

Introduction to ecoinvent v3.12

Nikolia Stoikou

November, 2025

The logo for ecoinvent, featuring the word "ecoinvent" in a lowercase, sans-serif font. The letter "o" is replaced by a circular icon with diagonal hatching. The logo is oriented vertically on the right side of the slide.

ecoinvent



Agenda



- | | |
|-----------|-------------------------|
| <u>01</u> | Polls |
| <u>02</u> | ecoinvent & Database |
| <u>03</u> | Content of Version 3.12 |
| <u>04</u> | Supporting Information |
| <u>05</u> | Q&A Session |

Poll 1 of 2



Which version of ecoinvent database are you using?

A v3.12

B v3.11

C v3.10

D v3.9

E v3.8

F other

Poll 2 of 2



What is your biggest challenge in the context of sustainability reporting / impact assessment?

A lack of relevant and quality data

B lack of LCA /environmental knowledge to understand the final results

C greenwashing efforts in reporting

D evolving regulation & political uncertainty

E supply chain visibility gaps

F internal resource constraints

ecoinvent & Database



ecoinvent at a Glance



Our Team

100+ experts based
in Zürich, Switzerland

Our Mission

Promote and support
the availability of
environmental data
worldwide

ecoinvent Database

Comprehensive life
cycle inventory database
for environmental impact
assessment

Non-Profit Association

All surplus revenues
re-invested into our
product and
operations



ecoinvent

Our Database



Over 26,500 datasets:

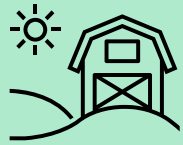
- Includes average representations of human activities, technologies, and processes
- Updated yearly
- The database covers all sectors and geographies



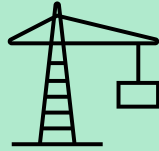
The Database Content: Sectors



Over 26,500 unit processes covering a variety of sectors in many regions of the world.



Agricultural
Processes



Construction
Materials



Electricity
Supply



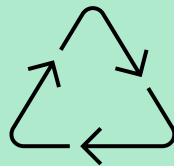
Transport



Wood
Products



Chemical
Production



End-of-life
Processes



Resources
Extraction



Machinery



Metal
Products

Content of v3.12



Content of Version 3.12



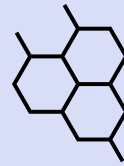
Sectorial updates:



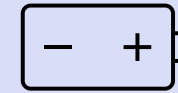
Fuels



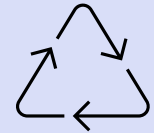
Electricity



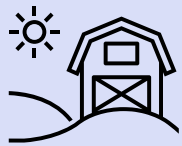
Chemicals & Plastics



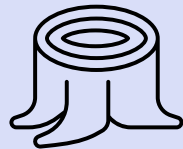
Batteries



Waste Management
& Recycling



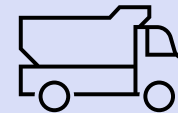
Agriculture, Fishery &
Animal Husbandry



Forestry & Wood



Metals



Transport

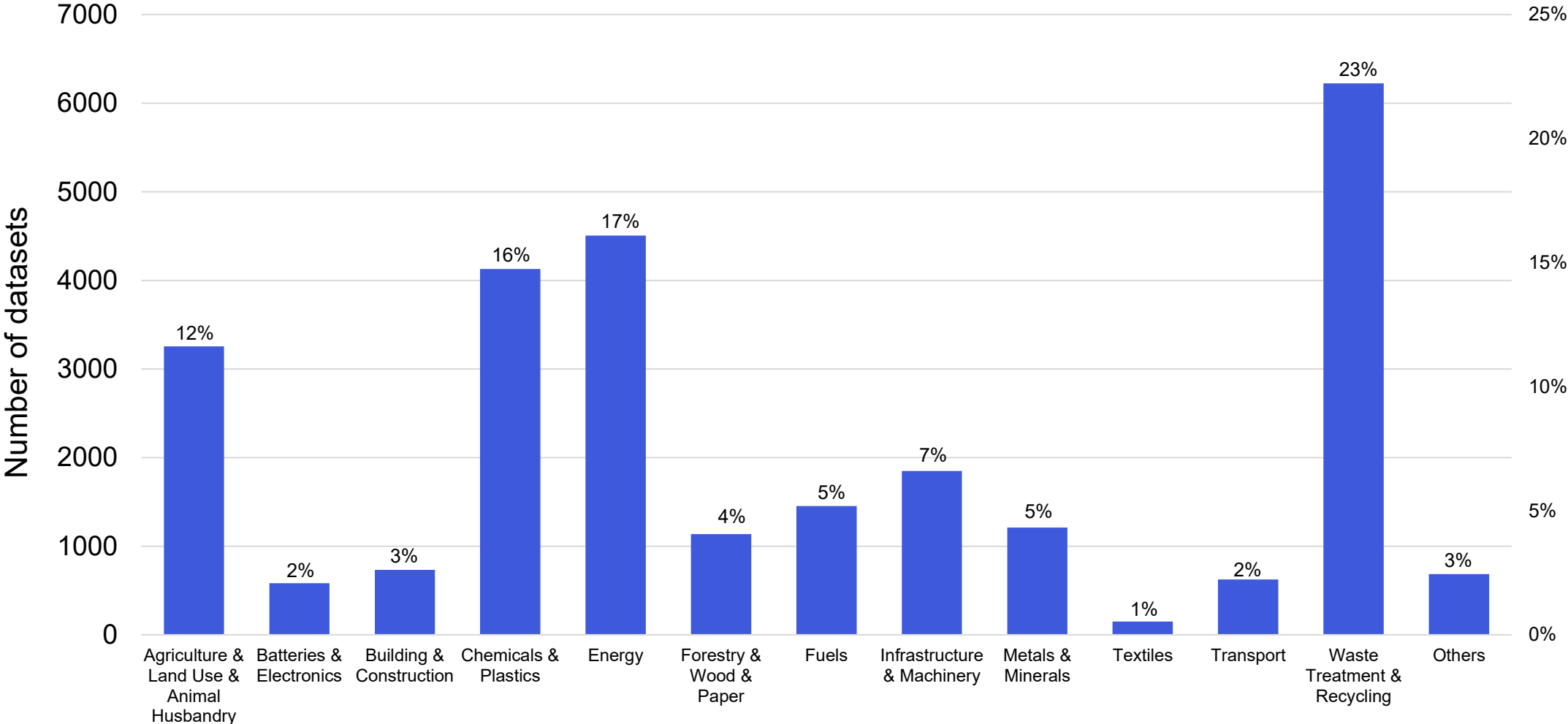


Textiles

Number of Datasets per Sector



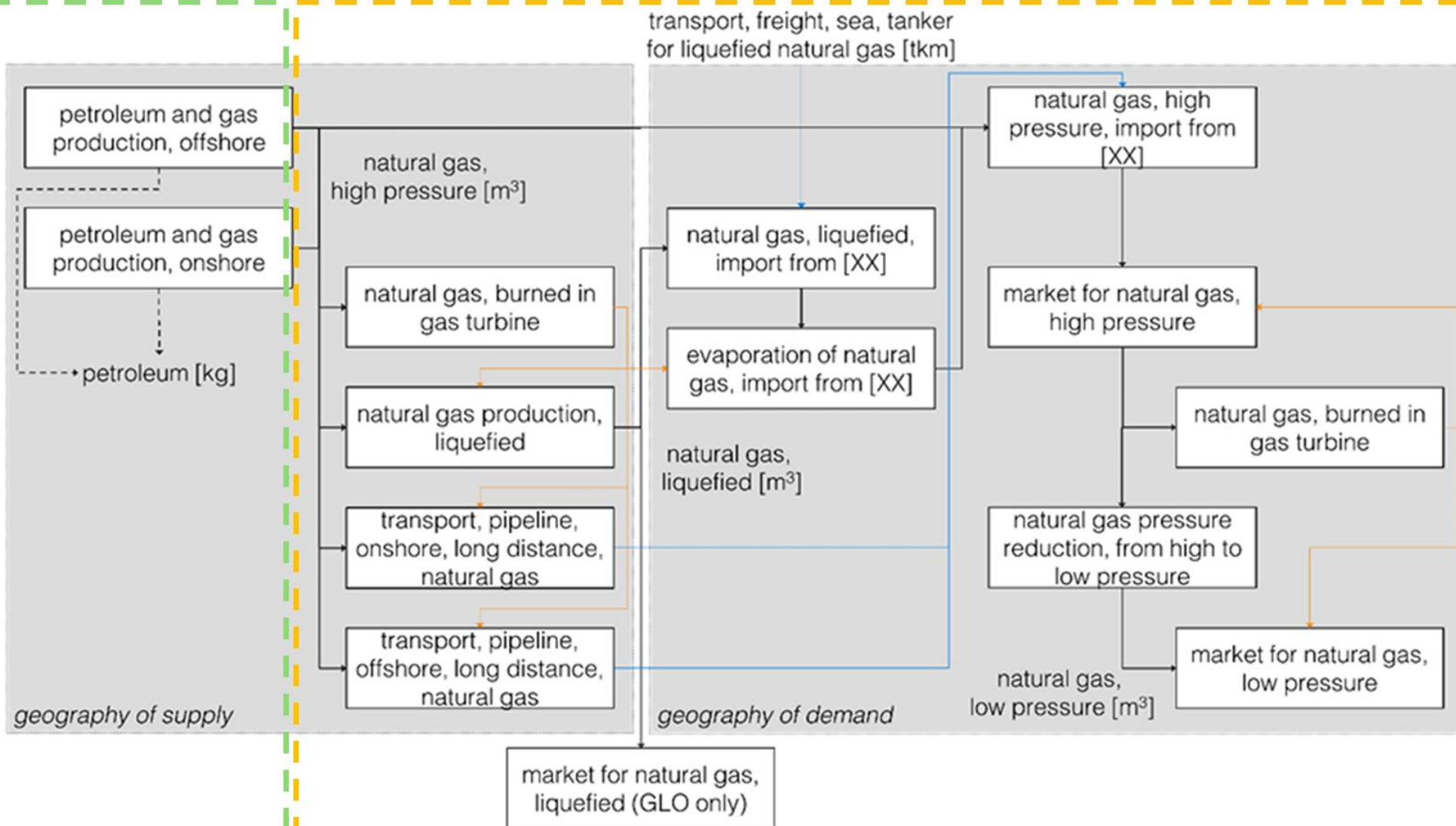
Numbers for v3.12 Allocation, cut-off



Fuels

v3.12

v3.11



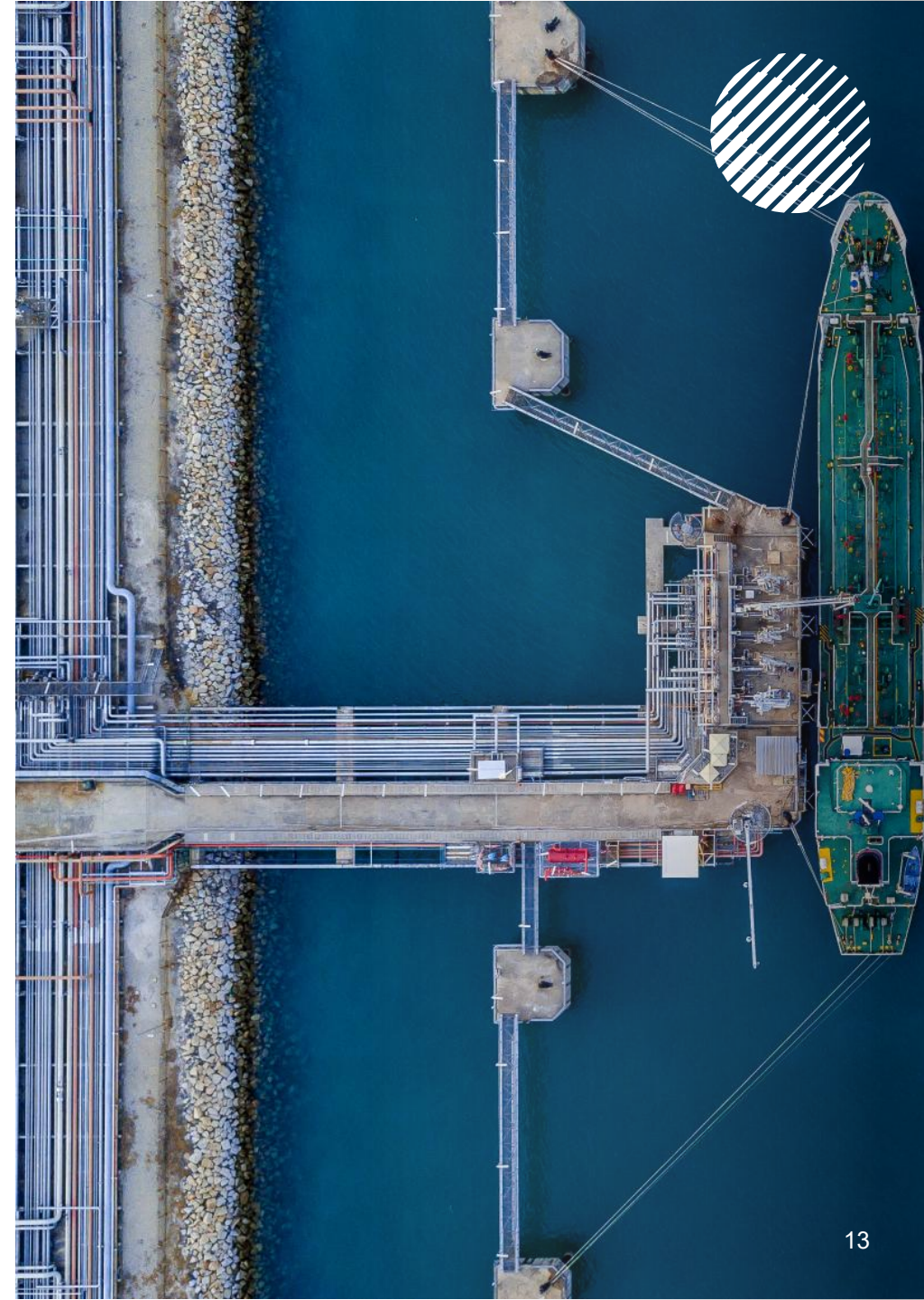
Fuels

Oil and gas extraction

- **Production of petroleum and natural gas** modeled as average combined from offshore and onshore operations in each country of production
- Updated to reference year **2023**

Natural gas liquids (NGL) production and fractionation

- Regionalization of NGL datasets, 18 new geographies representing **95% of global production of NGL** and 5 new geographies covering **96% of global helium production**
 - NGL fractionation outputs are subsequently used as light hydrocarbon feedstocks in the chemicals sector
- ✓ **Expanded geographical coverage**, useful for **petrochemical industry**



Electricity

Update of all **electricity market mixes** to a more recent year (2022 or 2023).

- Markets for **China, India, Brazil, and Switzerland** are based on data from the respective national statistics, representing **2023**
- Markets for the **U.S. and Canada** are updated to the year **2023** with more recent data from the [EPA](#) and [StatCAN](#), respectively
- All other electricity market mixes have been updated reflecting the situation in **2022**, using the [Enerdata](#) database

Residual mixes are also updated, reflecting **2024** data.

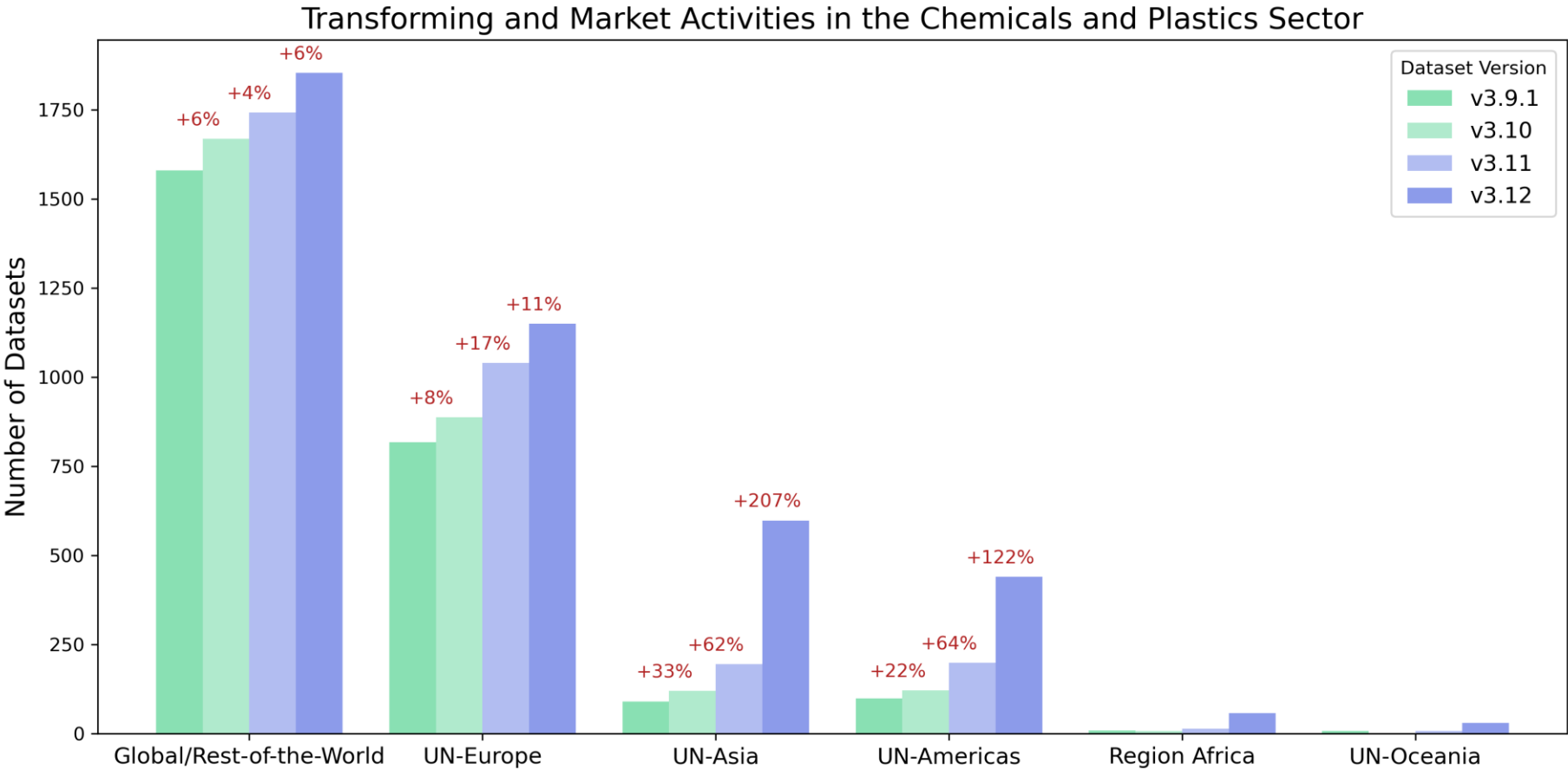
- Update on the residual mixes for European countries for the year 2024, based on data from the Association of Issuing Bodies (AIB)



Chemicals and Plastics



29% More Datasets in v3.12



The last releases expanded chemicals and plastics data beyond Europe and aggregated Global/Rest-of-the-World coverage...
→ 3.12 introduces a strong, and more balanced, regional coverage for the Americas and Asia!

Chemicals and Plastics



Improved regional coverage from **key chemical building blocks** to **intermediate precursors** to **commodity thermoplastics**

— **Products covered:**

- Ethylene, propylene, butene, butadiene → LLDPE, LDPE, HDPE, and PP
- Vinyl chloride → PVC (emulsion & solution polymerized)
- Other: methanol, acrylic acid, ethylene oxide, polycarbonate, phenol, and acetone
- Industrial gases: nitrogen and oxygen

✓ **Strengthened value chain regional representation and visibility**

Disaggregation of previously aggregated LCIs for selected products:

- Hydrogen cyanide, polystyrenes (GPPS, HIPS, EPS), and polybutadiene

✓ **Strengthened value chain data representation, visibility, and consistency**

Updated and expanded data coverage for key products: Focused on acetylene, styrene, and propylene oxide

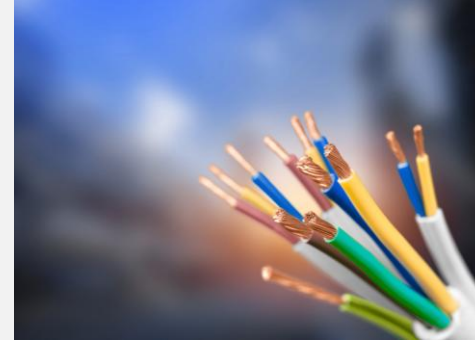
✓ **Strengthened value chain data representation**



Chemicals and Plastics

Products portfolio expansion:

- New data for **40 products** not previously covered in ecoinvent: **Coverage grew by ~6% compared to v3.11**
 - 32 organic chemicals, 5 inorganic chemicals, 2 plastic materials, and 1 synthetic rubber
 - New data for **6 new organic flows** to replace the more generic “chemical, organic” flow
 - basic precursors and materials, alcohols, aromatics, carboxylic acids, esters, unspecified organics
- ✓ **Strengthened coverage to support more data-demanding environmental assessments**



Chemicals and Plastics

Completed **two** data provision projects in collaboration with industry –
Representative average data

- Refined bromine production data shifting from European and Rest-of-World coverage:
 - **Israel** → provided by ICL Group
 - **United States, China, Japan, and the Rest-of-World** → internal data modeling



✓ **Enhanced coverage for production regions previously unaccounted for**

- **New polymer processing data** → provided by Centre Technique Industriel (IPC)
 - **Services covered:** → Blown film extrusion (several configurations) & plastic bag production



✓ **Enhanced polymer processing scope with newly implemented activities**

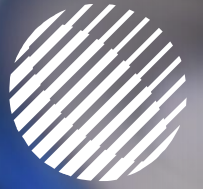


Batteries

Update to the existing datasets. Replacement of proxy materials with new available chemicals.

- Polyvinyl fluoride (proxy) as binder is replaced with **PVDF in cathodes** for the chemistries:
 - NMC111, NMC532, NMC622, NMC811
 - LFP
 - NCA
- Latex (proxy) as binder is replaced with **styrene-butadiene rubber** in:
 - Li-ion battery graphite anode
 - Li-ion battery Si-coated graphite anode
 - LMO battery cathode

✓ This update enhances the **accuracy** and **technological representativeness** of the battery datasets.



Waste

Corrections and updates based on internal and external feedback

- Integrating new recycled plastics in European datasets → linking waste to its producer **realistic supply chains**
- Plastic recycling in the U.S. and GLO had erroneous VOC emissions and transport → transport distance and emissions fixed
- Landfilled electric arc furnace slag Cr emissions updated → **reduced metal toxicity scores**
- Fixed a carbon emission error in sludge use on land → slightly higher carbon emissions for municipal waste in Europe
- ISIC classification alignment → **easier access** for users
- EN15804 waste indicators added when missing → **internal consistency**

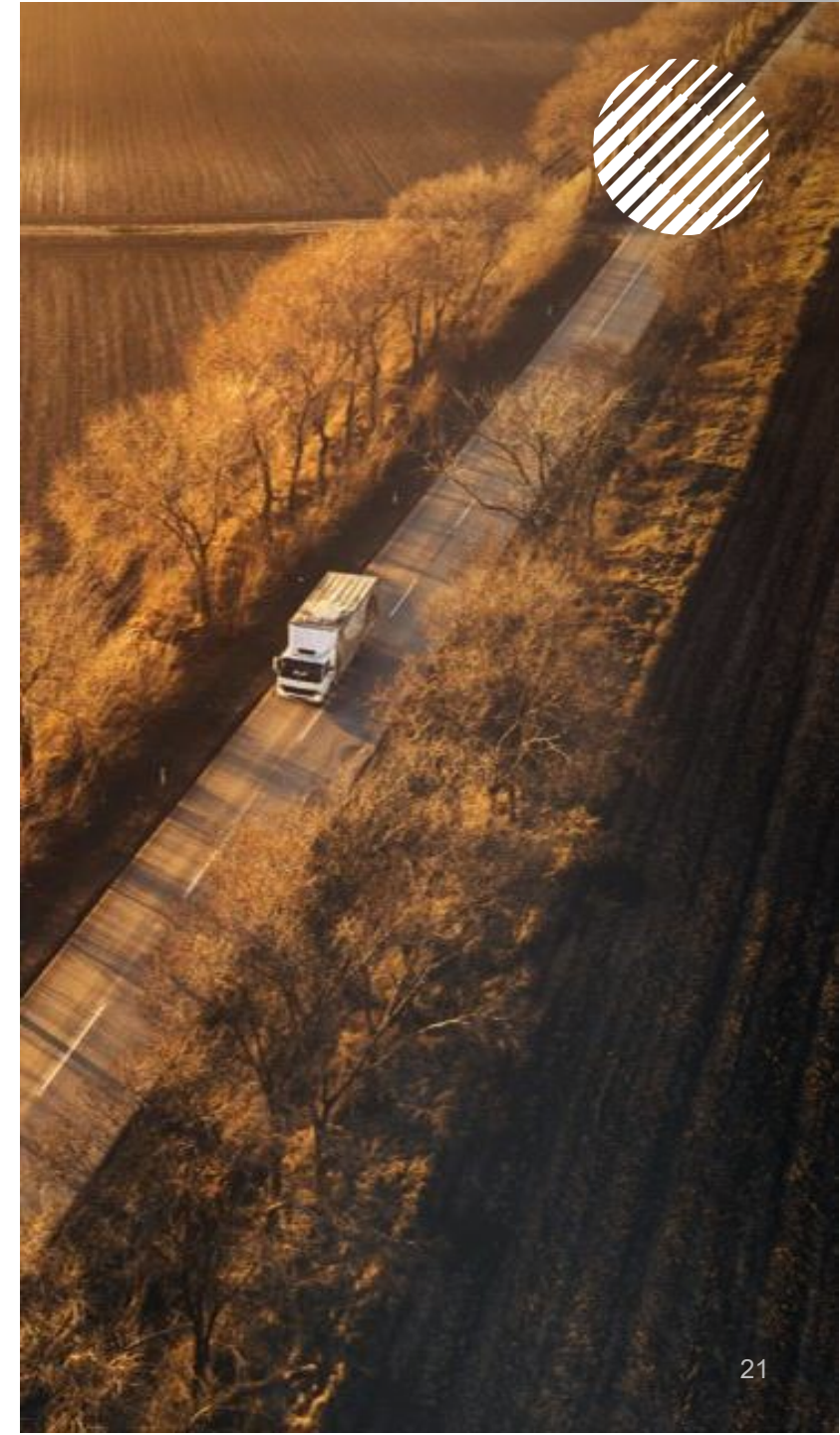


Agriculture

Inconsistency corrections

- Sugar beet production, RoW dataset, an irrigation flow added based on the weighted average of the geographies
- Maize production in the U.S., dinitrogen monoxide (N₂O) flows have been further updated from last year
- Sugarcane production in BR properties (dry mass, water in wet mass, and water content) and documentations have been updated
- The documentation of several datasets was updated to
 - Reflect better the yield of the crop in the General Comment
 - Describe the dataset better
 - Include more accurate details on “Product Information” text

✓ These updates **enhance both the quality and accuracy of the data**, as well as users’ **overall understanding** of the datasets.



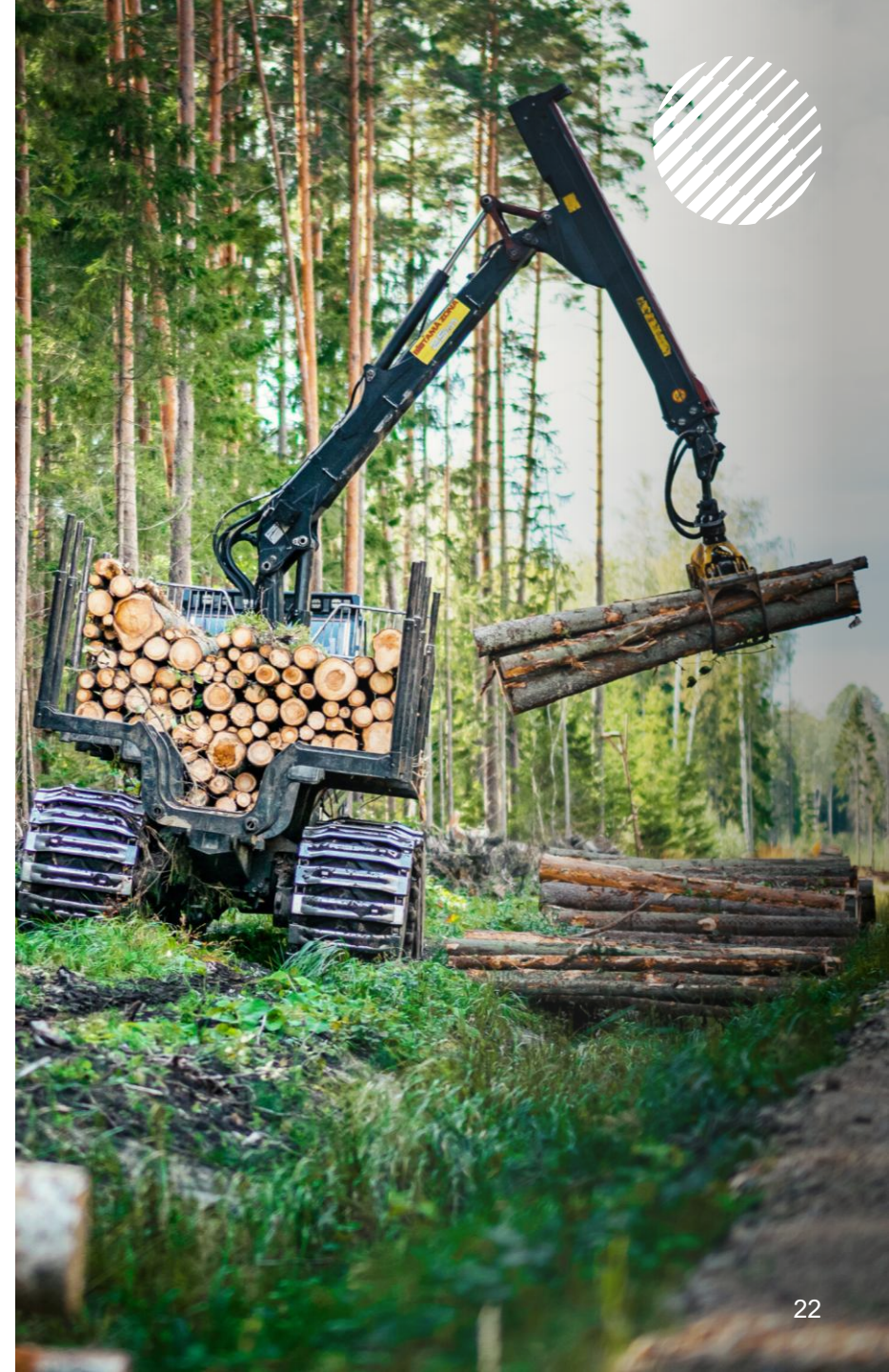
Forestry & Wood

New data for forestry in Finland

Forestry in Finland generates 20% revenue from the commodities exports¹. Data was provided by the [Finnish Forest Industries Federation](#) with [Natural Resources Institute Finland \(Luke\)](#). The datasets included are:

- Three forestry datasets: **birch**, **pine**, and **spruce**
- A **seedling** production dataset
- Existing activities regionalized to Finland
 - Forestry operations: energy wood harvesting, final harvesting, forwarding, and wood chipping for forest road
 - Forestry machinery production
- ✓ **Geographical expansion of the sector** was expanded by the introduction of the Finnish forestry project with **up-to-date and accurate data**.

¹ <https://forest.fi/forest-facts/forest-sector-in-finland/>



Forestry & Wood

Improved product naming conventions

We have revised naming conventions in the sector to more transparently track moisture status, bark content, and measurement units.

- ✓ **Eliminate confusion and improve transparency** between physical product characteristics and measurement basis



Metals

— Updates of existing datasets

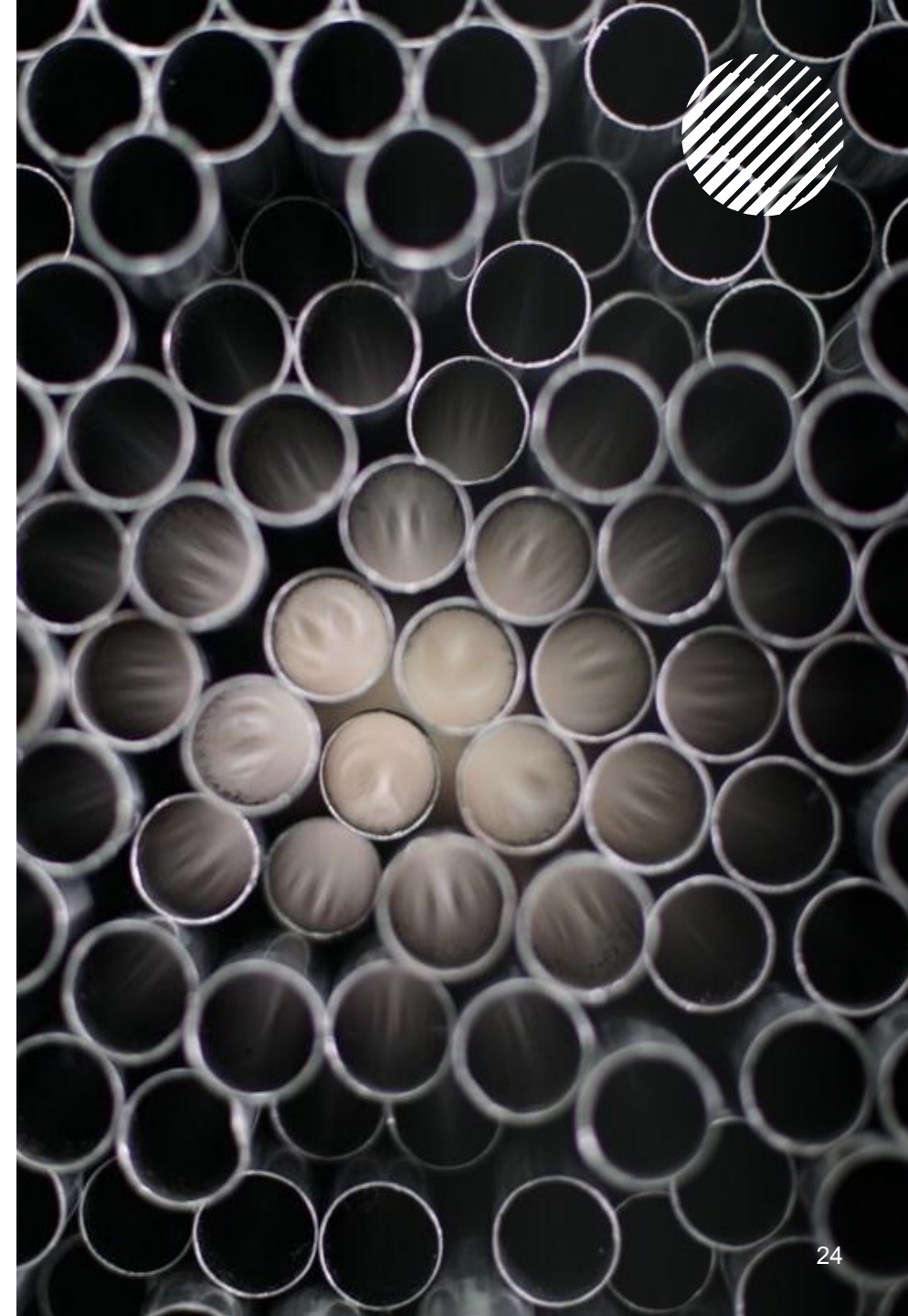
- Aluminium production from mining to casting – data from the [International Aluminium Institute](#) for the year 2019 (replacing 2015 data) and electricity mixes

✓ **Accurate representation** of AI production and energy requirements based on the **best available industrial data**

— New datasets addressing users' needs

- Zamak production in Europe, mostly based on secondary Zinc – data from the [International Zinc Association](#)
- New datasets for steel alloys production, based on scrap, offering the users more steel variants

✓ **Expanding sector coverage** with **targeted** and **reliable** data, facilitating projects where material selection is critical



Transport

Updated data

— Seagoing vessels:

- Updated datasets regarding production, maintenance, and use phase to represent changes in the average fleet size.
- Updated emissions following the latest IMO GHG report*.

— Road transport:

- Updated brake wear of lorries and passenger cars to fix an error regarding the quantity of certain emissions.

✓ Updated datasets with **improved data quality**

**IMO 2020, Fourth Greenhouse Gas Study 2020*



Textiles

New data for hemp fibres in France

- 3 new production datasets covering:
 - agricultural stage of the hemp crop
 - decortication of hemp stems
 - cottonisation of fibres into staple length
- Primary data supplied by [InterChanvre](#)

✓ **Geographical expansion of the sector**, representing **100% of the French market**, that produced nearly 50% of global hemp fibres^[1], enhanced **coverage for natural fibres**

Corrections & dataset updates

- Updating the EU flax scutching dataset by adding new allocatable by-products and elementary exchanges. Changes carried out in collaboration with the [Alliance for European Flax-Linen & Hemp](#)
- Various corrections for cotton and polyester datasets to eliminate identified errors & inconsistencies
- Alignment of ISIC & CPC classifications throughout Textile Activities and Products

✓ **Data alignment** in natural fibres, enhanced **data accuracy**, and easier **data traceability**

¹ Marquardt, S., & Savage, L. (2023). *Growing hemp for the future: A global fiber guide*. Textile Exchange. <https://textileexchange.org/>



Supporting Information



Information about Version 3.12

The Report of Changes, Correspondence File, and other useful files and information are available on our [Knowledge Base](#)

The screenshot shows the 'ecoinvent support' website. At the top, there is a 'Contact Us' link and a 'Database Login' button. Below the header is a search bar with the text 'Search the Knowledge Base' and a search input field containing 'Search for answers'. The main navigation menu on the left includes 'Getting Started', 'FAQ', 'Database', 'Fundamentals', 'Sectors', 'Releases', 'Use Cases', 'Resources', 'Data Submission', 'Glossary', and 'Projects'. The 'Releases' section is active, displaying 'Relevant Documents and Files'. Three items are listed: 'Report of Changes', 'Correspondence File', and 'Database Overview File'. Each item has a brief description and a button to view the document. The 'Report of Changes' button is highlighted with a red box. The 'Correspondence File' button is also highlighted with a red box. The 'Database Overview File' button is highlighted with a red box. The 'LCIA Implementation Report' section is partially visible at the bottom.

ecoinvent support Contact Us Database Login

Search the Knowledge Base

Search for answers

Knowledge Base > Database > Releases

Relevant Documents and Files

Report of Changes

This report covers all changes made in the ecoinvent database between version 3.11 (2024) and version 3.12 (2025). It reflects both database-wide changes, as well as sector-specific changes.

[See Report of Changes](#)

Correspondence File

The correspondence file is a spreadsheet that lists all datasets in versions 3.11 and 3.12 and matches corresponding datasets between versions.

[See Correspondence File \(3.11 to 3.12\)](#)

Database Overview File

The database overview file describes the contents of the database. The following information is contained in the file:

- **Activity Overview(s)**

The lists of datasets contained in each of the three system models, including the list of unlinked and unallocated datasets.

- **ecoinvent Geographies**

The geographies used in the ecoinvent database. Each geography is assigned a classification, and the geographies contained in each geography are indicated.

- **LCIA Methods**

The list of the LCIA methods for which ecoinvent calculates impact scores. The version of the methods is indicated, and the original source used for defining the characterization factors is provided.

[See Database Overview File](#)

LCIA Implementation Report

metadata for crop datasets. Emissions mainly to air and water have been harmonized and corrected consistently with the modeling approach from the data provider. Finally,

ecoinvent's Knowledge Base



- The Knowledge Base contains general information about the database:
<https://support.ecoinvent.org/>
- It contains descriptions of how supply chains are modelled, as well as other information helpful for understanding and using the database

The screenshot shows the ecoinvent support Knowledge Base interface. At the top left is the 'ecoinvent support' logo, with 'ecoinvent' in a larger font and 'support' below it. To the right of the logo is a 'Contact Us' link. Further right is a 'Database Login' button with an external link icon. Below the header is a search bar with the text 'Search the Knowledge Base' and a search input field containing 'Search for answers' and a magnifying glass icon. The main content area is a grid of six white cards with green borders, each containing an icon and a title: 'Getting Started' (location pin and arrow icon), 'FAQ' (speech bubble with question mark icon), 'Database' (database cylinder icon), 'Use Cases' (gears icon), 'Resources' (hand pointing to a network icon), and 'Data Submission' (document with checkmark icon).

ecoQuery



ecoQuery is the online platform to access the ecoinvent database through [ecoinvent's website](#)

The screenshot shows the ecoQuery website interface. At the top left, the 'ecoQuery' logo is displayed. Below it is a navigation menu with items: '3.12 - cutoff', 'Home', 'Datasets', 'Resources', 'What's new', and 'Support'. A notification banner at the top right states: 'What's new ecoinvent version 3.12 is now available with expanded regional and sector-specific coverage [here](#)'. The main content area features a large green and blue gradient background with the text 'The world's best environmental database' and 'Over 25,000 reliable datasets modeling real-world processes'. A search bar with the placeholder 'Search for an activity or a product...' and a green 'Search' button is present. Below the search bar is a link for 'Advanced Search' and a 'Popular:' section with tags for 'natural gas', 'electricity high voltage', 'carbon monoxide', 'plastic recycled', and 'cement mortar'. At the bottom, a section titled 'Explore the database via sectors' is partially visible.

Files Available in ecoQuery



The Files section contains useful files specific to each system model.

ecoQuery

3.12 - cutoff

- Home
- Datasets
- Resources
- Files**
- Reports
- What's new
- Support

Nikolia Stoikou
stoikou@ecoinvent.o...

What's new ecoinvent version 3.12 is now available with expanded regional and sector-specific coverage [here](#).

Files

Here you can download the database in ecoSpold2 format and access several supporting files for different versions of the ecoinvent database (for more information on the files, see [our step-by-step guide](#)). The data type .spo1d can be overwritten to .xml, and thus all the unit process (UPR), cumulative inventory (LCI), and results of the impact assessment (LCIA) of any activity can be viewed in any XML editor.

Version 3.12

Released November 5th, 2025

Allocation cut-off by classification

FILE NAME	SIZE	
ecoinvent 3.12_cut-off_cumulative_lcia.xlsx.7z	177Mb	↓
ecoinvent 3.12_cut-off_cumulative_lci.xlsx.7z	1Gb	↓
ecoinvent 3.12_cutoff_ecoSpold02.7z	115Mb	↓
ecoinvent 3.12_cutoff_lcia_ecoSpold02.7z	266Mb	↓
ecoinvent 3.12_cutoff_lci_ecoSpold02.7z	2Gb	↓
Electricity Analysis 3.12, Allocation, cut-off.xlsx	49Mb	↓
universal_matrix_export_3.12_cut-off.7z	7Mb	↓

Jump to

- 3.12
- 3.11
- 3.10.1
- 3.10
- 3.9.1
- 3.9
- 3.8
- 3.7.1
- 3.7
- 3.6
- 3.5
- 3.4
- 3.3
- 3.2
- 3.1
- 3.01
- 2

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Future Versions

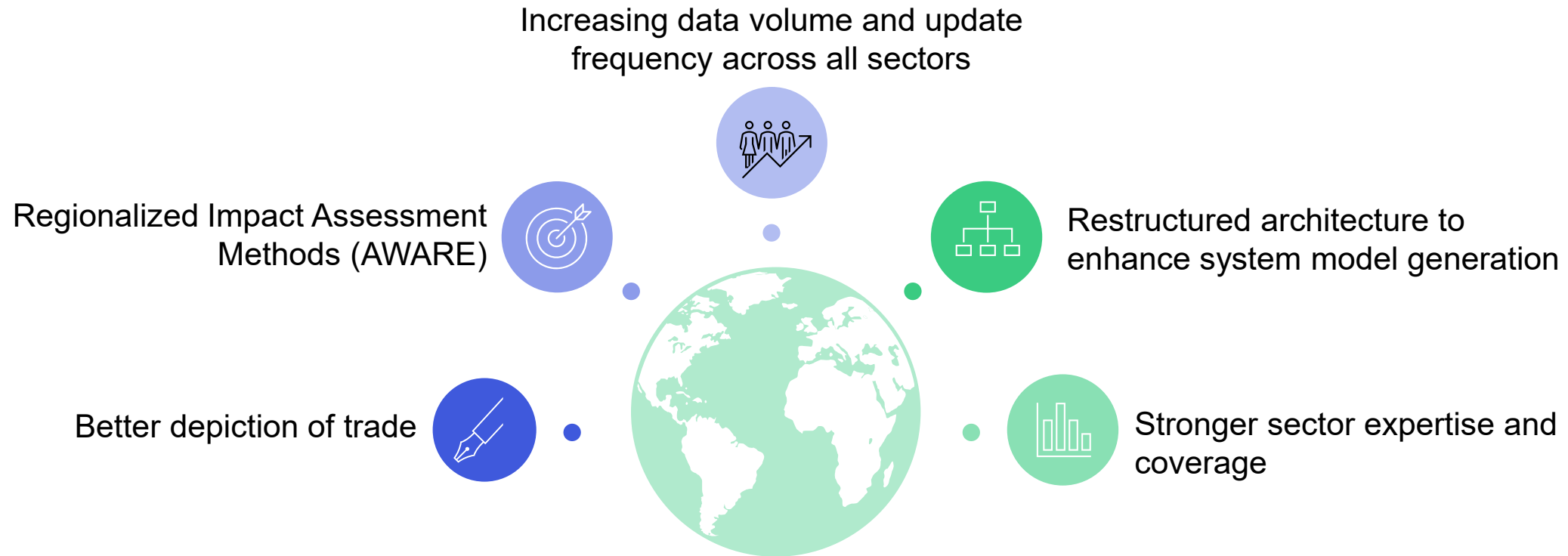


ecoinvent Version 4



Coming in 2026... Explore Our Vision

Introducing a new way of thinking about environmental data — more dynamic, transparent, and user-centric



Discover the roadmap and innovations behind version 4

Watch the Webinar recording: “**Environmental Data – Reimagined**” available [here](#)

Q&A session

For any questions, comments, or other feedback, please get in touch through:

<https://ecoinvent.org/contact-us>

Also, if you would like to provide data!



Follow us on LinkedIn to stay up to date on the latest developments.

November, 2025