding Ratio

Green scope

- **Renewable energies** (solar, wind, hydroelectric, geothermal, biomass), also including **green molecules** (biofuels, green hydrogen, green ammonia, green methanol, e-fuels)
- **Nuclear energy**

Brown scope

- **Oil**
- **Gas**
- **Coal**

Defining green and brown value chains remains complex and non-standardized. Certain infrastructures, such as power grids, can be used both for distributing decarbonized electricity and electricity of fossil origin. Similarly, some industrial equipment suppliers are active both in fossil energy projects and in low-carbon solutions.

In this context, each player may choose different weighting factors, making publicly disclosed figures difficult to compare. The Green–Brown Outstanding Ratio presented

here focuses on a consistent and robust definition of value chains, while remaining open to future expansion once a shared standard for green and brown value chains becomes available.

2. Choice of scope in terms of products and financial metric

Products covered

The Green–Brown Ratio applies to all bank financing recorded on their balance sheet. It excludes market operations and bonds, whose nature differs, and which cannot be aggregated with traditional lending activities. In our view, the only way to consolidate all products would be to use revenues, an approach that has not been retained at this stage for calculating this indicator.

Moreover, there is a strong correlation between lending activity and bond issuance activity. Including bonds in the calculation of the green–brown ratio would therefore not significantly change the result and would increase complexity without real added value.

Financial metric

The metric selected is **Exposure at Default (EAD)** rather than total on- and off-balance-sheet exposure. In our view, this approach better reflects investment flows directed toward the real economy, as it weighs exposures differently depending on their nature (drawn/undrawn) and maturity.

It therefore better captures the effective contribution to the energy transition, as opposed to total exposure, which combines drawn and undrawn commitments as well as short- and long-term maturities.

EAD also ensures comparability within the financial sector, as this indicator is calculated using standardized risk models.¹

Flow or stock perspective

The ratio can be calculated using two approaches:

- **Flow-based**, monitoring only new financing or renewals, and providing a short-term view of commercial activity. This approach gives equal weight to financing regardless of maturity (short-term or long-term) and whether it represents new financing or simple renewals. As a result, it provides only a very partial view of on-balance-sheet exposure.

¹ As of today, 100% of fossil energy extraction outstanding amounts are calculated in EAD. As of today, 70% of low-carbon energy production outstanding amounts are in EAD and 30% are recorded as on-balance-sheet outstanding amounts.

- **Stock-based**, capturing both new financing and non-renewals and repayments, offering a more representative view of the overall portfolio dynamics and of the bank's commitment to its clients.

The latter approach has been selected for calculating the green–brown outstanding ratio.

3. Method for calculating the green–brown outstanding ratio

Calculating the Green–Brown Outstanding Ratio requires estimating each financed counterparty's exposure to green primary energy and brown primary energy.

To achieve this, the Group has chosen the following approach: the green or brown exposure that the Group has to each client is calculated by applying a percentage reflecting the share of green or brown activity in the client's business to that client's EAD.

Crédit Agricole green or brown exposure to a given client
= Client EAD × % of client activity linked to green or brown primary energy

The EAD held in the portfolio for each client is directly extracted from internal databases and calculated using standardized risk models.

Calculation of the client's Green or Brown activity share

There are two possible options:

- **Project finance** (i.e. financing earmarked for identified assets) dedicated to the production of green or brown primary energy: 100% of the client's activity is considered, and therefore the entire corresponding EAD.
- **Corporate finance** (i.e. financing the overall activity of the client): The percentage reflects the share of the client's activity related to the production of green or brown primary energy. The method for estimating this percentage varies depending on the type of energy:
 - For **green energies** (renewable energy, nuclear, and green molecules) and **coal**, the calculation is based on **client revenue**. The percentage used represents the share of the client's revenue resulting from primary energy production. These data are collected either from client disclosures or from data providers.
 - For **oil extraction** and **gas extraction**, the calculation is based on **CAPEX**. The percentage used represents the share of the client's CAPEX related to oil or gas extraction, following a conservative approach (fossil CAPEX often represents a higher share than fossil revenue for these actors). This data is collected from client disclosures.