**Principles and good practice of carbon accounting**

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Carbon is a shortened form of the international standard for measuring the weight of greenhouse gases (or GHGs) caused by human activity - weight expressed in kilos of CO2 equivalent

**Introduction - Moving from carbon counting to carbon accounting**

Carbon is becoming progressively more expensive, scarcer and more criticized: every legal entity, company or public authority, has therefore an interest in decarbonizing its offer and letting its partners know about it; and, to do so, continuously counting its carbon efficiency (to monitor its decarbonization results) and the carbon weights of its offer, good or service. Unfortunately, these counts remain rare, complex, unreliable and not very comparable.

These *Principles and Good Practices of Carbon Accounting* remove these four obstacles by moving from carbon counting to carbon accounting. They transpose the principles and good practices of monetary accounting into carbon accounting.

The *Principles...* are complemented by free Business Modules that respect them. Each year, in less than an hour, a Module gives the business its carbon balance sheet and profit and loss account, with a unit weight of carbons associated with its offer(s) (which it can indicate to the client on its estimate or invoice); and a decarbonisation result compared to the previous year. The Module advises the company to have the carbon accounts validated by the company's accountant.

Initial modules [HERE](https://carbones-factures.org/en/download-the-project-c-i-instructions/) show the feasibility for two businesses, a medical practice and a consulting firm.

Up to date with the latest international carbon standards (scopes 1, 2 and 3), the accounting measure provides six qualities that are missing from traditional carbon accounting,

1- Accounting balance, with as much carbon coming in as going out.

2- Accounting reconciliation, the supplier's outgoing weights are the customer's incoming weights.

3- Accounting exhaustiveness, the carbon perimeter is aligned with the monetary perimeter.

4- Accounting significance, estimates are concentrated on the significant lines from a carbon point of view.

5- Accounting prudence: in the absence of supplier carbons or for insignificant lines, an estimate from a public source is used, plotted with a prudence coefficient.

6- Specialisation of a real material accounting of greenhouse gases: financial carbons are counted separately from real carbons.

**Principles and good practices**

1- Operational Carbon Footprint

2- Summary Carbon Account

1. Inputs and outputs
2. Unit weights invoiced to the customer
3. The decarbonation result from one period to the next

3- Consolidated Carbon Account

4- Detailed carbon account

5- Accounting controls

6- Annexes to the carbon accounts

1. Annex to the carbon balance sheet - financial asset carbons
2. Annex to the carbon income statement - carbons of the monetary accounting annex

Carbon accounting is a material accounting that counts the actual carbon weights emitted or to be emitted in products and services. It is exhaustive and counts more finely the significant lines in terms of carbon weight. When significant carbon weights of goods or services are not given by their producer, good practice (taken up by the Modules) gives a default measurement obtained from a publicly traced source, weighted by a conservatism factor (*under discussion: is the weighting done by the source or by good practice*). Good practice ensures comparability of measurements.

1. **Operational Carbon Balance sheet**

The Operating Carbon Balance sheet entifies the significant operating assets of the legal entity (real estate, vehicle, machinery, software, etc.). Other operating assets that are depreciated in monetary terms are counted as expenses *(under discussion: a good practice for defining "significant", based on a percentage of the company's total annual carbon weight).* The annex for the financial carbons of financial assets carried on the legal entity's monetary balance sheet is described in 4-.

The opening balance sheet gives for each significant asset the carbon weight of its production and major maintenance not yet depreciated. If the weight is not given by the manufacturer, a default measure is applied (to m2 for a building, a weight in kilos for a machine, euros for software). The residual weight of the asset is taken over by the purchaser on his balance sheet in the event of a sale. It remains on the balance sheet if the asset is decommissioned.

In the closing balance sheet, the weight of the asset is increased by the weight of major maintenance for the year and decreased by the weight of depreciation (which is added to the expenses in the income statement in 2-). The depreciation rules are those applied by the legal entity in monetary accounting. The depreciation periods are based on the life of the asset (*under discussion: good practices ensuring the comparability of depreciation allowances - 30 years for professional buildings - based on technical and not fiscal periods*).

1. **The synthesis Carbon Income Statement**

This is the carbon equivalent of the monetary synthesis income statement of the legal entity, reduced by lines that do not contribute real carbon (salaries and social charges, loan repayments).

1. **Carbon inputs and outputs**

The incoming carbons correspond to the expenses or purchases of the monetary account. Outgoing carbons correspond to the products or sales of the monetary account (for market activities). The weight of newly introduced, emitted or to be emitted carbons (for specific activities, cement...) is recorded as positive on a specific line, and similarly as negative for the weight of captures (forests...).

As indicated in 1., major maintenance work on an operating asset is recorded on its line in the balance sheet, and the depreciation of the asset is deducted from the balance sheet line and added to the incoming carbons.

The account distinguishes between carbon-significant and non-carbon-significant purchases. Good practice, reflected in the Modules, indicates which purchases are significant depending on the goods or services produced by the legal entity.

Non-significant purchases are grouped in two lines, one for goods and the other for services, and counted by their default Measure (*under discussion: the same for all companies or not?*).

For each significant purchase, the good practices give a default measurement based on easily verifiable physical data (weight of purchases, number of m2, kWh, km, etc.). They use the same conventions for measuring the rental (or leasing) of an operating asset as for its ownership.

The total weight of incoming carbon is the accounting carbon footprint of the legal entity.

The account identifies the weight of outgoing carbons: this is the sum of the carbons that over the period have been allocated to outgoing goods and services. Good practice is for these weights to be charged (for market output) or reported (for non-market output) to the recipient.

The balance of the input and output carbons gives the carbon accounting balance, over the period and cumulatively. Good practice is to aim for balance.

1. **Unit weights charged to customers**

Among the market goods and services produced, the legal entity distinguishes between those invoiced unitarily and significantly, and the others.

Outputs invoiced unitarily in monetary terms are also invoiced unitarily in carbon terms. Their unit billing weight corresponds to their unit price and is intended to cover the total input carbon required to manufacture a unit, for the last known year. It incorporates a conservatism factor that limits the risk that the invoiced carbon weights do not cover the required carbon inputs. For other offers, a carbon weight per euro is applied to the quote or invoice amount (the incoming carbon weight divided by the amount invoiced over the year).

In order to attach the weights of the incoming carbons to the offer, the legal entity follows the same cost accounting rules as for its invoicing in euros. In the absence of cost accounting, it follows good practice as set out in the Modules.

1. **Decarbonation result from one period to the next**

The period-to-period decarbonisation result measures a consensual decarbonisation because it takes place both at the level of the legal entity and the community. It has three possible origins: changes in unit weight (which applies to all legal entities), volume and net removals/sequestrations.

- The change in the unit weight(s) associated with production is applied to the production volume of the first period. The unit weight is that of a unit produced for the unit-billed offer(s). It is otherwise that of an hour of work: the total of the incoming weights required by the offer divided by the number of hours worked by the company in the year on this offer.

- The evolution of the quantities (or volumes) of a production (at constant unit weights) can only be measured when a good collective practice indicates a quantified and dated threshold for this production that separates the "green" and "brown" productions. This is the case for cement, automobiles, construction and a growing number of other products. An increase in quantity is a (relative) decarbonisation for the legal entity and an (absolute) decarbonisation for the community if the company's product is "green", and a recarbonisation otherwise. The signs are reversed for a decrease in quantity. The result is the unit weight difference at the threshold multiplied by the number invoiced in the first period.

- Net carbon capture is only measurable if the legal entity introduces or captures carbon (*under discussion*).

(*under discussion: the decarbonation result could be corrected by Decarbonation Result Transfers, a financial instrument reserved for legal persons whose carbon accounting complies with these Principles*)

1. **The Consolidated Carbon Account**

This is the equivalent of a monetary consolidated account. It is established with the same accounting precautions as the latter (elimination of carbons corresponding to flows eliminated during consolidation).

1. **The detailed carbon account**

A legal entity may choose to move from the Carbon Profit and Loss Account described in 2- which is a summary account to a detailed Carbon Profit and Loss Account. This account goes into the same detail as the detailed monetary income statement, in which each invoice is tracked separately. The accountant uses his accounting software by feeding it with carbon weights. (*under discussion: partnerships with publishers offering software to facilitate this migration*)

1. **Accounting controls**

Apart from these *Principles...*, the accountant and, if necessary, the management controller apply the principles and good practices followed by the legal entity for its monetary accounts (public or private accounting, national or IFRS standards, consolidated accounts). They justify any deviations from these principles and practices to a possible external audit, which adds a third level of control.

(*under discussion, the list of controls carried out by the accountant to whom a Module is submitted:*

*-The accounting balance of carbons, based on good practices comparing the cumulative deficits in monetary value and in carbon weight.*

*-Validation of the weights of the introduced or captured carbons, based on good practices describing acceptable expert documents.*

*-Accounting reconciliation, by extending the testing of outgoing and incoming invoices to carbon weights.*

*-On a rolling basis, verification of one or more significant lines in the balance sheet and income statement: incoming invoices are present and well classified between "with" and "without" producer carbon weights*)

1. **Annexes to the carbon accounts**

The annexes to the carbon balance sheet and income statement are not managed by the Modules at this stage.

1. **Carbon balance sheet appendix - Financial asset carbons**

The appendix to the carbon balance sheet tracks the financial carbons of the financial assets of the legal entity's monetary accounting balance sheet. For each asset, a line indicates the pro rata of the accounting carbon footprint and decarbonisation result of the legal entity financed.

(*under discussion: a good practice recommends that financial actors enrich their monetary databases on legal entities with data from carbon accounts; this facilitates responses from small legal entities, comparability of measurements and cross-checking of monetary and carbon measurements*)

(*under discussion: summing up the lines of a portfolio of financial assets allows its performance - footprint and result - to be transmitted along the financing chain to the final saver; it provides a quantitative arrow for decarbonisation financing since high results will generally be associated with high financing needs. The addition only makes sense between equity on the one hand and credit on the other and is rendered imprecise by double counting due to cross-flows and the counting of a result at each step down the production chain*).

1. **The annex to the carbon income statement - the carbons in the monetary accounting annex**

Some of a legal entity's carbon expenses are not recorded in its monetary accounting but in annexes to it. They are presented in an appendix to the carbon income statement.

* The carbon weight of travel not reimbursed by the legal entity to and from the legal entity's facilities. (*under discussion: the extension of this document and the Modules to such travel*)
* Downstream estimates: the use and end-of-life of the legal entity's products and services.