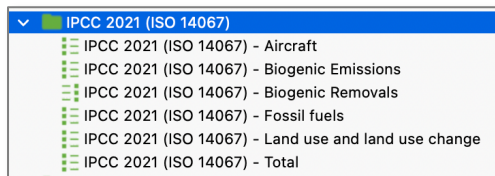


Questions and answers from the ecoinvent 3.12 Webinar for openLCA 28th January 2026

I am starting to study how to calculate PCFs. Could you explain how we should start using ecoinvent in openLCA?

Because PCFs are "kind of" a sub-category of LCAs it is possible to create product systems and processes in the same way as for LCAs inside openLCA, but to only calculate the impact categories that are needed for the PCF. Of course, most PCFs also need to follow certain standards and product category rules which is independent of the software or the database. The method "IPCC 2021 (incl. biogenic CO₂)" from the ecoinvent LCIA methods is the closest to PCF compliance (according to ISO 14067). For full compliance or for mandatory sub-grouping of impact results, it is also possible to create new impact categories in openLCA or to inspect all impact results from "IPCC 2021 (incl. biogenic CO₂)" and group them as wished. In the openLCA LCIA methods package, we have grouped the total impact category into sub-categories for easier compliance with ISO 14067. This can be also done manually by the openLCA user inside the software, if wanted. Characterization factors can be copied and pasted between different impact categories. And also new impact categories can be created or added to a method if needed.



If some of the items are not available, how should we model the specialized items?

This question cannot be answered in general. Usually, the own modelled process come with inventories from secondary data (literature, patents) or from primary data (own measurements) or from other LCA databases. Processes can be easily modelled from scratch inside openLCA, but the largest and most time-consuming challenge is to get the unit process data (inputs materials, output materials, waste, recyclable materials, secondary materials, energy) from somewhere.

If an independent reviewer rebuilds or reruns the LCA using the previous ecoinvent version (3.11) instead of 3.12, would they reach the same conclusions?

It depends on the processes that are used and if these processes got major changes or not. In most cases, the changes of, e.g., climate change impacts between ecoinvent 3.11 and 3.12 will be only in the few percentages range and it will not change the major decision making / the major outcomes and conclusions of a LCA study. But there might be some exceptions where large differences can occur, especially in less "stable" impact categories different than climate change. For example, the toxicity impact categories usually have a very large uncertainty. If a correction inside a process is done and another toxic direct emission flow is added or deleted, might change the outcome of the toxicity impacts by orders of magnitude. It always depends on the processes and the impact categories and the question cannot be answered in general. But as mentioned before, usually the climate change impacts are quite "stable" and for most processes do not significantly change the conclusions with ecoinvent 3.11 or 3.12 as the background database.

If there is a missing material entry (e.g., PBT) within ecoinvent, is there a process available where we can request this to be included in the next version update?

A request for including a process into a next version should always be made directly to ecoinvent. We don't know their priorities of deciding which materials need an update or inclusion first, but the support from ecoinvent will give an answer to this and we have very good experiences with the ecoinvent support. On the ecoinvent website, you will find a link for "Contact us".

When high-quality process data for missing materials is already modelled and available from the users, it is also possible to request that this data will be included into ecoinvent. Data can be submitted to ecoinvent here: <https://ecoinvent.org/data-submission/>. And the technical team can be contacted here: <https://ecoinvent.org/contact-us/>

Are there new processes in general and expansion of geographical regions?

Yes, there is 1256 new processes in ecoinvent 3.12 compared to 3.11. Regionalization (expansion of data sets into new locations/regions) was done for 18 new geographies for natural gas liquids. Chemicals and plastics got the largest improved regional coverage, especially for Asia and Americas. A lot of data got also regional expansion by recontextualization (see page 58 in the Report of changes).

More infos are here: <https://ecoinvent.org/ecoinvent-v3-12/>

More details are here: <https://support.ecoinvent.org/ecoinvent-version-3.12>

The report of changes is here:

<https://support.ecoinvent.org/hubfs/Knowledge%20Base/Database/Releases/3.12/Change%20Report%20v3.12.pdf>

Does ecoinvent provide future-oriented electricity mix datasets (e.g., aligned with energy transition scenarios)?

No, but the "premise" tool can do this, which will transform the ecoinvent database into the future using Integrated Assessment Models (IAMs).

The original publication: <https://www.sciencedirect.com/science/article/pii/S136403212200226X>

premise also comes with extensive documentation: <https://premise.readthedocs.io>

premise can be also imported into openLCA: <https://premise.readthedocs.io/en/latest/load.html#as-simapro-csv-files-for-openlca>

When we have more openLCA users that are interested in using premise inside openLCA, we will consider in the future providing zolca files directly. Currently, the import into openLCA can only be done by advanced users and this import is also not compatible to the ecoinvent Nexus databases, so that existing models from an ecoinvent Nexus database cannot be easily transferred into a premise database.

Are there any updates about manufacturing datasets? Last year, using v3.11, it was not easy enough to, for example, model pumps manufacturing. And please another question if direct air carbon capture processes are available now?

As far as I know there is no DAC currently in ecoinvent yet, most likely because this technology is not yet widely available on the market and it might be not possible to get any primary data from the very few manufactures. This is just an own assumption. The best way to check for updates is the Report of changes: <https://support.ecoinvent.org/hubfs/Knowledge%20Base/Database/Releases/3.12/Change%20Report%20v3.12.pdf>

or to go to ecoQuery and search for new databases inside version 3.12. Finding the processes and seeing the process descriptions is also possible before having the 3.12 license.

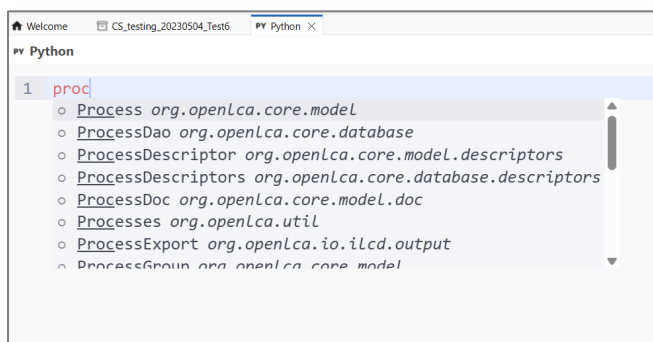
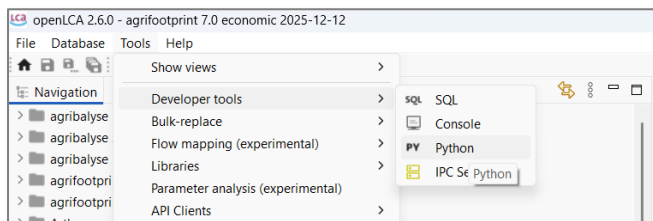
Is there a specific dataset for purchasing cloud storage (Onedrive, Google drive etc.)?

As far as I know there is none. The best way to check for updates is the Report of changes: <https://support.ecoinvent.org/hubfs/Knowledge%20Base/Database/Releases/3.12/Change%20Report%20v3.12.pdf> or to go to ecoQuery and search for new databases inside version 3.12.

Could you explain the new python integration?

This seems to be a question that is related to openLCA 2.6. In the newest version 2.6, the integrated Jython/Python editor is improved by a CodeMirror 6 editor with code completion and run keymap. openLCA now incorporates a language-specific code-completion aid that will help users typing code by displaying available options and making the workflow faster.

For example, try typing process in the python editor:



You can find an openLCA Jython/Python manual here: <https://greendelta.github.io/openLCAJython-manual/introduction/index.html>

You can also connect over an IPC server to openLCA and use the API and use python or other programming languages: <https://greendelta.github.io/openLCA-ApiDoc/>

Does the market for polypropylene granulate in RAS represent the production mix or the consumption mix for that region? Since its input is 100% RAS, which doesn't include China.

This question is better to be answered by ecoinvent, since it is related to a specific data set modeling, but we took a look. In ecoinvent 3.12 there is the dataset " market for polypropylene, granulate | polypropylene, granulate | Cutoff, U" for the location of China (CN). Because ecoinvent 3 does not allow overlapping regions, and because the location of China is the only process for the market for polypropylene granulate inside the Asian region, the RAS (Region Asia) market process for polypropylene granulate does not exist, but the RAS without CN (Region Asia without China) market process exist. So it exists:

market for polypropylene, granulate | polypropylene, granulate | Cutoff, U - CN

market for polypropylene, granulate | polypropylene, granulate | Cutoff, U - RAS without CN

Both markets contain generic transport processes as the input, as well as the non-market production processes as the input. The market of CN is supplied by a production process in CN with energy provider from CN. And the market of RAS without CN is supplied by a production process in RAS without CN, which has all energy provider from Asia (RAS) in it, except the one from China (CN).

Both markets (CN and RAS without CN) represent the consumption mix and the non-market production processes represent the production mix. Of course, in this specific case, the consumption mix and the production mix are nearly the same, because the markets and the production processes are supplied by the same single location (either by only RAS without CN or by only CN). But the markets also have some generic transport processes in it, which could be seen as the difference between production and consumption mix here. It is not clear from the activity alone, why the consumption mixes (markets) have no other production inputs due to import, export or other production regions. This should be asked toecoinvent directly.

Have the emission factors typically increased or decreased from version 3.11?

It cannot be answered in general and one would need to compare all similar processes in 3.11 with 3.12. Typically, the climate change impacts are similar or smaller than in previous versions, because the energy mixes have equal or lower carbon footprints. For other impact categories, the impacts can drastically change in cases where errors are corrected. In any case, the newer database will always be more reliable, with less errors and with more refined data than the previous versions. Some version might have also increased emissions to the previous one, as it was the case betweenecoinvent 3.9 and 3.10 because the oil and gas supply chains got significant updates and corrections and emissions were underestimated in the past due to the underestimation of fugitive gas emissions in the extraction processes. Sometimes, newer and more accurate measurements or data can lead to corrections that increase the emissions of the same product system from one version to another, but in many cases or in many versions the emissions stay similar or decrease. There is not a general answer possible, but we recommend to use always the latest available data.

How can I find out if the processes have received new updates? Is this information stored in the data sheet? Is it directly visible in ecoQuery?

This can be seen as a quick overview in the correspondence file fromecoinvent:

<https://support.ecoinvent.org/hubfs/Knowledge%20Base/Database/Releases/3.12/Correspondence%20File%20v3.11%20-%20v3.12.xlsx>

Or in more detail inside the Report of changes:

<https://support.ecoinvent.org/hubfs/Knowledge%20Base/Database/Releases/3.12/Change%20Report%20v3.12.pdf>

Another possibility is to create a free ecoQuery account (or using an existing one) and look at the process descriptions in the previous version and the current version. The process description and the year of the process will be different if there is significant updates.

What should practitioners be aware of when migrating LCA models fromecoinvent 3.11 to 3.12?

There is nothing that practitioners should be really aware of, since it is always better to use the most recent and up-to-date data. For manually updating the own models in openLCA, we have a small guideline here:

<https://nexus.openlca.org/ws/files/38955>. In the future, we will also support an automatic way of updating the own user models. But keep in mind that the manual way is the most transparent way of updating. Even if the provider in the own processes have to be manually set again, it is possible to look at the same time for better fitting provider from the new ecoinvent version.

I am currently using ecoinvent version 3.11 and have noticed that some processes are marked as obsolete. I would like to know whether these obsolete processes will be updated or replaced in ecoinvent version 3.12.

ecoinvent also has a freely available correspondence Excel file to see the differences between processes in the previous and the current version. In this file, it is possible to see if a process got updated, replaced, deleted or is unchanged. You can find the link here: <https://support.ecoinvent.org/ecoinvent-version-3.12>.

The link to the file is on that support page, but also here:

<https://support.ecoinvent.org/hubfs/Knowledge%20Base/Database/Releases/3.12/Correspondence%20File%20v3.11%20-%20v.3.12.xlsx>

We have bought originally version 3.10, but we did not buy the maintenance for each year. To update to 3.12, should we buy the full version or just the maintenance will allow us to get it?

In the case of a perpetual license, it is possible to buy the missing maintenance years, which would be two years in this example and you would get access to 3.12. It is also possible to buy a new perpetual license, but this is usually only better/cheaper if several years of maintenance are skipped and not only two. In the case of yearly licenses, it is different, because the yearly license is always for the current ecoinvent version and without maintenance, so that in the next year simply a new yearly license is bought. For more questions related to this, please ask our Nexus support (nexus@greendelta.com).

Will processes made in openLCA 2.5 with ecoinvent 3.12 work in openLCA 2.6?

Yes, all processes that are created with an earlier version of openLCA will always work in the newer versions. The update of the software does not touch or change any processes inside database, since the databases and the software are stored separately. Whenever you update openLCA to a newer version, your databases stay in the same folder on your computer. Sometimes, when the openLCA software got an update that includes new features, it can happen that when you open one of your databases in the new version that a popup window appears and telling you that the database will be updated. This usually means that the database will be made compatible to the newer openLCA version. Of course, processes or inventories will never be touched. But it can happen that for example new elements are added to the database, so that's why each database would need an automatic and quick update. When the popup window appears, the user will also be asked to back up the database first. Once the database is updated to the newer version, it cannot be easily opened (only with our help) in an older version anymore. This is usually no problem, because it is highly recommended to always use the latest openLCA version. Also, a lot of openLCA versions come without an update of the database format/structure, so that no popup window appears and the database can be read in the old and in the newer openLCA version.

In short: Yes, the processes made in openLCA 2.5 with ecoinvent 3.12 will work in openLCA 2.6. Please always keep your openLCA software version up to date, because a newer version means not only new features, but also corrections of bugs.

Is IPCC AR6 integrated as an impact category?

Yes, IPCC AR6 refers to the IPCC 2021 report and the impact methods are included in the ecoinvent LCIA methods implementations (directly included in our ecoinvent 3.12 Nexus databases), as well as in the openLCA LCIA methods packages. ecoinvent also has an overview page for the different IPCC methods and impact categories included: <https://support.ecoinvent.org/guidance-on-ipcc-methods>

Also, some small corrections of the characterization factors are done in the newest ecoinvent 3.12 database. The changes can be found in the ecoinvent LCIA Implementation Report (<https://support.ecoinvent.org/hubfs/Knowledge%20Base/Database/Releases/3.12/LCIA%20Implementation%20v3.12.pdf>) on page 28.

Can you confirm if in complex chemical processes modelling, one should focus on the material use only rather than the actual modelling of the chemical reactions happening in the process, since a lot of chemical elements were not available previously?

This really depends on the chemical process. A lot of simple chemical processes for bulk chemicals and high yields and relatively small amounts of energy demand are well represented by only modelling the material inputs as precise as possible, whereas for other chemical processes, this stoichiometric approach can be very wrong. In literature, several approaches exist on how to model missing chemicals, e.g., with molecular structure models, by stoichiometric approximations, by process calculations or simulations or by finding the data in other LCA databases. A good overview paper can be found here: <https://pubs.acs.org/doi/abs/10.1021/acssuschemeng.8b03656>

What is the difference in using a transportation type process vs a market type process? Could you please tell us an example for when to use the markets processes?

<https://support.ecoinvent.org/market-activities>

Market processes are typically used if the supply chain is not known in detail. For example, if the modeler knows that the product comes from Germany, it would be best to use a production process from Germany. If it is only known that the product is bought somewhere from the European market, it would be best to use a European (RER) market process. This is maybe the easiest to understand with electricity markets. If the factory is getting the electricity from the public grid, one would use an electricity market, whereas a specific PV production process can be used if the electricity directly from an installed PV system at the factory. Markets include the market shares from different providing locations as well as sometimes average transport processes and distances within this market.

I have a question regarding the possibility to make research data open. When using ecoinvent, is it compliant with the licence to export the data only for the processes used in the LCA model and share it on open data platforms? (e.g., Zenodo)

No, you are not allowed to openly share any processes that come from ecoinvent. Also, for results that are calculated with ecoinvent, there are limitations. The best is to ask ecoinvent directly about the licensing and the publishing of data.

What is always possible is to export only the own created, so-called foreground, processes that are developed by the LCA modeler and not by ecoinvent. It is possible, for example, to put all own processes into one folder in openLCA and right-click that folder with "export" and then export the own data in ILCD or JSON-LD format where the providers from ecoinvent that are linked to the own model will not be exported. This own data can of course always be published with your own rules. Someone else, who also has the ecoinvent license from Nexus and the same ecoinvent version, can simply import this data (ILCD or JSON-LD) and it will be automatically linked to the ecoinvent background data.

This works if the ecoinvent versions of the publisher (the one who exports the own data) is the same for the LCA practitioner who import the data. If the versions are not the same, the own data publishing/sharing will still work, but the ecoinvent default provider have to be set manually in the own processes after import.

The best way for publishing data on Zenodo or other open repositories or in papers, is by only publishing the own processes and mentioning the provider that were selected from the ecoinvent background database.

For the waste modelling, which database is more appropriate in end-of-life scenarios? (Cutoff/APOS?)

This depends on your goal and scope, the standards you want to follow, and sometimes also your own preferences. The system models are described here: <https://support.ecoinvent.org/system-models>. There is a very extensive guidance on modelling recycling (which includes waste modelling) in LCA, by the Swedish Life Cycle Centre (https://www.lifecyclecenter.se/wp-content/uploads/2020_05_Modeling-recycling-in-life-cycle-assessment-1.pdf).

APOS is a system model that only exists for ecoinvent and which is not compliant to any standards. That's why it can often be only used in custom LCAs. Nevertheless, it is considered to be "closer" to reality, because every waste stream and/or recyclable material contains a small share of the previous life cycle. It is more difficult to understand that Cutoff and it is also more difficult to model than Cutoff, because more data and more knowledge about the previous life cycle must be known (for example in the case of plastics mixtures in a waste bin). I attach a picture from the report "Modeling recycling in life cycle assessment" mentioned before.

Table 1: Methods described in this report.

Method	Alternative names	Recommended by
Simple cut-off	Recycled content approach 100/0 method	International EPD system PAS 2050 Greenhouse Gas Protocol
Cut-off with economic allocation	-	Dutch Handbook on LCA
Cut-off plus credit	Module D	ISO 21930:2017 EN 15804:2012+A2 + CEN/TR 16970:2016 EN16485:2014
Allocation to material losses	Closed-loop approximation 0/100 method End-of-life approach Recyclability substitution Value of scrap approach	ISO 14044:2006 + ISO TR 14049:2012 ISO 14067:2018 ISO 20915:2018 PAS 2050:2011 Greenhouse Gas Protocol WorldSteel Association International Stainless-Steel Forum
Allocation to virgin material use	100/0 method	-
50/50 methods	-	Nordic Guidelines on LCA Ekvall (2000)
Quality-adjusted 50/50 methods	UBA approach	German requirements on LCA of beverage packaging Allacker et al. (2017)
Circular Footprint Formula	PEF approach	Product Environmental Footprint Guide
Market price-based allocation	Open-loop procedure	ISO 14067:2018
Market price-based substitution	-	Schrijvers et al. (2016a)
Price-elasticity approaches	Market-based modeling	Ekvall (2000)
Allocation at the point of substitution	APOS	Ecoinvent

Could you also touch upon HiQLCD database subscription please?

We will have a webinar on the new release of the latest HiQLCD database on the 10th of February 2026. For the subscription details, you can also contact the Nexus support (nexus@greendelta.com).

In version 3.11 implemented in openLCA, there was a difference in the results for the same product system between modeling with unit vs. system processes. Why is that, and will it still be the case in v3.12? Shouldn't the results actually be the same?

This should not be the case. When implementing the unit and system process for Cutoff, APOS and Consequential into openLCA, we do not change any inventories from the original ecoinvent data. Therefore, the processes from ecoinvent yield the exact same results for the system and for the unit process database. In the case of product systems, where also own foreground data from the LCA modeler is included, this can be different. We would need to investigate why such a difference has occurred. In such cases, you can contact us (<https://www.openlca.org/contact>) or you can post your question on ask.openLCA (<https://ask.openlca.org>). When comparing two product systems in different databases, please make sure that the product system is really the same, that potential parameters have the same values and that the product system was created with the same settings. Also make sure that the validation of the databases is successful and yields no errors (click Database/Validation) and make sure that all default providers from the own foreground processes are set (click Database/Check linking properties).

Will it be possible to share the presentation with us?

Yes, you will find the presentation in the follow-up mail to you and under "Documents" on the Nexus page for ecoinvent: <https://nexus.openlca.org/database/ecoinvent>