



ESG
COCKPIT

METHODOLOGY
MANUAL FOR THE ESG-COCKPIT (AVISO)



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1 Intro

This factsheet explains general background information that is important for the configuration of the ESG Cockpit and, in particular, for handling and interpreting the results, especially for the target group of ESG managers and auditors.

This version is an aviso version. It will be reviewed and updated at the beginning of 2025.

2 Overarching aspects

2.1 Modules

Depending on the module configuration, other functions, especially analyses, are available by default. The module configuration (e.g. ESRS module, GRI module, EMAS module, ...) therefore plays a role both for the standard data offered and for the analyses and emission factors accessible by default.

2.2 System- and own data

On the input side:

In addition to the predefined data and analyses, you can define your own materials - including a factor set, e.g. GWP factor.

Own data can be defined for the following sub-areas:

- My reference values
- My data
- My vehicles
- My products
- My texts

On the output side:

In addition to the predefined analyses (overviews, template menu items), you can define:

- Your own key figures - including formulas, these are your own output lines.
- Customised dashboards, i.e. customised output tables: The tables can bring predefined output lines (selectively) and self-defined key figures into an overview.

2.3 Factors

The factors of the ESG Cockpit are developed together with the Umweltbundesamt GmbH and therefore originate mainly from sources of the Umweltbundesamt GmbH and from ecoinvent.

Both for the configuration of the data catalogue (reference data catalogue) as well as in the input, **comments** on the factor deposit (source) or for a better understanding of the meaning of materials are available - this supports the selection of the correct materials. The comment always refers to the latest situation/factor version.

Factors can change according to the state of knowledge - and due to temporal variability and technological developments.

The ESG Cockpit therefore allows the associated calculation factors to be developed for a substance and saves these factors in factor versions, which are roughly labelled along the timeline and can be directly accessed for evaluation. Analyses can therefore change depending on the **factor version**. The changes per factor version are described at an aggregated level under Help tool information.

The recommendation is to tend to use the latest factor version that is not labelled "in progress".

On the one hand, it is questionable to what extent it makes sense to map time-dependent factors, because they often reflect external influences too much (e.g. other factors for mobility during the

coronavirus crisis) and thus impair the consistent pursuit of the sustainability path at organisational level.

Own factor versions

It is also possible to define your own factors for system materials. It is not necessary to create a complete set of factors; instead, a specific factor version of the ESG cockpit can be used as a basis and individual factors can be overwritten. The internal factors are not output, but it is displayed if your own factors deviate particularly strongly from system factors.

Display of emission factors:

The ESG cockpit is not an emission factor database, but an ESG data management tool. Displaying all factors in the system would make the product considerably more expensive for legal reasons relating to factor licences.

In this respect, the functionality of requestable **AUDIT reports** is provided as a service integrated into the licence price. This is intended to make the factors (of a selected factor version) available for more or less consolidated timeframes for internal AUDIT purposes. However, the emission factors may not be used without an additional licence agreement.

2.4 Calculation and storage logic of the ESG-Cockpit

The ESG-Cockpit always calculates live, it does not save any result data, so that all data is always included at the latest state.

In order to reproduce previously calculated results at a later point in time, the data and configuration must be identical:

- **The configuration can be fixed by fixing timeframes.**
- **The data situation can be frozen by deactivating nodes and/or timeframes.**

2.4.1 System configuration changes

- a) Input-side configuration changes (e.g. new indicators, data ranges, materials) are automatically made in non-fixed timeframes.
- b) However, as this does not automatically enter data into the system, this usually only changes the maximum.
 - the degree of completion, because new data areas and materials can be added on the input side
 - the length of the standard evaluation tables, because new output lines can be added on the output side
- c) Please also note the following with regard to output:
 - output lines labelled VERSION originate from earlier versions (i.e. output lines can change their name or be given the suffix VERSION as a result of a system-side configuration change)
 - in the standard analyses, only the latest output lines are displayed when called up again, unless the output option "Show outdated calculations" is activated (by activating this option, older output lines can be called up again at any time)
 - Output lines without VERSION in the name are the latest version - and can be added if necessary; corresponding output lines are usually placed directly below one another.
- d) Output lines that have been transferred to dashboards remain exactly the same in the dashboards. New output lines are NOT automatically transferred to dashboards.

3 Energy

The energy analyses of the EMAS module were defined with the Umweltbundesamt GmbH in accordance with EMAS.

The current energy analyses of the GRI module are based on the GRI standard.

3.1 EMAS or carbon footprint

The EMAS module currently includes generic energy analyses.

One focus of the EMAS module is in the area of EMS vehicles, which can be used to create a self-configurable vehicle fleet in addition to the system materials.

3.2 GRI

GRI 302-1 and 302-2 aggregate and analyse energy-related disclosures internally and externally.

The analyses include in particular in GRI 302-1:

- direct aggregation of final energy consumption
- evaluation of cumulative energy expenditure (CED)/primary energy
- analyses with regard to
 - o renewability
 - o related to KEAs
 - o "eco" property:
 - 0 - non-renewable
 - 0.5 - waste/reuse
 - 1 - renewable
 - any value between 0 and 1 is possible for electricity - here the eco share from the supplier mix (final energy technology shares) is calculated in addition to the KEA-based renewable share. Eco and renewable shares may well be different.

The GRI module provides for individual vehicles, but they can only be recorded according to vehicle groups and not self-configured.

3.3 System Modifications 2023

3.3.1 GRI

The analyses of GRI 302-1 and GRI 302-2 were significantly updated and expanded in summer 2023.

The most important changes are:

GRI 302-1, Internal energy consumption, now includes more mobility data areas than before in line with the latest interpretation:

- Passenger transport own and hired vehicles
- Freight transport own vehicles

GRI 302-2, External energy consumption, is no longer included:

- Fuels (previously included under 302-1 and 302-2)
- Passenger transport own and rented vehicles (previously only under 302-2)
- Freight transport own vehicles (previously only under 302-2)

3.4 ESRS and general changes 2024

The ESRS module is based on the standard and the datapoints list.

Factoring at the substance level has been extended for ESRS analyses:

- Energy mix shares for the subdivision into fossil, renewable and nuclear. This is also done indirectly (electricity mix shares of the national electricity mixes from ecoinvent v3.10)
- Share of 'renewable' for the resource analyses E5-4
- Recycling and reuse shares, the ratio of shelf life to product group average are entered by the users because they tend to be too general for system materials.
- For details on greenhouse gas emissions, see chapter 4.

4 Greenhouse Gas Emissions

The greenhouse gas emission evaluations of the EMAS module were defined with the Umweltbundesamt GmbH in accordance with EMAS, ISO 14064-1 for reporting greenhouse gas emissions at the organisational level and the GHG Protocol.

The current energy analyses of the GRI module are based on the GRI Standard and the GHG Protocol, to which the GRI refers.

The calculation of greenhouse gas emissions includes all greenhouse gas emissions by recording their global warming potential in CO₂-equivalent emissions (CO₂-eq) in relation to the effects in 100 years (global warming potential 100). Carbon dioxide serves as the reference gas for recording other greenhouse gases. Other gases with greenhouse gas potential such as methane and nitrous oxide are taken into account when balancing GHG emissions according to their climate impact. The conversion is carried out in accordance with the guidelines of the Intergovernmental Panel on Climate Change (IPCC).

Greenhouse gas emissions are calculated and reported separately according to Scope 1, 2 and 3 in accordance with the GHG Protocol.

- 1) **Scope 1** includes all direct emissions caused by an organisation itself. These include, for example
 - The use of fossil fuels to generate energy, such as direct emissions from a stationary boiler or direct emissions from a vehicle fleet
 - Direct emissions of volatile gases, such as refrigerants from air conditioning systems or direct emissions from industrial processes
- 2) **Scope 2** includes emissions from the generation of externally sourced electricity, steam, heat and cooling, specifically those that arise directly during generation (e.g. in power plants, district heating plants)
- 3) **Scope 3** includes all other greenhouse gas emissions from the value-added chain. These are all indirect/upstream and downstream emissions that arise, for example, during the provision of combustibles, fuels and operating materials, air travel, rail travel, in the external vehicle fleet or during the production of office materials such as paper or IT infrastructure.

Emissions from refrigerants are also calculated, not just energy-based emissions

4.1 EMAS or carbon footprint

Market-based variants for Scope2 are achieved in these modules by:

- using your own factor versions
- using your own materials (dedicated data areas "Other energy renewable/non-renewable")

In the case of refrigerants, the focus is strongly on leakage, while production - which is of little significance in comparison - is hardly taken into account (low or no Scope 3).

The grey emissions from production (and road infrastructure) are included proportionately in the emission factors for the transport sector. Vehicle production is therefore not analysed or reported separately here.

4.2 GRI or carbon footprint as part of GRI

This module configuration also explicitly calculates **some variants for Scope2**:

1. for the **location-based** calculations, the material-related GWP factors (location/technology-based according to choice of material) are used.
2. the GWP factors of the country electricity mix (only location-based according to country selection - only for electricity) are used for **location-country-based** calculations.
3. for the **market-based** results, organisation-specific emission factors (e.g. factors provided by the energy supplier) are used, if available. These factors must be entered by the users (taking into account the guarantees of origin for renewable energy). These can be specified in the ESG Cockpit (selectable per node/location) per energy data area or per energy data record for procured electricity, heating and cooling.
If your own CO₂ factors are not entered, the CO₂e factors of the **residual mix** (only for Europe) and location-based are used as a fallback and are also shown.

Certificate quantities:

Instead of market-based factors, certificate quantities (kWh) can also be specified for a certain list of electricity types from the renewable sector, namely for:

- Green electricity mix
- Electricity from biogas
- Electricity from biomass
- Electricity from photovoltaics
- Electricity from hydropower
- Electricity from wind power

The calculation then subtracts the certificate quantities from the specified reference quantities (these are then effectively rated as 0 in Scope2) and only analyses any remaining differences using all the methods described.

Refrigerants:

In order to be able to clearly distinguish between escaped and purchased/refuelled quantities, separate materials are provided for each.

4.3 System Modifications 2023

Location-countrybased was added in summer 2023 as an automatic variant (previously generated via factorisation).

Location-countrybased analyses always calculate with the respective electricity mix of the country, regardless of the electricity quality selected in the data input.

4.4 ESRS and general changes 2024

The ESRS analyses require GWP and scope factors (Scope1,2,3). The analyses for E1-6 also include the evaluation according to Scope3 subscopes, whereby the subscopes are carried out on a data range-specific basis (e.g. for all heating energy sources in the same subscope group). These assignments are

displayed in the tool. They cannot be influenced by the user (except in the 'My data' and 'My products' areas).

In particular, the downstream greenhouse gas emissions of all subscopes can be entered for 'My products'. These are included accordingly in the analysis.

The location-based emissions are calculated in the same way as the GRI-location country-based emissions using the country electricity mixes.

The market-based emissions follow the logic that is also included in the GRI module (see above).

The 'biogenic' analysis is based on the one hand on the GWP biogenic factors fromecoinvent and on the other hand on CO₂ factors from biogenic combustion for biogenic energy sources (source: Federal Environment Agency). These show the biogenic CO₂ emissions that are NOT integrated into the GWP because they are categorized as regenerated over the timeframe.

Other methods

4.5 Materiality analysis

The materiality analysis allows any number of impacts (inside/out and outside/in, both positive and negative) to be recorded for the topics and sub-topics (aspects).

Individual impacts are assigned the criteria required for each impact type (in exceptional cases also specifically for each topic) in accordance with the guidelines.

The scale of the criteria is 1 - 5 in each case, except for the probability, which is used as usual for probabilities with the scale 0 - 1 (or equivalent to 0 - 100).

Scoring is currently implemented in 3 ways:

- a) Without the integration of the probability
 - Average values of the criteria of ONE impact
 - Inclusion of the probability only visually in the materiality graphic per topic
- b) With the integration of the probability '0 - 100'
 - o The probability p is multiplied by the mean value of the other criteria
- c) With the integration of the probability '0 - 5'
 - o The probability p is mapped from 0 - 100 to the scale 0 - 5 and included in the averaging of the other criteria

Special human rights logic: If the human rights reference is set to 'Yes', the probability in variants b and c is always calculated as 1.

Impacts are always aggregated using the maximum function so that no impacts are 'overlooked'.

The calculation method is independent of the storage of the criterion values, so the scoring method can be changed at any time - all scores are recalculated simultaneously.

The categorization of the materiality (active/inactive) of a topic should be based on the score, but is not necessarily linked to it, but remains the decision of the user.

5 Other emissions

Other emissions are currently primarily mapped in the EMAS module using the NO_x and PM indicators and the additional area of wastewater measuring points.

However, the calculation of NO_x and PM emissions can only be regarded as an indication, as the emission values depend on many more parameters than is the case with greenhouse gas emissions, which can be mapped relatively well by recording energy consumption and leakage quantities.

NO_x and PM emissions from the transport sector are calculated on the basis of kilometres and not consumption.

The Economy-of-Common-Goods module also provides for the documentation of measured emission values.