

Q&A for Webinar: “Introduction to ecoinvent Version 3.12” (November 25 & 26, 2025)

Find more information about the ecoinvent database on our [Knowledge Base](#).

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1 Data Quality & Methodology

Question

Answer

Are the carbon content values also updated and included for ecoinvent v3.12?

Carbon content is a mandatory property assigned to (nearly) every exchange in ecoinvent. These are still included in the latest version. They have not had a comprehensive update for this version specifically, but they may have had updates on an individual dataset level. Please check the Report of Changes for an overview. Lower heating value is a property that has been updated comprehensively for this version.

When we read about Market Activities on the Knowledge Base, it says the production part is not included, but in the dataset documentation the production part is included. So, if I want to include the transportation emission of a product in an inventory and I count the production plus the market factor, would it be double counting?

Market activities do not model production processes themselves. However, when looking at a market dataset, a user might notice production-related emissions. This is because the market activity sources its inputs from the relevant production activities, and the emissions from those suppliers are reflected in the market's inventory. In the market contributors (Impact assessment tab in ecoQuery), you can see that the "production of mango" is included as a source of emissions, along with the transportation emissions associated with it.

For this reason, combining a production activity with its corresponding market activity results in double-counting production emissions.

If you intend to add transportation emissions manually, you should either:

1. Use the production activity and model transportation separately, or
2. Use the market activity, which already includes the necessary upstream burdens. These two approaches should not be combined.

What is the temporal representativity of the datasets? Do you average the existing studies in the datasets with the new ones, or do you remove old studies?

In ecoinvent, temporal representativity describes how well the data reflects the time period it is meant to cover. Each dataset includes information about the reference year and the time range of the sources used, so users can see how current the underlying data is.

To your question about how older and newer studies are managed: we do not automatically average all sources. Each study is individually assessed for quality and relevance. Sometimes, older data is still valid if the technology has not changed much; in other cases, older studies are replaced when more up-to-date information becomes available.

What is the % of country-specific data added/updated to replace global emissions data?

ecoinvent does not provide a percentage figure summarizing this. Instead, we offer tools that allow you to identify these changes in detail.

To understand where global datasets were replaced by country-specific ones, or to follow any other changes between versions, the most practical file to use is the Correspondence File available in ecoQuery under Files → Version 3.12 → Supporting Documents → Correspondence File v3.11 - v.3.12.xlsx.

The Correspondence File lists all datasets in two consecutive versions, for example, v3.11 and v3.12, and matches corresponding datasets between versions. The mapping is available for all four system models (cut-off, EN15804, consequential, and APOS).

Check the Status column, which explains if a dataset was:

- Retained (same dataset name)
- Renamed
- Replaced by a different dataset
- Deleted (with no direct replacement)
- Split into multiple datasets
- etc.

The Status column explains only what changed, not the reason behind the change. For explanations, you can consult the Report of Changes. If you would like to see the exchange-level changes inside individual datasets, you can also access the Change Report Annex (Excel) in ecoQuery under Files → Version 3.12 → Supporting Documents → ecoinvent 3.12_Change Report_including Annex.7z.

Since the data are interconnected, when data such as electricity are updated, have those changes been reflected across all related data in the publication of version v3.12?

Changes to any dataset are reflected across all dependent downstream activities. When electricity mixes are updated, these changes propagate throughout the entire database. Since electricity is an input to a large number of datasets, updates to it have a particularly wide-reaching effect.

For a deeper understanding of how datasets link together and how Life Cycle Impact Assessment (LCIA) results are calculated, visit our Knowledge Base, specifically the [UPR, LCI, and LCIA page](#).

Would you be interested in carbon dioxide removals datasets, e.g., enhanced rock weathering or biochar?

If you have data you would like to publish in the ecoinvent database, please let us know, and we'll share more information about the data submission process. For an overview of datasets available in the ecoinvent v3.12, please refer to the [Database Overview](#) file.

2 Technical Features & Data Structure

Question

Will the activity IDs stay the same between older versions and version 3.12?

Answer

A dataset in a linked system model of the ecoinvent database is uniquely identified by the combination of the activity ID of the dataset and the IntermediateExchangeId of its reference product.

An activity ID is created for each unique combination of the following fields:

- activityNameId (to which a string is associated. The activity ID stays the same even if the string changes.)
- geographyId (to which a string is associated. The activity ID stays the same even if the string changes.)
- startDate
- endDate

If any of these four fields change between database versions, the activity ID changes. Because the endDate is set to the current year when the system models are calculated (unless the data provider set the endDate as a future point), the activity ID changes for most datasets between versions.

The reference product IDs generally do not change (even if the product is renamed). But sometimes, an update might include the replacement of the reference product by another one, due to remodeling. In this case, you would see the same dataset in two versions (same activityName and geography), but the product ID and name of the reference product may have changed because of the replacement.

When tracking changes between two consecutive versions of the database, we provide two different files:

- [The Correspondence File](#)

This file maps the datasets between two consecutive versions of the database for each system model. The mappings it contains might not be suitable for all situations, because depending on the new datasets that were introduced (replacing older ones), a user might want to apply a different replacement in their specific model. The correspondence file contains the activity IDs and intermediateExchangeIds of the reference products of the datasets that are mapped. It is recommended to

use this file when updating your models from one version of the database to the next.

- The Change Report Annex (Excel) – see download location below

This file lists all quantitative changes that happened to datasets that exist in two consecutive versions of the database. The changes are tracked in the “Undefined” database, i.e., the datasets before linking and allocation; therefore, the amounts shown might not always be the same as those in the linked system models (due to allocation).

The Change Report Annex (Excel), available in ecoQuery under Files → Version 3.12 → Supporting Documents → ecoinvent 3.12_Change Report_including Annex.7z.

Where can activity IDs be found on ecoQuery?

Activity IDs are not displayed directly in the ecoQuery interface. Instead, they can be accessed in two ways:

- [Database Overview File](#): Find the complete list of activities and their IDs in the Database Overview document provided with each ecoinvent release.
- [Correspondence File \(v3.11 ↔ v3.12\)](#): The Correspondence File lists all activities together with their IDs and how they map between versions.

If you would like to see the activity ID for a specific dataset while navigating in ecoQuery, you can do so by:

- Opening the dataset in ecoQuery.
- Going to the [“Export” tab](#).
- Downloading any of the XML files available (Unit process, LCI, or LCIA).

These XML files can be opened with any simple text editor (e.g., Notes, Notepad, TextEdit), and the activity ID is shown at the top of the file.

In XML format data from LCIA, there is a "Parent Activity ID" but the code doesn't relate to any other activity.

Were the activity codes changed between v3.11 and v3.12? To which version is the "Parent Activity ID" code related?

The Parent Activity ID in the XML LCIA file refers to the undefined version of the activity in the same database version.

A dataset in a linked system model of the ecoinvent database is uniquely identified by the combination of the dataset's activity ID and the IntermediateExchangeId of its reference product.

An activity ID is created for each unique combination of the following fields:

- activityNameId (to which a string is associated. The activity ID stays the same even if the string changes.)
- geographyId (to which a string is associated. The activity ID stays the same even if the string changes.)
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- endDate

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The reference product IDs generally do not change (even if the product is renamed). But sometimes, an update might include the replacement of the reference product by another one, due to remodeling. In this case, you would see the same dataset in two versions (same activityName and geography), but the product ID and name of the reference product may have changed because of the replacement.

When tracking changes between two consecutive versions of the database, we provide [the Correspondence File](#), which maps the datasets for each system model. The mappings it contains might not be suitable for all situations, because depending on the new datasets that were introduced (replacing older ones), a user might want to apply a different replacement in their specific model. The correspondence file contains the activity IDs and intermediateExchangeIds of the reference products of the datasets that are mapped.

Is there a function to search by CAS number? Can you showcase it?

There is no dedicated CAS number search function in ecoQuery. However, you can simply enter the CAS number into the ecoQuery search bar, and if that CAS number is present in the ecoinvent database, the corresponding dataset will appear in the search results.

If you would like an overview of all CAS numbers present in the database, you can refer to the [Database Overview file](#). You can explore it in the following way:

- Navigate to the tab Undefined AO
- Column B lists the activity names, which you can search using keywords (e.g., “steel production”, “cement”)
- Column J lists the reference products
- Column C shows geographical coverage

- Column N provides an extended description of each dataset
- Column O contains CAS Registry Numbers where available

3 Regulatory Compliance & Reporting

Question	Answer
<p>Are older versions of ecoinvent (e.g., v3.6) suitable for calculating the GHG balance of previous years (e.g., 2019)? Or, in view of the improvement in data quality, is it necessary to use the new versions for previous years as well?</p>	<p>Many users choose to align the ecoinvent version with the reporting year; for example, using ecoinvent v3.11 (published in 2024) for FY2024 or v3.10 (published in 2023) for FY2023. However, it is important to keep in mind that there is always a time lag between data publication and the real-world conditions it represents.</p> <p>For instance, electricity data published in 2024 may be based on 2023/2024 energy statistics that reflect 2022 market conditions. Therefore, emission factors published in a given year do not necessarily correspond to the real-world conditions of that same year. There are valid arguments for different approaches.</p> <p>Using the same (latest) ecoinvent version for all reporting years:</p> <ul style="list-style-type: none"> - Ensures full comparability between footprints across reporting years. - Incorporates the most recent scientific findings (e.g., ecoinvent v3.9 integrated natural gas flaring data and updated methane emissions that were present historically but not previously captured in the database). - Provides methodological consistency. <p>Using the version published closest to the reporting year:</p> <ul style="list-style-type: none"> - May better reflect historical conditions (e.g., pre/post Ukraine war energy markets) - May capture technological progress between versions <p>We recommend comparing the emission factors relevant to your study across the ecoinvent versions you are considering. If you observe significant differences, investigate what drives these changes and assess whether the datasets accurately represent your</p>

conditions. Consider conducting a sensitivity analysis to quantify the impact of version choice on your results.

Ultimately, no database can perfectly reflect real-world conditions for a specific year. The appropriate choice depends on your specific reporting requirements and objectives. It is your responsibility to choose the approach that best fits your scope of work.

How can ecoinvent help to reduce the complexity or data labels aligned with CBAM regulation? (Regarding CBAM regulation for non-EU complex products manufacturer/integrator providing data to EU customers.)

CBAM has strict requirements for embedded emissions data. As stated in the EU's [CBAM FAQ](#) (Question 75), emission factors from LCA databases such as ecoinvent are not accepted for CBAM reporting. This is because CBAM's scope is much narrower than an LCA or a product carbon footprint: it includes only direct production emissions (and, for some sectors, limited indirect emissions). Using LCA-based data would therefore not match the CBAM methodology and would typically overestimate embedded emissions.

For non-EU manufacturers, this means that CBAM reporting must be based on primary, facility-specific data or, where allowed, the European Commission's default values. During the transitional period, estimations (including default values) may be used for up to 20% of the total specific embedded emissions of complex goods (CBAM FAQ, Question 39). This option applies only until the end of 2025; the CBAM definitive period will start on 1 January 2026.

While ecoinvent cannot be used directly as a source of emission data for CBAM compliance, LCA data may still support companies in assessing materiality—for example, understanding which inputs or suppliers are likely to drive emissions and therefore where primary data collection should be prioritized. However, the LCA values themselves should not be used for CBAM reporting.

At this stage, we cannot recommend using ecoinvent as a source of emission data for CBAM compliance. Non-EU producers and EU importers will need to establish direct data collection and reporting mechanisms that align with CBAM's narrower system boundaries.

Please note that we do not provide consulting services, and it is ultimately your responsibility to determine whether ecoinvent data is suitable for your specific needs.

For more information, you may consult the European Commission's [CBAM page](#), the [CBAM Questions &](#)

[Answers](#) document, and the [guidance on default values](#) for the transitional period.

Is there a way to extract FLAG GHG emissions from agricultural and forestry datasets, as required, for example, for submission of GHG inventories to the SBTi?

Currently, FLAG emissions are not reported separately in our database and must be calculated by users based on FLAG-related emissions within datasets and background processes.

We do, however, provide a supplementary file reporting FLAG emissions values related to land use change (LUC), beginning with version 3.10. This file is available on ecoQuery under Resources → Files: 'LUC-FLAG Emissions in Agriculture'.

4 Software, Licensing, Access, & Collaboration

Question

Answer

Is ecoinvent v3.12 available in SimaPro now?

Currently, SimaPro is still ingesting the data; consequently, it is not yet available. Please contact SimaPro directly to obtain more information regarding their release date.

How can I upgrade my license to have access to files? I have two commercial licenses, one purchased through iPoint and one through PRé Sustainability.

PRé Sustainability and iPoint users receive accounts created on ecoQuery. This means these users can access the raw data on ecoQuery, besides the SimaPro and Umberto tools.

Will there be changes to the pricing model for software tools?

We currently have no planned price changes for version 3.12 or for updates in general for existing clients. If you have an active ecoinvent license, updates to the database (v3.x) are included.

Can we view the data studies or only the results with a SimaPro license?

The access depends on the license type.

With a commercial subscription license purchased through PRé Sustainability (SimaPro), you will be able to view all data related to singular datasets, however, you will not have access to the Files (granting the ability to download the database in ecoSpold2 format and access several supporting files for different versions of the ecoinvent database) or Reports (a repository of additional information for selected projects).

Are you still looking at gaps with other databases? Are you trying to close them or join forces with other companies? Or are you somehow trying to connect the different databases to allow for rapid mapping or data transfer?

We consider the existing gaps in the ecoinvent database, but not in comparison to other databases. We are not looking to join forces, but we are investing in the harmonization of the LCA field, and we want to contribute to the interoperability of databases.

How do you assess the impact of your sales model on background data use, particularly in the context of national initiatives aimed at measuring and reducing environmental footprints?

ecoinvent is an internationally active not-for-profit organization devoted to supporting high-quality, science-based environmental assessments. We strive to provide high-quality, reliable, and transparent data to our users through publishing and maintaining the ecoinvent database. As a not-for-profit organization, all our benefits are reinvested into developing our product and our people internally.

If ecoinvent is used in the background of a national initiative's database, we carefully assess on a case-by-case basis how we can support such projects. We have already established successful partnerships with national initiatives and hope to continue with more partners when similar objectives and ways of working are aligned.

5 Documentation & Support

Question

Answer

Will you provide a document listing all updates?

All publicly available documents that summarize the updates in version 3.12 can be found on the [ecoinvent v3.12 release page](#). This includes the materials accessible without a license, such as:

- Report of Changes: An overview of the main updates introduced in the new release.
- Correspondence File: Shows how datasets changed between v3.11 and v3.12 (see the Status column: retained, renamed, replaced, deleted).
- Database Overview: Lists all datasets in the release and helps you understand which sectors were expanded or updated.
- LCIA Implementation Report: Describes how the LCIA methods are implemented in version 3.12, including assumptions, mapping, and methodological updates.

6 Technology & Innovation

Question	Answer
How is ecoinvent using AI to enhance the offering of datasets?	<p>We see a lot of value in AI technologies, both for the usage of our database and its creation process.</p> <p>We see all software becoming more agentic. This also applies to software used in the LCA space. Rather than having to rely on untransparent and unreliable output from an LLM, we want users to benefit from the flexibility and power of AI tooling backed by accurate and trustworthy data. To cater to this need, we will provide users of AI directly with data and insights that help them solve sustainability challenges at scale, starting with improved searching and matching functionality.</p> <p>Internally, we use these technologies in areas where they have the most impact and where we can validate the results to ensure transparency and data quality. That way we accelerate data creation but still can guarantee the quality that defines ecoinvent.</p>

7 Agriculture & Land Use & Animal Husbandry

Question	Answer
Is there a dataset with respect to Animal/Agriculture? Specifically Tallow by-products? Tallow oils and acids were part of waste, but is this still the perspective?	<p>'Tallow, unrefined' can be found as a ByProduct in the "treatment of slaughterhouse waste, rendering" dataset. This dataset represents a rendering plan, treating slaughterhouse waste to tallow, meat, and bone meal.</p> <p>The 'tallow, unrefined' dataset is a solid waste under the category of industrial wastes and represents tallow as a whole material (100% tallow), and does not list oils and acids as separate exchanges within the activity.</p>

8 Batteries & Electronics

Question

Answer

Any updates to datasets for IT? Servers, laptops, end-user devices, other IT equipment, etc.

There are no updates to IT datasets in v3.12, only a technical correction for printed wiring board datasets. However, we are actively working to improve the sector to update some components and devices, and to include new datasets in future releases. If there are any specific data gaps that you've identified, we would be interested to hear about them so that we might consider them for further data gap filling.

Are datasets related to electronic manufacturing implemented in version 3.12? For example, those related to the manufacturing and assembly of electronic boards (PCBs).

The v3.12 release does not contain any new datasets in the electronics sector. However, we are currently working on updating the sector for future releases.

For the PCBs, you can consider some pre-existing ecoinvent datasets. Some products in ecoinvent refer to unmounted printed wiring boards, and others to mounted wiring boards (= PCB). The datasets for the mounted printed wiring board include the mounting and assembly efforts.

I would suggest you refer to the Immediate Exchanges sheet in the [Database Overview](#) file. In this file and sheet, you can filter for the product name (column B) and then check the product information (column H).

Most datasets for the electronics sector are from version 2, so they might not represent the most up-to-date technologies.

The dataset for Printed Wiring Board in the current ecoinvent database is based on data from 2014. Is there a plan to update this information to reflect more recent PWB/PCB manufacturing?

We are currently working on updating the whole electronics sector to better represent more recent manufacturing processes. We cannot commit to a specific release date for these updates to be made available to users.

Will sodium ion batteries (or some of their components) be included in version 4?

We are working on developing partnerships to include datasets for components of sodium-ion batteries in our next release. However, we cannot commit to their release version yet.

9 Building & Construction

Question	Answer
Can you offer more details about the EN15804 waste indicators? What is meant by different ways of interpretation?	<p>In EN15804 +A2, the indicators describing waste categories refer specifically to waste disposed (i.e., waste leaving the system boundary for final disposal). In our datasets, the corresponding indicators are:</p> <ul style="list-style-type: none">- Hazardous waste disposed (kg): The amount of waste disposed that is classified as hazardous. In our modelling, this classification follows the ISIC class assigned to the activity by the data provider (e.g., ISIC 3822 for hazardous waste treatment and disposal).- Non-hazardous waste disposed (kg): The amount of waste disposed that is classified as non-hazardous. In our modeling, this classification follows the ISIC class assigned to the activity by the data provider (e.g., ISIC 3821 for non-hazardous waste treatment and disposal).- High-level radioactive waste disposed (kg): The amount of high-level radioactive waste generated and disposed as a result of the waste treatment activity.- Intermediate- and low-level radioactive waste disposed (kg): The amount of intermediate- and low-level radioactive waste generated and disposed as a result of the waste treatment activity.
Will the EN15804 add-on (ecoinvent v3.11) be updated also to v3.12 version? Could the EN15804 add-on be used with v3.12, concerning the impact assessment methods?	<p>The EN15804 system model is available in ecoinvent v3.12 and can be used together with the EN15804 LCIA indicators. You can find an overview of this system model in our Knowledge Base article: EN15804.</p> <p>The changes from version 3.11 to 3.12 are minor and described in the Report of Changes v3.12.</p>

10 Chemicals & Plastics

Question

Do you plan to add more data related to polymer composites, such as carbon fiber?

Answer

ecoinvent functions as a background database, primarily providing generic datasets. We are always working to improve our dataset coverage and have several ongoing projects at different levels of maturity that aim to collect data regarding composite materials and their processing.

Regarding carbon fibre, the dataset "carbon fibre reinforced plastic, injection moulded" might be useful, even though it specifically represents carbon fibre reinforced plastic for use in aircraft manufacture.

Regarding carbon fibre itself, we acknowledge its importance and can confirm it is under consideration for future database releases. However, at this time, we are unable to provide a specific timeline for when this addition might occur.

Where are ecoinvent up to with modelling of elastomers such as SEBS?

We recognize the growing importance of elastomers and are working to expand and improve our coverage in this area. In version 3.12, we added one new synthetic rubber category: emulsion- and solution-polymerized styrene-butadiene rubber, which is a typical elastomer. However, for SEBS specifically, we are unable to provide a specific timeline for when this dataset might be introduced.

Could you please delve more into the six categories substituting the datapoint "chemical, organic"?

This specific topic is covered in Chapter 5.6 "Data for Generic flows: Chemical, Organic, Replacement" in the [Report of Changes 3.12](#), including information on the replaced and newly added datasets and flows. To answer your question, a brief summary of Chapter 5.6 is provided below; for full details, please consult the complete chapter.

Version 3.12 introduced new data and flows to improve user experience and address data gaps for organic chemicals. Specifically, the new data aim to allow users to replace the more generic "chemical, organic" flow that is excluded from version 3.12, by covering several product groups that were previously uncovered, including:

- Chemical, organic, basic precursors and materials: This flow represents an unweighted average of twenty to thirty organic substances that are key building blocks and materials in the chemical sector available in the ecoinvent

database. This product flow is considered the closest match to the “chemical, organic” flow from earlier releases.

- Chemical, organic, alcohols: This flow represents an unweighted average of twenty to thirty alcohol chemical substances available in the ecoinvent database.
- Chemical, organic, aromatics: This flow represents an unweighted average of twenty to thirty aromatic chemical substances available in the ecoinvent database.
- Chemical, organic, carboxylic acids: This flow represents an unweighted average of twenty to thirty carboxylic acid chemical substances available in the ecoinvent database.
- Chemical, organic, esters: This flow represents an unweighted average of twenty to thirty ester chemical substances available in the ecoinvent database.
- Chemical, organic, unspecified: This flow represents an unweighted average of a diverse range of organic chemicals and materials (i.e., more than a hundred). This dataset includes all unique entries from key organic chemical groups in version 3.12. Therefore, this product flow provides an approximate average of organic chemical flows derived from a large and diverse sample.

Generic flows are a practical way to address data gaps, but LCIA results of products and services that close data gaps with proxies should be interpreted with care, as substances within a group may differ from the underlying average. Therefore, in case you have used them in the past, we recommend reviewing your data and, where possible and appropriate, replacing generic or proxy entries with substance-specific data for the given functional group.

Are you planning to add datasets regarding enzymes, fermentation and, general, biotech processes?

We recognize this data gap and the importance of better coverage of biobased materials from fermentation processes, enzymes, and beyond. We are currently building capacity in this area, but we are unable to provide a timeline for any potential database expansion.

Currently, the database includes a few datasets in this domain, namely generic [enzymes production](#) data as well as enzymatic processes such as [glucose production](#) and ethanol production from fermentation of different feedstocks ([link](#)). As a background database, ecoinvent

primarily provides generic datasets intended to help users model product processes using foundational data.

Any future update about chemicals from fermentation process and biobased? And about biobased active ingredients used in the cosmetic sector?

We recognize this data gap and the importance of better coverage of biobased materials from fermentation processes. We are currently building capacity in this area, but we are not yet able to provide a timeline for any potential database expansion.

Do you have plans to include more processes regarding circular economy for plastics?

The ecoinvent database includes several datasets for plastic recycling processes, covering both mechanical and chemical recycling methods for various plastic types. In version 3.11, we expanded coverage for mechanical recycling of plastics in Europe, as well as hydrothermal treatment in the UK, as described in the [Report of Changes v3.11](#). Additionally, in version 3.12, we integrated some of these recycling flows into existing datasets, as detailed in the [Report of Changes v3.12](#).

You can explore available ecoinvent datasets through [ecoQuery](#) or by referring to the [Database Overview](#). This overview provides a comprehensive list of all datasets in the current version, with filtering options by activity name, product name, HS2017, ISIC, and CPC classifications, geographies, and more. Additionally, the "Product Information" column provides a short description for each product or service in the database, including information about its technical and physical characteristics, possible applications, and proper usage.

We recognize the growing importance of circular economy approaches in the plastics sector and are working to expand and improve our coverage in this area. At this time, we are unable to provide a specific timeline for when additional datasets might be introduced.

Is it correct that in v3.12 the plastics footprint increased due to inclusion of GHG release during petrochemical precursor extraction?

We can't make firm statements about the impact of changes in plastics overall. The results depend on factors such as the region of production, changes in supply chains in upstream operations, and data maintenance, among others.

Assuming European production, scores are broadly stable rather than showing a clear increase. Several plastics datasets were regionalized, replacing the former Rest-of-World aggregates. This can shift results up or down for the newly specified regions when compared to the previous Rest-of-World. The overall global picture

remains essentially the same, just more geographically detailed.

Taking the statement, "... due to inclusion of GHG releases during petrochemical precursor extraction", we can state confidently that this is not the case for most plastics in the ecoinvent database. In version 3.12, raw material inputs for petrochemical production were updated, but no new extraction-stage GHG emissions concept was introduced. Methane emissions from extraction were added in version 3.9 and have been applied consistently since then. The only plastics datasets in ecoinvent for which these methane emissions first appear in v3.12 are polystyrene (EPS, GPPS, HIPS) and polybutadiene, because they were previously based on aggregated LCIs from older PlasticsEurope ecoProfiles rather than unit process data. As these ecoProfiles are static, often use different background databases, and predate the methane emissions reported by the International Energy Agency (IEA), they likely did not include such emissions, although this cannot be confirmed given their aggregated nature.

To examine the detailed LCIA results for datasets in ecoQuery, select the LCIA method in the drop-down menu of the Impact assessment tab. After selecting the indicator, you can open the Contributors to impact score by clicking on the arrow on the right. Here, you can see the Relative contribution (%) of the exchanges to the total impact of the activity, as well as the Impact expressed as the absolute value.

Could you please advise which chemical I should use to represent natural rubber latex in the LCA of surgical gloves?

At present, the ecoinvent database does not include datasets covering natural rubber production or processing from rubber trees. Currently, ecoinvent only includes datasets for synthetic rubbers. Please note that ecoinvent is a background database, which primarily provides generic datasets intended to help users model product processes using foundational data.

We acknowledge this data gap and understand the importance of covering natural rubber production, from tree growth and harvesting to latex processing.

11 Energy

Question

Are there any plans to develop electricity datasets for the US that are aligned with eGrid boundaries?

Answer

We acknowledge the value of such an update. However, there are currently no plans to pursue this, as it would require changes to the methodology used for managing U.S. eGRID data in the ecoinvent database. Our U.S. sub-regional electricity market datasets are already updated using the latest detailed eGRID statistics. For version 3.12, we incorporated comprehensive data from 2023 for the U.S. electricity market, structured according to NERC regions.

Why does the electricity GHG intensity in some countries, like Germany, appear higher in ecoinvent v3.12 than in v3.11, even though the updated version reflects conditions for 2022?

The GHG intensity of electricity has increased in some countries in ecoinvent v3.12 because electricity production from oil, hard coal, and lignite increased in 2022 (the reference year for Germany in v3.12) compared to 2021 (the reference year for v3.11). Additionally, electricity imports to Germany from the Netherlands, Luxembourg, Norway, Denmark, and the Czech Republic also increased in 2022 relative to 2021, which also impacts GHG intensities. The reference year 2022, as used in v3.12, was a particularly challenging year for Europe due to the energy crisis triggered by the Russia–Ukraine conflict, which contributed to the observed increment in fossil fuel use for electricity production, resulting in an increment in scores across many European countries in 3.12.

In version 3.11, the electricity datasets for India included both regional and national grids, but since India operates a unified national grid, the regional datasets were often considered inaccurate or redundant by the industry. Could you share what updates or improvements have been made to these datasets in version 3.12?

We use complete national electricity statistics from the Indian Ministry of Power, and these statistics continue to be organized around five geographical regions: Northern, Western, Southern, Eastern, and North-Eastern. While India has operated a single synchronized national grid since 2013, the Ministry of Power and its technical bodies maintain these regional divisions because significant differences persist in the generation characteristics of each region ([more details here](#)). These differences include: fuel composition, renewable energy penetration, hydropower availability, and demand profiles.

Although India's grid is electrically unified, it remains differentiated in its underlying resource structure. This makes regional distinctions both meaningful and necessary for accurate life cycle assessment modeling. The v3.12 update reflects fiscal year 2022–2023 data and confirms that these regional characteristics remain relevant based on current official statistics ([more details](#)

[here](#)). We also provide the "market group for electricity, high voltage, IN" which aggregates all regional Indian electricity markets into a single, nationally-averaged geography.

For comprehensive information on all changes in this version, please refer to our [Report of Changes](#).

Any updates on solar PV operational emissions? There is a dataset for Switzerland, but is there a global emission factor?

Solar PV has virtually zero direct emissions during the operational phase, as there is no fuel combustion during electricity generation. The emission factors you see in ecoinvent datasets represent full life cycle impacts, which can include cradle-to-grave (including module and balance-of-system component manufacturing, installation, operation and maintenance, and end-of-life treatment) or cradle-to-gate (excluding end-of-life) perspectives. The emissions vary depending on which system boundary is applied. All of these impacts are allocated per kWh of electricity produced over the system's lifetime.

Regarding geographic coverage, we have datasets for Switzerland, and we provide sixty-three geography-specific datasets for solar PV electricity production, plus a Rest-of-World (RoW) dataset that represents all geographies not covered by those sixty-three specific regions.

The activity "electricity production, photovoltaic, 570kWp open ground installation, multi-Si" includes sixty-four datasets covering various geographies, including Argentina, Australia, Austria, Belgium, Canada, and many others.

You can select the specific geography relevant to your study and check the "emission factor" (impact score) for your desired impact category, such as climate change, cumulative energy demand, or others, using ecoQuery.

We are planning updates to the PV section in the future, but we cannot commit to a specific timeline. We'll share any updates when they're ready.

Tell us about the general updates for energy and energy infrastructure.

In the energy sector, alongside the annual electricity-market update covering 142 regions, several major revisions are currently underway. These include:

- Updates to the electricity and thermal efficiencies of power plants
- Updates to allocation factors for CHP power plants, and
- Updates to technology-split factors, with particular attention to fossil-based power plants.

The energy team is actively working on these improvements, which will be released once they have been fully reviewed.

As for energy-infrastructure datasets, a number of updates and the introduction of new datasets, especially for PV and wind technologies, are in the pipeline. We cannot provide a firm timeline yet, but we will share more information as soon as these datasets are ready for publication.

Are there datasets for different PV materials? Not just mono/polycrystalline, but also perovskite etc.

ecoinvent has datasets for different PV panel types. Photovoltaic panel production is split into:

- Single-Si (monocrystalline silicon)
- Multi-Si (polycrystalline silicon)
- a-Si (amorphous silicon)
- CdTe (cadmium telluride)
- CIS (copper indium selenide)

These are represented across different installation types: facade, flat-roof, slanted-roof, and open ground installations. You can read more about our energy datasets here.

Perovskite solar cells are not included in the current version of the database. Although they are an emerging technology with promising efficiency potential, ongoing research continues to highlight challenges related to long-term stability, durability, and large-scale industrialization. As these technologies mature and become more standardized, they may be considered for inclusion in future updates. At this time, we cannot provide a timeline.

To explore the available PV datasets, we recommend using the [Database Overview](#) file. If the exact material name does not appear, searching for synonyms or broader chemical terms can help identify related or relevant datasets.

12 Forestry & Wood & Paper

Question

Answer

Are there upcoming updates to land use change emissions in the forestry sector? More

Currently, we are not actively working on modeling land use and land use change-related emissions specifically for forestry activities. However, we recognize this topic as

specifically for pulpwood processes which are all "sustainable forest management" at the moment?

important and would like to address it in future database updates.

Regarding the "sustainable forest management" classification: this term indicates that the forest is regenerated after harvesting, meaning no net forest coverage is lost. While this approach maintains forest area, we understand that the full picture of land use-related emissions in forestry is more nuanced and warrants further development in our methodology.

Are you still open to forestry updates from other countries?

We are interested in initiatives to update forestry data in different geographies. If you have data you would like to publish in the ecoinvent database, please let us know, and we'll share more information about the data submission process. For an overview of datasets available in the ecoinvent v3.12, please refer to the [Database Overview](#) file.

Was land use data scrutinized for the forestry processes in other countries? Primary data we worked with indicates that the land occupation might be underestimated in ecoinvent datasets for Scandinavian countries, and possibly other countries as well.

We didn't update land use data of the existing forestry datasets for v3.12.

To explain differences in land occupation values between the new Finnish and existing Swedish forestry datasets, the Finnish datasets calculate land occupation using the total annual harvested volume of each species (m^3/a) and the land area used for the species production (m^2). In contrast, the Swedish datasets calculate land occupation by multiplying land transformation (m^2) by rotation period (a). We plan to harmonize these methodologies in future database versions.

For detailed calculations, you may refer to the mathematical relations of the flows. You can find them in the spold file of the dataset, which can be accessed by selecting a dataset in ecoQuery → Export → Unit Process, and opened with any text editor.

In this version, were there any updates for the paper industry, or in previous versions, that are significant and can be used for paper packaging?

Regarding version 3.12: We published new forestry data for Finland in this release, including the harvesting of pulpwood. Since pulpwood is an input to paper production, these updated datasets will provide more regionally accurate and up-to-date data for life cycle assessments involving the Finnish forest and paper industry. However, we did not publish new datasets for paper products themselves in v3.12.

Regarding version 3.11: This version included new and updated data for various paper products manufactured in Europe, which would be more directly relevant to paper

packaging applications. You can find detailed information in the [Report of Changes v3.11](#).

If you are interested in the database versions prior to 3.11 and 3.12, you can [find overviews of all the versions here](#).

13 Fuels

Question	Answer
Regarding the emission factor for "natural gas liquids production", does the value (let's say 0.5kg CO2e/kg) refer solely to the production of NGL? Or does it also include the emissions which occur when the NGL is burned?	The natural gas liquids production dataset is specifically only for production and not its combustion/burning post-production. The activity of the NGL production dataset includes the separation of NGLs (such as ethane, propane, butane, and pentanes) from raw natural gas through cryogenic or absorption processes.
What are your projections for biofeedstocks (e.g., UCO, which is converted into bionaphtha and biopropane)?	We don't currently have drop-in fuels and petrochemical feedstocks in ecoinvent. We do project a different impact given the increased demand for hydrogen for the hydrotreating of bio-feedstocks like used cooking oil, and the major source of hydrogen still being SMR. We are working on this topic and plan to include these in a future release of ecoinvent database.
Are there any updates related to hydrogen fuel production and nuclear power?	<p>Regarding nuclear power, the datasets remain unchanged in version 3.12. There are no updates in this release. Work is in progress to revise the nuclear power sector and introduce a higher level of resolution.</p> <p>Regarding hydrogen, production is still represented through steam-methane reforming (SMR) and coal gasification. These routes remain available in v3.12 and are unchanged from the previous version. Additional hydrogen pathways, including electrolysis, are planned for a future release as part of the broader expansion of hydrogen technologies.</p>

14 Metals & Minerals

Question

In the updated aluminium dataset, was the correction applied to include emissions from coke calcination?

Answer

In version 3.12, we corrected the anode production datasets by replacing petroleum coke with calcined petroleum coke across all geographies, which more accurately reflects the actual production process. Currently, all datasets for [anode production, prebake, for aluminium electrolysis](#), and [anode production, paste, for aluminium electrolysis](#), reference the [Chinese calcined petroleum coke market dataset](#), as this is the only regional dataset available in the database at this time. This decision was made in agreement with the data provider, the International Aluminium Institute.

15 Textiles

Question

Are there any changes to the datasets of recycled rubber, natural rubber, synthetic textile, and natural textiles?

Answer

There are no updates to recycled or natural rubber datasets in version 3.12. However, one new synthetic rubber category has been added: emulsion- and solution-polymerized styrene-butadiene rubber.

For textile datasets, version 3.12 includes several updates to the textiles sector. New hemp datasets have been introduced based on primary data from French hemp producers and processors, covering agricultural cultivation, decortication, and cottonization processes. Additionally, European flax datasets have been updated to include new by-products from the scutching process, along with other minor documentation improvements. Finally, existing cotton and polyester datasets also received minor corrections to eliminate identified errors and inconsistencies.

For more detailed information about all updates, please refer to the [Report of Changes v3.12](#).

16 Transport

Question	Answer
In transport, are there now also minimal boundaries based on GHG Protocol?	<p>Yes. The Corporate Value Chain (Scope 3) Standard defines minimum boundaries for both upstream and downstream transport and distribution, as shown in Table 5.4.</p> <p>In ecoinvent, transport datasets already match this definition. They cover the direct operation of the transport service, including fuel use, tailpipe emissions, upstream fuel production, and vehicle operation flows. This aligns with the required minimum boundary for Scope 3.</p> <p>For example, the dataset “transport, freight, lorry, 16–32 metric ton, EURO6” includes:</p> <ul style="list-style-type: none">- Diesel consumption- Tailpipe emissions (CO₂, CH₄, N₂O, NO_x, PM, etc.)- Upstream diesel production and distribution (“well-to-tank”)- Tyre and brake wear, vehicle operation, and maintenance <p>Together, these represent the operational emissions of the transport service, the elements required by the GHG Protocol minimum boundary.</p>

17 Waste Treatment & Recycling

Question	Answer
Has the landfill leachate water use been fixed in v3.12?	<p>Some water can be lost during the transport of leachate from the sanitary landfill to the wastewater treatment plant. This water loss was erroneously omitted in version 3.10, and a fix was deployed in version 3.11 to include this loss to surface water. You can read about this in Report of Changes v3.11. If the impact assessment method or LCA software you employ characterizes water emissions to surface water as gained water, you may see lower or even negative water use scores. This is not the case in ecoQuery, as only evaporation is characterized</p>

as water loss, as described in our [LCIA implementation report](#).

Do you plan to add biochar production datasets in future versions?

We are committed to continuously improving our database by adding new datasets with each release. Biochar is indeed an important material, and we plan to include it in a future release. However, since our development pipeline for upcoming releases is not yet finalized, we cannot currently provide a specific timeline for the availability of biochar production datasets.

Does ecoinvent provide support to help users understand which emissions should be allocated to pre-processing or the recycling process, specifically regarding the GHG Protocol? E.g. is pre-processing only sorting, or more steps?

ecoinvent does not follow a universal rule regarding the exact cut-off point and may deviate from the recommendations of the GHG Protocol.

The ecoinvent system model "[Allocation, cut-off by classification](#)" (the cut-off system model) is based on the recycled-content, or cut-off, approach. In this system model, wastes remain the producer's responsibility ("polluter pays"), while recyclable materials are available burden-free to downstream users. This incentivizes the use of recyclable products.

Recyclable materials are cut off from their production activities through the use of special datasets named "product name, recycled content cut-off." These datasets have no inputs or emissions and are therefore burden-free. In the [Database Overview](#) for version 3.12, you can find all of these datasets in the "Cut-Off AO" tab by searching in column D ("Activity Name"). There are almost 100 such cut-off datasets.

The cut-off point is located at the end of the activity producing the recyclable material. The secondary use cycle begins with the pick-up of the material from the producer, and transport to the processing site marks the beginning of the downstream supply chain. Any process that uses a recyclable material as an input, e.g., a recycling process, receives the burden-free material from its market, which links to the corresponding "recycled content cut-off" dataset.

Regarding what counts as "pre-processing" versus "recycling": this depends on the specific material and supply chain, as ecoinvent does not prescribe a specific rule. The system boundaries of a dataset typically follow the processing steps performed in the modeled plant. For example, for plastic recycling activities, some datasets include sorting because the plant on which the data is based performs this step in-house, while other datasets exclude sorting because the plant's input is already sorted plastic.

You can follow the supply chain for a specific material in ecoQuery. Once you see that the product is supplied to or from a “product name, recycled content cut-off” activity, you know this is where the cut-off is applied.

Why is there now only the location ‘Rest of World (RoW)’ available for some datasets, where it was ‘EU without CH’ in previous versions? E.g., treatment of waste polyethylene for recycling.

The dataset referred to was replaced in version 3.11 when we introduced new mechanical recycling datasets for plastics, specifically in Europe. The dataset was therefore removed to make way for these newer datasets.

Where could I get information about the described modeling debate for waste definition between the ecoinvent database and other LCA modeling conventions?

This topic refers to the different implementations of waste inventory indicators in the EN15804 system model. This topic concerns only those using this specific system model, and it does not affect the waste handling in the database generally. We engaged with specific users via our support channel.

The discussion concerns the interpretation of the relevant standard regarding how to implement these waste inventory indicators properly. A couple of users were kind enough to share their interpretations. We highly appreciate this, and we took notes to see how this topic should be handled in the future. In ecoinvent, the inventory indicator flows are used as a counter whenever a waste treatment process is triggered, and the entire mass of the treated waste is counted, including water and subsequent treatment steps.

For this year's release, we ensured our implementation of these indicators was consistent throughout the entire database so that our users can get more precise and well-documented results. You can read more about how we implement the waste inventory indicators in the EN15804 system model in the respective report, available on ecoQuery, under the "Reports" section.

Some processes, such as gasification and pyrolysis, use municipal waste as inputs. Have you considered these, or are there models that could be used as inputs to represent this waste?

The waste sector in the ecoinvent database does not currently cover pyrolysis or gasification as stand-alone treatment processes. The treatment processes for municipal solid waste are currently incineration with and without energy recovery, burning, different landfills, and open dumps. We are always looking to expand our data coverage in terms of new technologies and geographical coverage, and pyrolysis datasets are definitely of interest to us. We are, however, not currently in a position to recommend specific models for pyrolysis or gasification of municipal waste.

What is the waste indicator introduced which is missing in earlier version?

This topic relates only to users of the EN15804 system model and standard. This model reports on the total disposed mass of hazardous waste and non-hazardous waste throughout your supply chain.

In ecoinvent, these are elementary exchanges included for every waste treatment step. It then acts as a counter, where every time a treatment process is utilised in the supply chain, it tracks the "non-hazardous waste disposed" or "hazardous waste disposed" in the inventory. These are the exchange names. They do not represent additional mass, nor do they affect the impact assessment.

Some treatment processes did not yet have these exchanges included, and as such, they have been added for version 3.12. You can find the overview in the [Report of Changes](#), specifically section 9.2.8.

Have ecoinvent also modified end-of-life credit for municipal waste incineration?

There have been no changes to how end-of-life credits for municipal waste incineration are handled in version 3.12.

It's worth noting that the credits or burdens depend on the system model you're using. In the cut-off system model, the waste generator bears the burden, and the energy recovered from the incineration comes burden-free. The incineration is thus not credited by the energy generation. The consequential system model handles this differently, applying substitution logic for recovered energy and materials.

For more details on how the different system models treat waste and recycling, see our Knowledge Base page on [system models](#).

18 Version 4 & Roadmap

Question

Answer

What format will the datasets of version 4 be in (e.g. ecospold or ILCD format?)

At this stage, we are still exploring which format version 4 will be published in. During the beta phase, we are gathering input from users to understand which format best supports their workflows. Our goal is to make implementation as easy as possible, and for this reason, different options are currently being tested.

In the past, there have been issues with water balances on various unit processes (e.g. recycled graphic paper in ecoinvent v3.10). Could you comment on any improvements on water balances, especially in view of the update to version 4, including AWARE compatibility?

We are continuously working to improve the balances of unit processes. For more information on v3.12's improvements, please refer to the [Report of Changes](#). The error in the water balance of recycled graphic paper production was corrected for v3.11.

Regarding AWARE, we recognize the importance of water balances at the unit process and supply chain level for a meaningful implementation of the method.