GreenDELTA
sustainability consulting + software

openLCA

Webinar: The EF3.1 database in openLCA

Dr. Andreas Ciroth & Dr. Jonas Hoffmann

Points for today

- Environmental Footprint (EF) 3.1 database, background
- EF 3.1 database, license conditions and use advice
- Preparing the EF3.1 database for openLCA
  - Our approach
  - About the errors we fixed
- A closer look at the database
- How to get the database, the DAL
- Q&A Session

Environmental Footprint (EF) 3.1 database, background

The Environmental Footprint database is the database for the Environmental Footprint LCA methodology of the EC

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Environmental Footprint

What is the Environmental Footprint?

A company wishing to market its product as environmentally friendly in several Member State markets faces a confusing range of choices of methods and initiatives. Sometimes they have to use different ones for different markets. This results in costs for companies and confusion for consumers

The European Commission proposed the Product Environmental Footprint (PEF) and Organisation Environmental Footprint (EF) methods as a common way of measuring environmental performance (EU Commission Recommendation 2021/2279). The PEF and OEF are the EU recommended Life Cycle Assessment (LCA) based methods to quantify the environmental impacts of products (goods or services) and organisations.

The overarching purpose of PEF and OEF information is to enable to reduce the environmental impacts of goods, services and organisations taking into account supply chain activities (from extraction of raw materials, through production and use to final waste management). This purpose is achieved through the provision of detailed requirements for modelling the environmental impacts of the flows of material/energy and the emissions and waste streams associated with a product or an organisation throughout the life cycle.

Policy related information on the Environmental Footprint is available on the dedicated page hosted by DG ENV which contains the scheduled PEF/OEF trainings and the archive of past trainings including recordings and slides.

JRC Support to EF development

The JRC plays a key role in the context of the Environmental Footprint. The JRC has been leading the technical and scientific development of the EF methods, defining the methodological requirements to be followed to perform EF studies and being responsible for many activities related to data development and provision.

A non-exhaustive list of JRC activities in support to EF development is:

- Publication of technical reports including suggestions on how to update the PEF and OEF Guides,
- Update and development of characterization models, normalization factors, and weighting factors for the life cycle impact assessment phase,
- Facilitate the alignment between PEF and relevant European standards (e.g. EN 15804),
- Publication of guidance documents to develop EF-compliant datasets
- Maintenance of the Life Cycle Data Network for data provision to be used in an EF context
- Release and update of the EF reference-packages to be used for the development of EF-compliant data sets (EF reference packages includes all the "fixed" items (XML files) of the ILCD-formatted package that cannot be generated or modified by third parties)
- Development of software (e.g. Look@LCI, Validator) for checking and validating EF-compliant datasets
- Chairing working groups to further advance on data and methodological requirements
- Ensuring interoperability at global level (UNEP:GLAD and GLAM collaboration)

The Environmental Footprint database is the database for the Environmental Footprint LCA methodology of the EC

- Own inventory modeling rules
- Own nomenclature
- Own Life Cycle Impact Assessment methods

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So, where can you get the datasets from?

Startseite
How to participate
Developer common (ILCD/EF)
Developer - ILCD Format
Developer - ILCD Entry Level
Developer - Environmental Footprint
Browse ILCD
Dataset registered ILCD
Nodes registered ILCD
Browse PEF/OEF
Dataset registered PEF/OEF
Nodes registered PEF/OEF

EF data network

This page will allow the access to all the EF compliant datasets, from different third party nodes. Currently some nodes are not capable to connect to the central network, you can browse the datasets through the list of available nodes and data stocks in the dedicated section.

https://eplca.jrc.ec.europa.eu/LCDN/datasetListEF.xhtml

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Nodes containing EF data (last update: June 2023)

The following table includes a list of nodes that provides PEF/OEF compliant data. The access to nodes and data stocks (i.e. specific stocks of homogeneous data within the nodes) is regulated by the decision of the node owner, thus, some of the data might be accessible for free, for some other a registration (for free or for fee) might be required. Within the nodes a "login/register" link is available, and the user's conditions are specified within the nodes. For the nodes owned by the European Commission, the access is always free. The access to EF compliant data is granted for free (with or without registration) for users that develops PEF/OEF studies within the existing PEFCRs/OEFSRs.

Mapping file containing suggested correspondences between Environmental Footprint 2.0 process datasets (developed within the EF Pilot Phase) and the EF 3.1 datasets (delivered to the European Commission during the EF Transition Phase until June 2023).

The mapping file (download excel updated until June 2023) has been defined by the Joint Research Centre, taking into account the inputs and feedback received from the data developers involved in providing the datasets listed in the worksheets. The mapping file should be considered as a utility for users to identify the best fitting EF 3.1 process datasets to replace the EF 2.0 within the scope of their study.

Node	Description of the lot(s) present in the node and compliance system	Owner	Link
European Solvents Industry Group	• **Solvents** (EF 3.1)	ESIG	https://data.esig.org/
CEPE	• **Chemicals for paint** (EF 2.0) (tendered, EF pilot phase) • **Chemicals for paint** (EF 3.1. Level-1 disaggregated in elLCD) (updated from EF pilot phase)	CEPE/ecoinvent	http://lcdn-cepe.org/
ecoinvent	• **Chemicals** (EF 2.0) (tendered, EF pilot phase) • **Chemicals part 1** (EF 3.1. Level-1 disaggregated in elLCD) (updated from EF pilot phase) • **Chemicals part 2** (EF 3.1) (tendered, EF transition phase) • **Apparel parts 1-2-3** (EF 3.1) (tendered, EF transition phase) • **Plastics** (EF 3.1) (tendered, EF transition phase) • **Other** (EF 3.1) (tendered, EF transition phase)	ecoinvent	http://ecoinvent.lca-data.com/
EF RPs	• **EF representative products** (EF 2.0)	European Commission	http://eplca.jrc.ec.europa.eu/EF-node/
FEFAC/Blonk	• **Feed** (EF 2.0) (tendered, EF pilot phase) • **Feed** (EF 3.1. Level-1 disaggregated in elLCD) (updated from EF pilot phase) • **Agrofood** (EF 3.1) (tendered, EF transition phase)	FEFAC	http://lcdn.blonkconsultants.nl/Node/

https://eplca.jrc.ec.europa.eu/LCDN/contactListEF.xhtml

Quantis	• **Agrofood, "others"** (EF 2.0) (tendered, EF pilot phase)	Quantis	https://lcdn.quantis-software.com/PEF/ (Down, March 2023)
RDC	• **Glass recycling** (EF 2.0)	RDC	http://soda.rdc.yp5.be/login.xhtml (Down, March 2023)
Small Data Providers Database	**Node operated by the European Commission, for small data providers (less than 10 process datasets per provider allowed)** (EF 2.0)	European Commission	https://eplca.jrc.ec.europa.eu/EF-SDP/
Sphera (former Thinkstep)	• **Core datasets** official ETPE (includes Energy, Transport, Packaging, End-of-life) (EF 2.0) (tendered, EF pilot phase) • **Core datasets** official ETPE part 1 (EF 3.1) (updated from EF pilot phase) • **Core datasets** official ETPE part 2 (includes non-packaging plastics, electric and electronics, metals and minerals) (EF 3.1) (tendered, EF transition phase)	Sphera	http://lcdn.thinkstep.com/

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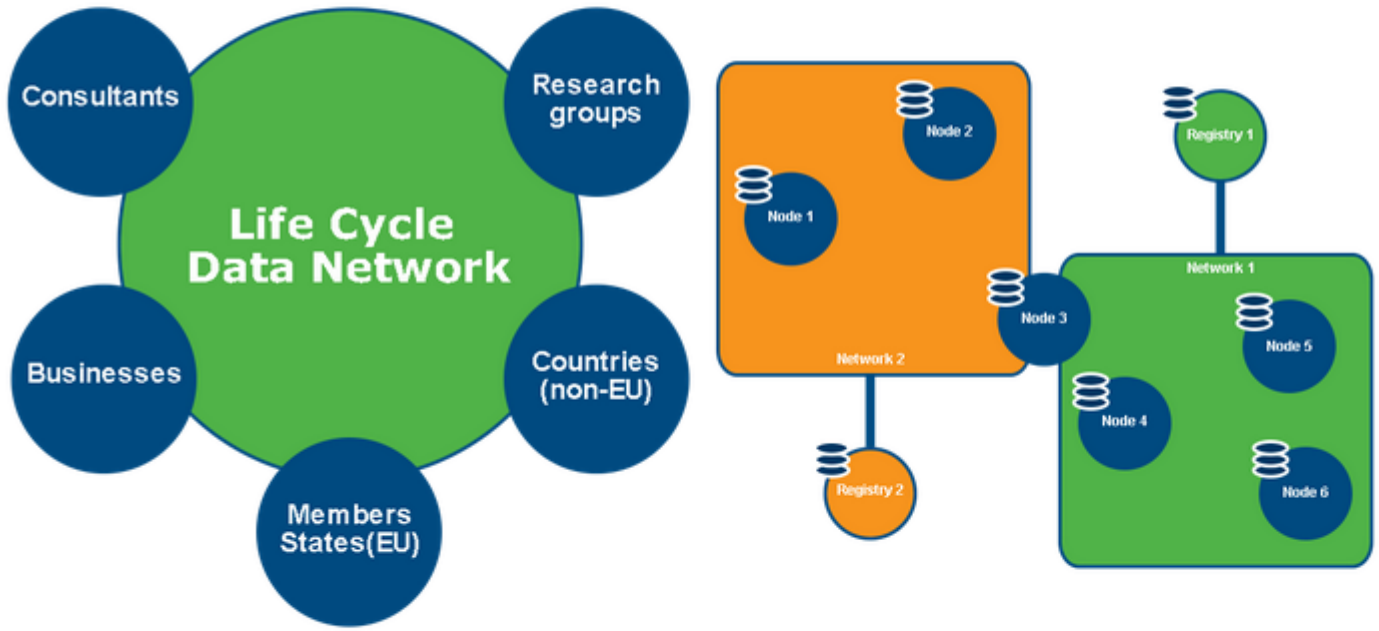
The **LCDN** is a non-centralised web-based infrastructure composed by **Nodes** (i.e. the repository of a developer/owner dateset), and it also called **Registry**.

Main features of the LCDN are:

- The datasets in the **LCDN** are published by the developer/owner through their own **Node**.
- Datasets registered can be searched and then browsed directly from the relative Node in the network.
- All datasets registered and published are compliant with quality requirements aimed at guarantee datasets quality and coherence in terms of Methodology, Documentation, and Nomenclature, for the two compliance systems allowed (**ILCD entry level** and **PEF/OEF**)
- Look at the nodes registered for ILCD entry level and PEF/OEF



The **LCDN** datasets support Policy development and application, Environmental Footprint activities and European Commission Life-Cycle based projects.

Originally meant to host data compliant with ILCD entry level requirements, since April 2018 a new registry has been added, to host and share data packages in line with the Product and Organisation Environmental Footprint (PEF and OEF) framework .. The European Commission hosts the node for the Environmental Footprint's of the representative products (click here to go directly to the node)

EF 3.1 database, license conditions and use advice

EF 3.1, license conditions and use advice

- Somewhat tricky, but in roughly:
- For users, allowed to be used, for free, in the context of EF
- For data providers (-> nodes), possibility to sell for other contexts
- For redistributors (i.e., LCA software providers), not permitted to sell the database
- “Free” integration into a tool that costs a license fee is fine.

  (this is of course not so nice for open source tools, unless the integration of the database is really not much effort)
- Use advice for the version in openLCA: use in the context of EF

Preparing the EF3.1 database for openLCA

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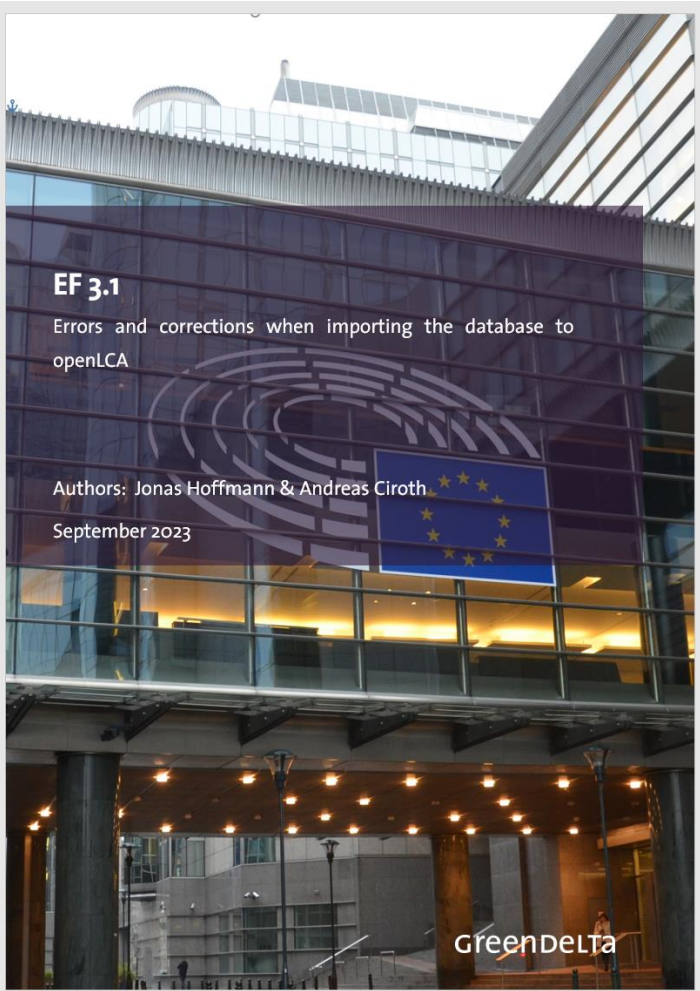
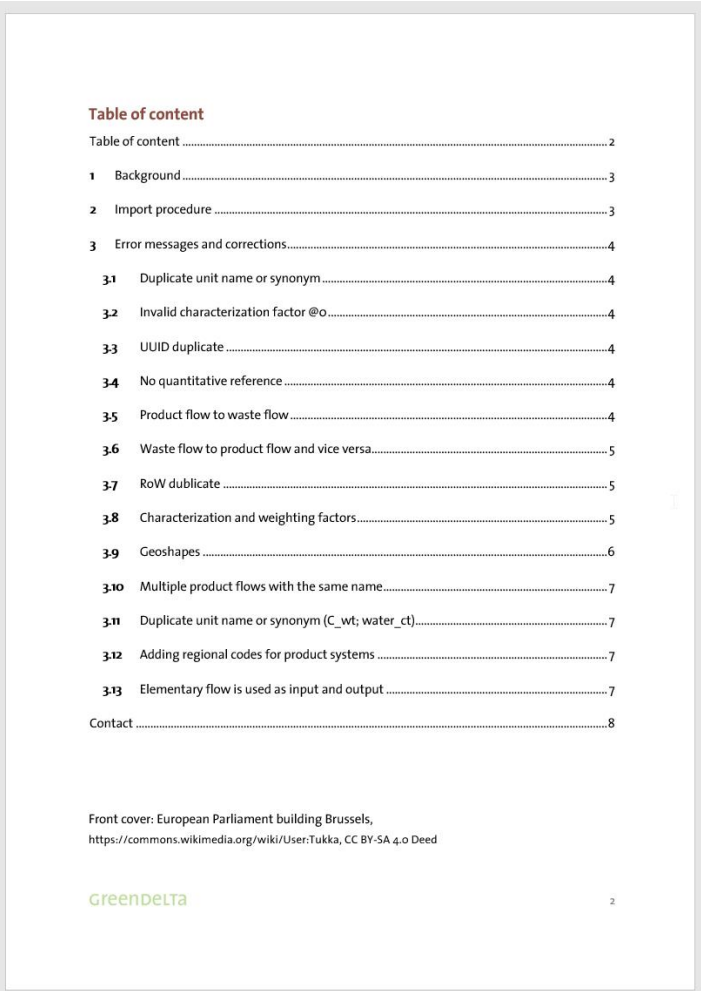
- It was not exactly nice and easy





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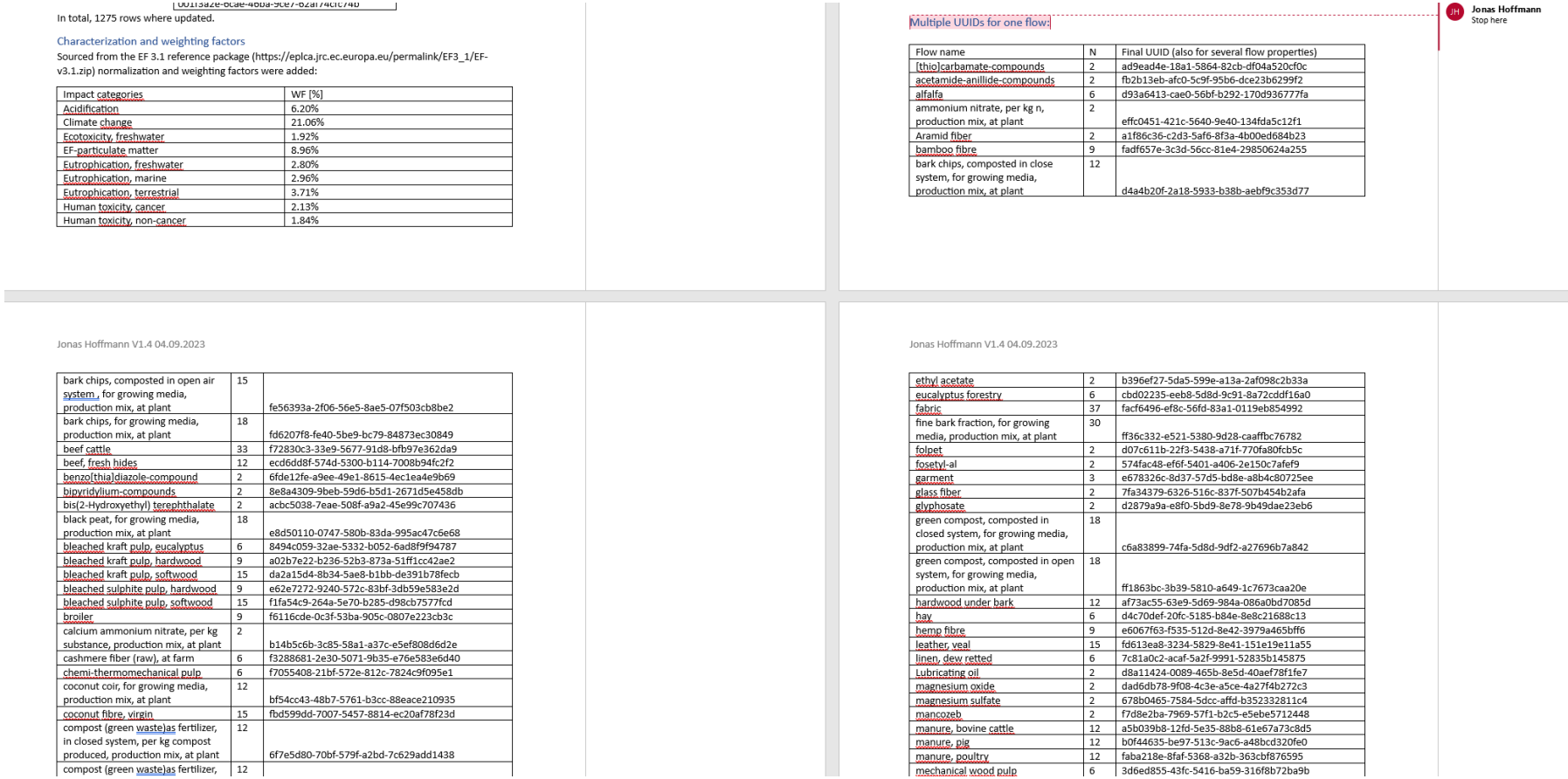

00113a2e-8cae-46ba-9ce7-b2af74cfc74b

In total, 1275 rows where updated.

Characterization and weighting factors

Sourced from the EF 3.1 reference package (https://eplca.jrc.ec.europa.eu/permalink/EF3_1/EF-v3.1.zip) normalization and weighting factors were added:

Impact categories	WF [%]
Acidification	6.20%
Climate change	21.06%
Ecotoxicity, freshwater	1.92%
EF-particulate matter	8.96%
Eutrophication, freshwater	2.80%
Eutrophication, marine	2.96%
Eutrophication, terrestrial	3.71%
Human toxicity, cancer	2.13%
Human toxicity, non-cancer	1.84%

Multiple UUIDs for one flow:

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Stop here

Flow name	N	Final UUID (also for several flow properties)
[thio]carbamate-compounds	2	ad9ead4e-18a1-5864-82cb-df04a520cf0c
acetamide-anillide-compounds	2	fb2b13eb-afc0-5c9f-95b6-dce23b6299f2
alfalfa	6	d93a6413-cae0-56bf-b292-170d936777fa
ammonium nitrate, per kg n, production mix, at plant	2	effc0451-421c-5640-9e40-134fda5c12f1
Aramid fiber	2	a1f86c36-c2d3-5af6-8f3a-4b00ed684b23
bamboo fibre	9	fadf657e-3c3d-56cc-81e4-29850624a255
bark chips, composted in close system, for growing media, production mix, at plant	12	d4a4b20f-2a18-5933-b38b-aebf9c353d77

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bark chips, composted in open air system , for growing media, production mix, at plant	15	fe56393a-2f06-56e5-8ae5-07f503cb8be2
bark chips, for growing media, production mix, at plant	18	fd6207f8-fe40-5be9-bc79-84873ec30849
beef cattle	33	f72830c3-33e9-5677-91d8-bfb97e362da9
beef, fresh hides	12	ecd6dd8f-574d-5300-b114-7008b94fc2f2
benzo[thia]diazole-compound	2	6fde12fe-a9ee-49e1-8615-4ec1ea4e9b69
bipyridylium-compounds	2	8e8a4309-9beb-59d6-b5d1-2671d5e458db
bis(2-Hydroxyethyl) terephthalate	2	acbc5038-7eae-508f-a9a2-45e99c707436
black peat, for growing media, production mix, at plant	18	e8d50110-0747-580b-83da-995ac47c6e68
bleached kraft pulp, eucalyptus	6	8494c059-32ae-5332-b052-6ad8f9f94787
bleached kraft pulp, hardwood	9	a02b7e22-b236-52b3-873a-51ff1cc42ae2
bleached kraft pulp, softwood	15	da2a15d4-8b34-5ae8-b1bb-de391b78fecb
bleached sulphite pulp, hardwood	9	e62e7272-9240-572c-83bf-3db59e583e2d
bleached sulphite pulp, softwood	15	f1fa54c9-264a-5e70-b285-d98cb7577fcd
broiler	9	f6116cde-0c3f-53ba-905c-0807e223cb3c
calcium ammonium nitrate, per kg substance, production mix, at plant	2	b14b5c6b-3c85-58a1-a37c-e5ef808d6d2e
cashmere fiber (raw), at farm	6	f3288681-2e30-5071-9b35-e76e583e6d40
chemi-thermomechanical pulp	6	f7055408-21bf-572e-812c-7824c9f095e1
coconut coir, for growing media, production mix, at plant	12	bf54cc43-48b7-5761-b3cc-88eace210935
coconut fibre, virgin	15	fbd599dd-7007-5457-8814-ec20af78f23d
compost (green waste)as fertilizer, in closed system, per kg compost produced, production mix, at plant	12	6f7e5d80-70bf-579f-a2bd-7c629add1438
compost (green waste)as fertilizer,	12	

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ethyl acetate	2	b396ef27-5da5-599e-a13a-2af098c2b33a
eucalyptus forestry	6	cbd02235-eeb8-5d8d-9c91-8a72cddf16a0
fabric	37	facf6496-ef8c-56fd-83a1-0119eb854992
fine bark fraction, for growing media, production mix, at plant	30	ff36c332-e521-5380-9d28-caafffbc76782
folpet	2	d07c611b-22f3-5438-a71f-770fa80fcb5c
fosetyl-al	2	574fac48-ef6f-5401-a406-2e150c7afef9
garment	3	e678326c-8d37-57d5-bd8e-a8b4c80725ee
glass fiber	2	7fa34379-6326-516c-837f-507b454b2afa
glyphosate	2	d2879a9a-e8f0-5bd9-8e78-9b49dae23eb6
green compost, composted in closed system, for growing media, production mix, at plant	18	c6a83899-74fa-5d8d-9df2-a27696b7a842
green compost, composted in open system, for growing media, production mix, at plant	18	ff1863bc-3b39-5810-a649-1c7673caa20e
hardwood under bark	12	af73ac55-63e9-5d69-984a-086a0bd7085d
hay	6	d4c70def-20fc-5185-b84e-8e8c21688c13
hemp fibre	9	e6067f63-f535-512d-8e42-3979a465bff6
leather, veal	15	fd613ea8-3234-5829-8e41-151e19e11a55
linen, dew retted	6	7c81a0c2-acaf-5a2f-9991-52835b145875
Lubricating oil	2	d8a11424-0089-465b-8e5d-40aef78f1fe7
magnesium oxide	2	dad6db78-9f08-4c3e-a5ce-4a27f4b272c3
magnesium sulfate	2	678b0465-7584-5dcc-affd-b352332811c4
mancozeb	2	f7d8e2ba-7969-57f1-b2c5-e5ebe5712448
manure, bovine cattle	12	a5b039b8-12fd-5e35-88b8-61e67a73c8d5
manure, pig	12	b0f44635-be97-513c-9ac6-a48bcd320fe0
manure, poultry	12	faba218e-8faf-5368-a32b-363cbf876595
mechanical wood pulp	6	3d6ed855-43fc-5416-ba59-316f8b72ba9b

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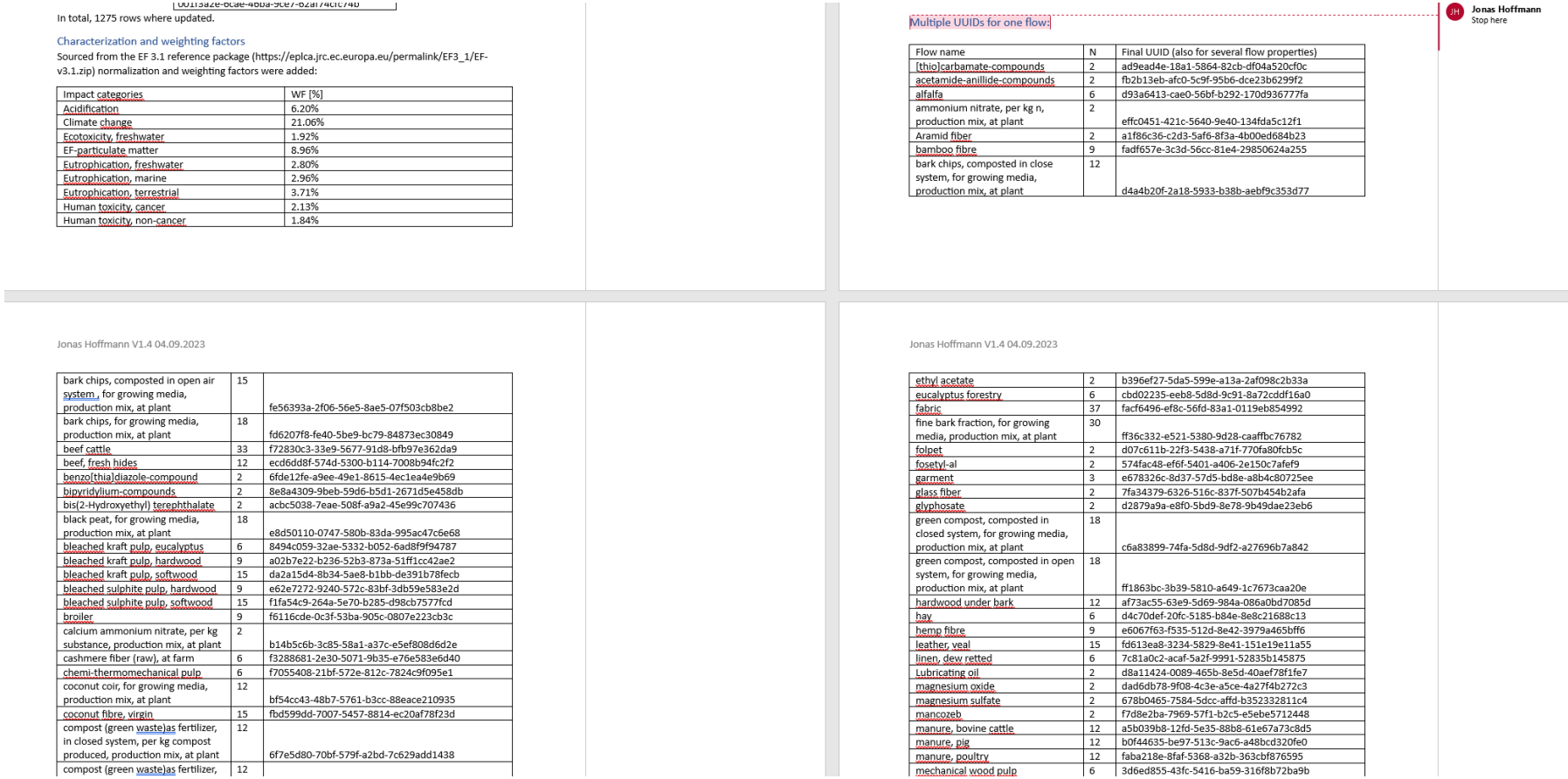

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alfalfa	6	d93a6413-cae0-56bf-b292-170d936777fa
ammonium nitrate, per kg n, production mix, at plant	2	effc0451-421c-5640-9e40-134fda5c12f1
Aramid fiber	2	a1f86c36-c2d3-5af6-8f3a-4b00ed684b23
bamboo fibre	9	fadf657e-3c3d-56cc-81e4-29850624a255
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beef, fresh hides	12	ecd6dd8f-574d-5300-b114-7008b94fc2f2
benzo[thia]diazole-compound	2	6fde12fe-a9ee-49e1-8615-4ec1ea4e9b69
bipyridylium-compounds	2	8e8a4309-9beb-59d6-b5d1-2671d5e458db
bis(2-Hydroxyethyl) terephthalate	2	acbc5038-7eae-508f-a9a2-45e99c707436
black peat, for growing media, production mix, at plant	18	e8d50110-0747-580b-83da-995ac47c6e68
bleached kraft pulp, eucalyptus	6	8494c059-32ae-5332-b052-6ad8f9f94787
bleached kraft pulp, hardwood	9	a02b7e22-b236-52b3-873a-51ff1cc42ae2
bleached kraft pulp, softwood	15	da2a15d4-8b34-5ae8-b1bb-de391b78fecb
bleached sulphite pulp, hardwood	9	e62e7272-9240-572c-83bf-3db59e583e2d
bleached sulphite pulp, softwood	15	f1fa54c9-264a-5e70-b285-d98cb7577fcd
broiler	9	f6116cde-0c3f-53ba-905c-0807e223cb3c
calcium ammonium nitrate, per kg substance, production mix, at plant	2	b14b5c6b-3c85-58a1-a37c-e5ef808d6d2e
cashmere fiber (raw), at farm	6	f3288681-2e30-5071-9b35-e76e583e6d40
chemi-thermomechanical pulp	6	f7055408-21bf-572e-812c-7824c9f095e1
coconut coir, for growing media, production mix, at plant	12	bf54cc43-48b7-5761-b3cc-88eace210935
coconut fibre, virgin	15	fbd599dd-7007-5457-8814-ec20af78f23d
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eucalyptus forestry	6	cbd02235-eeb8-5d8d-9c91-8a72cddf16a0
fabric	37	facf6496-ef8c-56fd-83a1-0119eb854992
fine bark fraction, for growing media, production mix, at plant	30	ff36c332-e521-5380-9d28-caafffbc76782
folpet	2	d07c611b-22f3-5438-a71f-770fa80fcb5c
fosetyl-al	2	574fac48-ef6f-5401-a406-2e150c7afef9
garment	3	e678326c-8d37-57d5-bd8e-a8b4c80725ee
glass fiber	2	7fa34379-6326-516c-837f-507b454b2afa
glyphosate	2	d2879a9a-e8f0-5bd9-8e78-9b49dae23eb6
green compost, composted in closed system, for growing media, production mix, at plant	18	c6a83899-74fa-5d8d-9df2-a27696b7a842
green compost, composted in open system, for growing media, production mix, at plant	18	ff1863bc-3b39-5810-a649-1c7673caa20e
hardwood under bark	12	af73ac55-63e9-5d69-984a-086a0bd7085d
hay	6	d4c70def-20fc-5185-b84e-8e8c21688c13
hemp fibre	9	e6067f63-f535-512d-8e42-3979a465bff6
leather, veal	15	fd613ea8-3234-5829-8e41-151e19e11a55
linen, dew retted	6	7c81a0c2-acaf-5a2f-9991-52835b145875
Lubricating oil	2	d8a11424-0089-465b-8e5d-40aef78f1fe7
magnesium oxide	2	dad6db78-9f08-4c3e-a5ce-4a27f4b272c3
magnesium sulfate	2	678b0465-7584-5dcc-affd-b352332811c4
mancozeb	2	f7d8e2ba-7969-57f1-b2c5-e5ebe5712448
manure, bovine cattle	12	a5b039b8-12fd-5e35-88b8-61e67a73c8d5
manure, pig	12	b0f44635-be97-513c-9ac6-a48bcd320fe0
manure, poultry	12	faba218e-8faf-5368-a32b-363cbf876595
mechanical wood pulp	6	3d6ed855-43fc-5416-ba59-316f8b72ba9b

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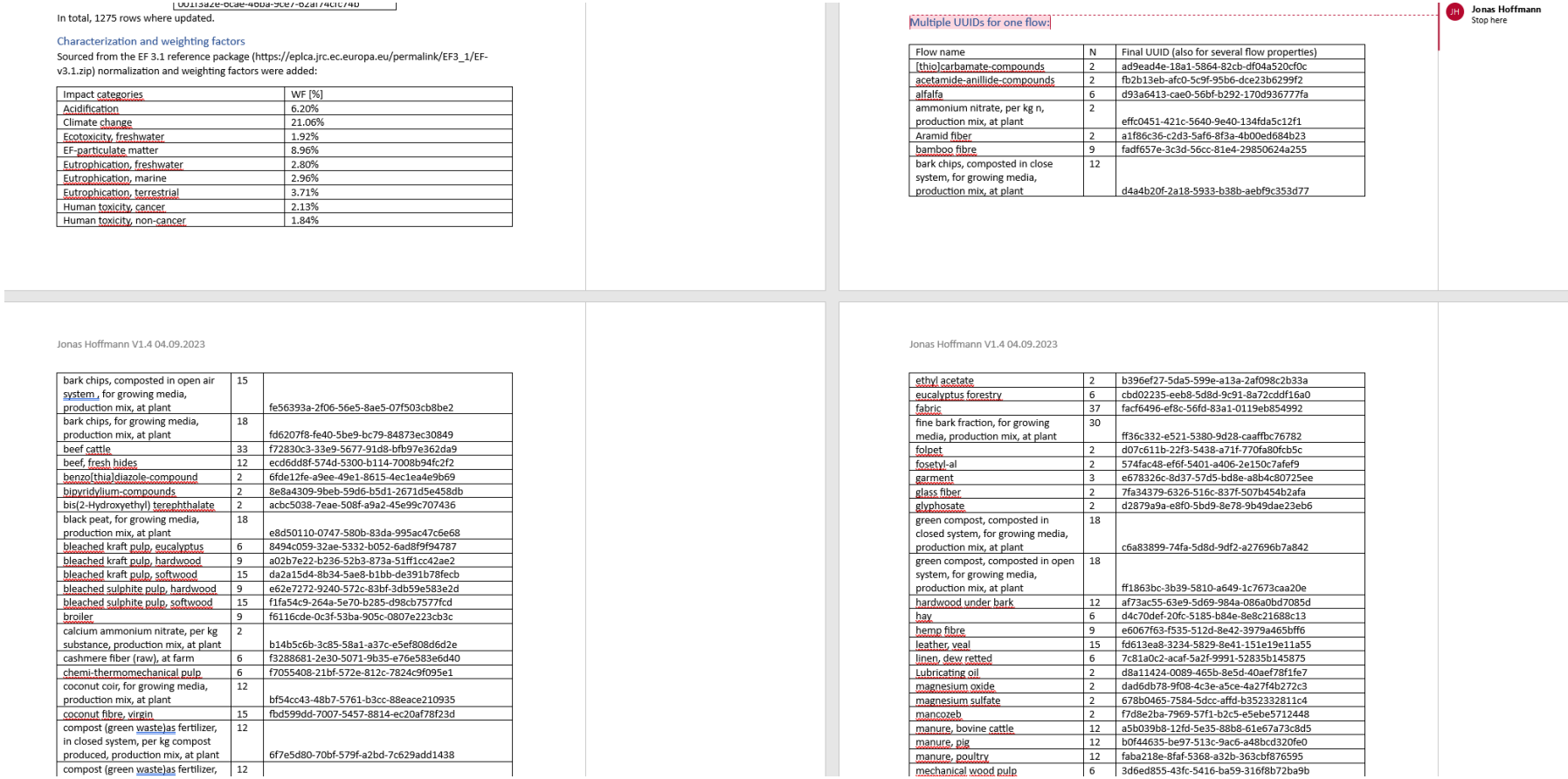

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Climate change	21.06%
Ecotoxicity, freshwater	1.92%
EF-particulate matter	8.96%
Eutrophication, freshwater	2.80%
Eutrophication, marine	2.96%
Eutrophication, terrestrial	3.71%
Human toxicity, cancer	2.13%
Human toxicity, non-cancer	1.84%

Multiple UUIDs for one flow:

Jonas Hoffmann
Stop here

Flow name	N	Final UUID (also for several flow properties)
[thio]carbamate-compounds	2	ad9ead4e-18a1-5864-82cb-df04a520cf0c
acetamide-anillide-compounds	2	fb2b13eb-afc0-5c9f-95b6-dce23b6299f2
alfalfa	6	d93a6413-cae0-56bf-b292-170d936777fa
ammonium nitrate, per kg n, production mix, at plant	2	effc0451-421c-5640-9e40-134fda5c12f1
Aramid fiber	2	a1f86c36-c2d3-5af6-8f3a-4b00ed684b23
bamboo fibre	9	fadf657e-3c3d-56cc-81e4-29850624a255
bark chips, composted in close system, for growing media, production mix, at plant	12	d4a4b20f-2a18-5933-b38b-aebf9c353d77

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bark chips, composted in open air system , for growing media, production mix, at plant	15	fe56393a-2f06-56e5-8ae5-07f503cb8be2
bark chips, for growing media, production mix, at plant	18	fd6207f8-fe40-5be9-bc79-84873ec30849
beef cattle	33	f72830c3-33e9-5677-91d8-bfb97e362da9
beef, fresh hides	12	ecd6dd8f-574d-5300-b114-7008b94fc2f2
benzo[thia]diazole-compound	2	6fde12fe-a9ee-49e1-8615-4ec1ea4e9b69
bipyridylium-compounds	2	8e8a4309-9beb-59d6-b5d1-2671d5e458db
bis(2-Hydroxyethyl) terephthalate	2	acbc5038-7eae-508f-a9a2-45e99c707436
black peat, for growing media, production mix, at plant	18	e8d50110-0747-580b-83da-995ac47c6e68
bleached kraft pulp, eucalyptus	6	8494c059-32ae-5332-b052-6ad8f9f94787
bleached kraft pulp, hardwood	9	a02b7e22-b236-52b3-873a-51ff1cc42ae2
bleached kraft pulp, softwood	15	da2a15d4-8b34-5ae8-b1bb-de391b78fecb
bleached sulphite pulp, hardwood	9	e62e7272-9240-572c-83bf-3db59e583e2d
bleached sulphite pulp, softwood	15	f1fa54c9-264a-5e70-b285-d98cb7577fcd
broiler	9	f6116cde-0c3f-53ba-905c-0807e223cb3c
calcium ammonium nitrate, per kg substance, production mix, at plant	2	b14b5c6b-3c85-58a1-a37c-e5ef808d6d2e
cashmere fiber (raw), at farm	6	f3288681-2e30-5071-9b35-e76e583e6d40
chemi-thermomechanical pulp	6	f7055408-21bf-572e-812c-7824c9f095e1
coconut coir, for growing media, production mix, at plant	12	bf54cc43-48b7-5761-b3cc-88eace210935
coconut fibre, virgin	15	fbd599dd-7007-5457-8814-ec20af78f23d
compost (green waste)as fertilizer, in closed system, per kg compost produced, production mix, at plant	12	6f7e5d80-70bf-579f-a2bd-7c629add1438
compost (green waste)as fertilizer,	12	

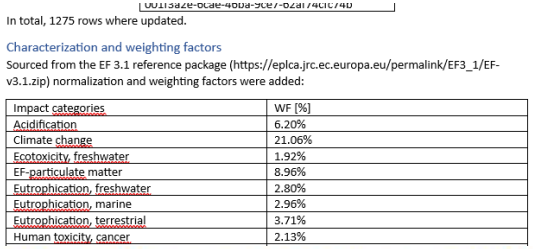
Jonas Hoffmann V1.4 04.09.2023

ethyl acetate	2	b396ef27-5da5-599e-a13a-2af098c2b33a
eucalyptus forestry	6	cbd02235-eeb8-5d8d-9c91-8a72cddf16a0
fabric	37	facf6496-ef8c-56fd-83a1-0119eb854992
fine bark fraction, for growing media, production mix, at plant	30	ff36c332-e521-5380-9d28-caafffbc76782
folpet	2	d07c611b-22f3-5438-a71f-770fa80fcb5c
fosetyl-al	2	574fac48-ef6f-5401-a406-2e150c7afef9
garment	3	e678326c-8d37-57d5-bd8e-a8b4c80725ee
glass fiber	2	7fa34379-6326-516c-837f-507b454b2afa
glyphosate	2	d2879a9a-e8f0-5bd9-8e78-9b49dae23eb6
green compost, composted in closed system, for growing media, production mix, at plant	18	c6a83899-74fa-5d8d-9df2-a27696b7a842
green compost, composted in open system, for growing media, production mix, at plant	18	ff1863bc-3b39-5810-a649-1c7673caa20e
hardwood under bark	12	af73ac55-63e9-5d69-984a-086a0bd7085d
hay	6	d4c70def-20fc-5185-b84e-8e8c21688c13
hemp fibre	9	e6067f63-f535-512d-8e42-3979a465bff6
leather, veal	15	fd613ea8-3234-5829-8e41-151e19e11a55
linen, dew retted	6	7c81a0c2-acaf-5a2f-9991-52835b145875
Lubricating oil	2	d8a11424-0089-465b-8e5d-40aef78f1fe7
magnesium oxide	2	dad6db78-9f08-4c3e-a5ce-4a27f4b272c3
magnesium sulfate	2	678b0465-7584-5dcc-affd-b352332811c4
mancozeb	2	f7d8e2ba-7969-57f1-b2c5-e5ebe5712448
manure, bovine cattle	12	a5b039b8-12fd-5e35-88b8-61e67a73c8d5
manure, pig	12	b0f44635-be97-513c-9ac6-a48bcd320fe0
manure, poultry	12	faba218e-8faf-5368-a32b-363cbf876595
mechanical wood pulp	6	3d6ed855-43fc-5416-ba59-316f8b72ba9b

GreenDelta

Preparing the EF3.1 database for openLCA

- It was not exactly nice and easy

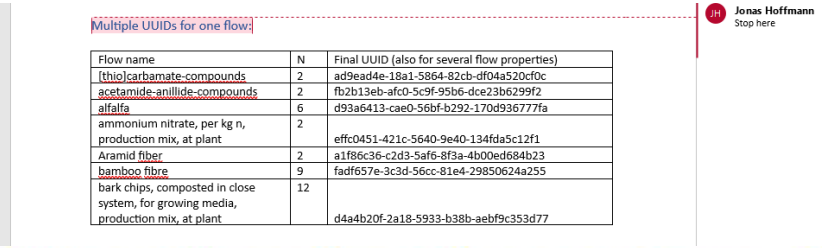


In total, 1275 rows where updated.

Characterization and weighting factors

Sourced from the EF 3.1 reference package (https://eplca.jrc.ec.europa.eu/permalink/EF3_1/EF-v3.1.zip) normalization and weighting factors were added:

Impact categories	WF [%]
Acidification	6.20%
Climate change	21.06%
Ecotoxicity, freshwater	1.92%
EF-particulate matter	8.96%
Eutrophication, freshwater	2.80%
Eutrophication, marine	2.96%
Eutrophication, terrestrial	3.71%
Human toxicity, cancer	2.13%



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Jonas Hoffmann
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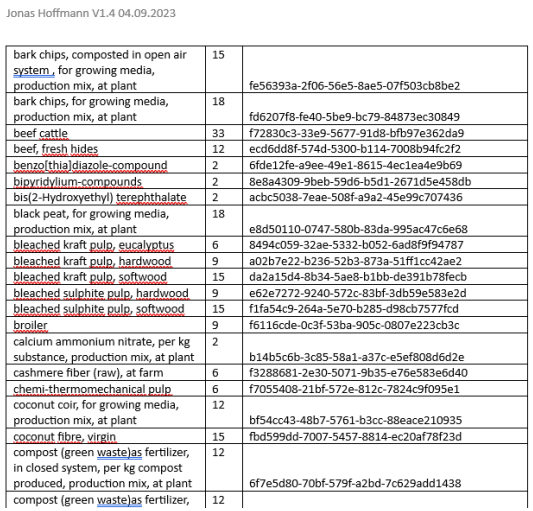
alfalfa	6	d93a6413-cae0-56bf-b292-170d936777fa
ammonium nitrate, per kg n, production mix, at plant	2	effc0451-421c-5640-9e40-134fda5c12f1
Aramid fiber	2	a1f86c36-c2d3-5af6-8f3a-4b00ed684b23
bamboo fibre	9	fadf657e-3c3d-56cc-81e4-29850624a255
bark chips, composted in close system, for growing media, production mix, at plant	12	d4a4b20f-2a18-5933-b38b-aebf9c353d77

- All datasets registered and published are compliant with quality requirements aimed at guarantee datasets quality



Jonas Hoffmann V1.4 04.09.2023

bark chips, composted in open air system , for growing media, production mix, at plant	15	fe56393a-2f06-56e5-8ae5-07f503cb8be2
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bleached sulphite pulp, hardwood	9	e62e7272-9240-572c-83bf-3db59e583e2d
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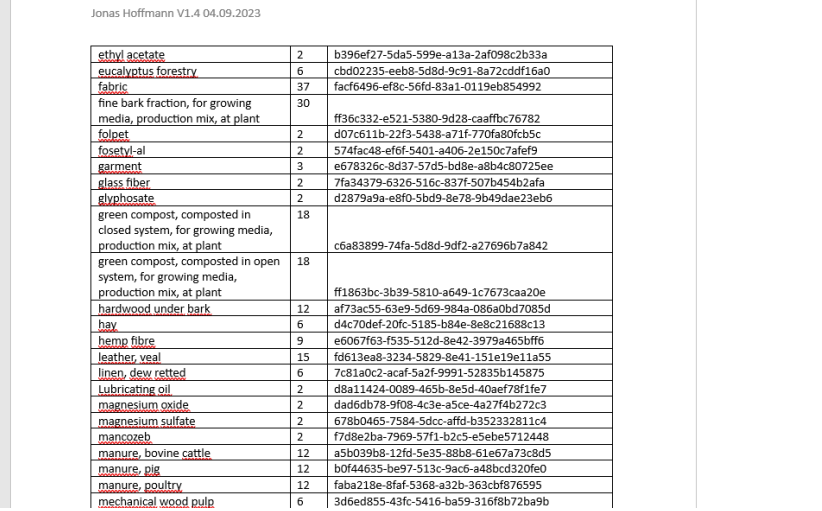

Jonas Hoffmann V1.4 04.09.2023

ethyl acetate	2	b396ef27-5da5-599e-a13a-2af098c2b33a
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folpet	2	d07c611b-22f3-5438-a71f-770fa80fcb5c
fosetyl-al	2	574fac48-ef6f-5401-a406-2e150c7afef9
garment	3	e678326c-8d37-57d5-bd8e-a8b4c80725ee
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glyphosate	2	d2879a9a-e8f0-5bd9-8e78-9b49dae23eb6
green compost, composted in closed system, for growing media, production mix, at plant	18	c6a83899-74fa-5d8d-9df2-a27696b7a842
green compost, composted in open system, for growing media, production mix, at plant	18	ff1863bc-3b39-5810-a649-1c7673caa20e
hardwood under bark	12	af73ac55-63e9-5d69-984a-086a0bd7085d
hay	6	d4c70def-20fc-5185-b84e-8e8c21688c13
hemp fibre	9	e6067f63-f535-512d-8e42-3979a465bff6
leather, veal	15	fd613ea8-3234-5829-8e41-151e19e11a55
linen, dew retted	6	7c81a0c2-acaf-5a2f-9991-52835b145875
Lubricating oil	2	d8a11424-0089-465b-8e5d-40aef78f1fe7
magnesium oxide	2	dad6db78-9f08-4c3e-a5ce-4a27f4b272c3
magnesium sulfate	2	678b0465-7584-5dcc-affd-b352332811c4
mancozeb	2	f7d8e2ba-7969-57f1-b2c5-e5ebe5712448
manure, bovine cattle	12	a5b039b8-12fd-5e35-88b8-61e67a73c8d5
manure, pig	12	b0f44635-be97-513c-9ac6-a48bcd320fe0
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mechanical wood pulp	6	3d6ed855-43fc-5416-ba59-316f8b72ba9b

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Preparing the EF3.1 database for openLCA

- It was not exactly nice and easy

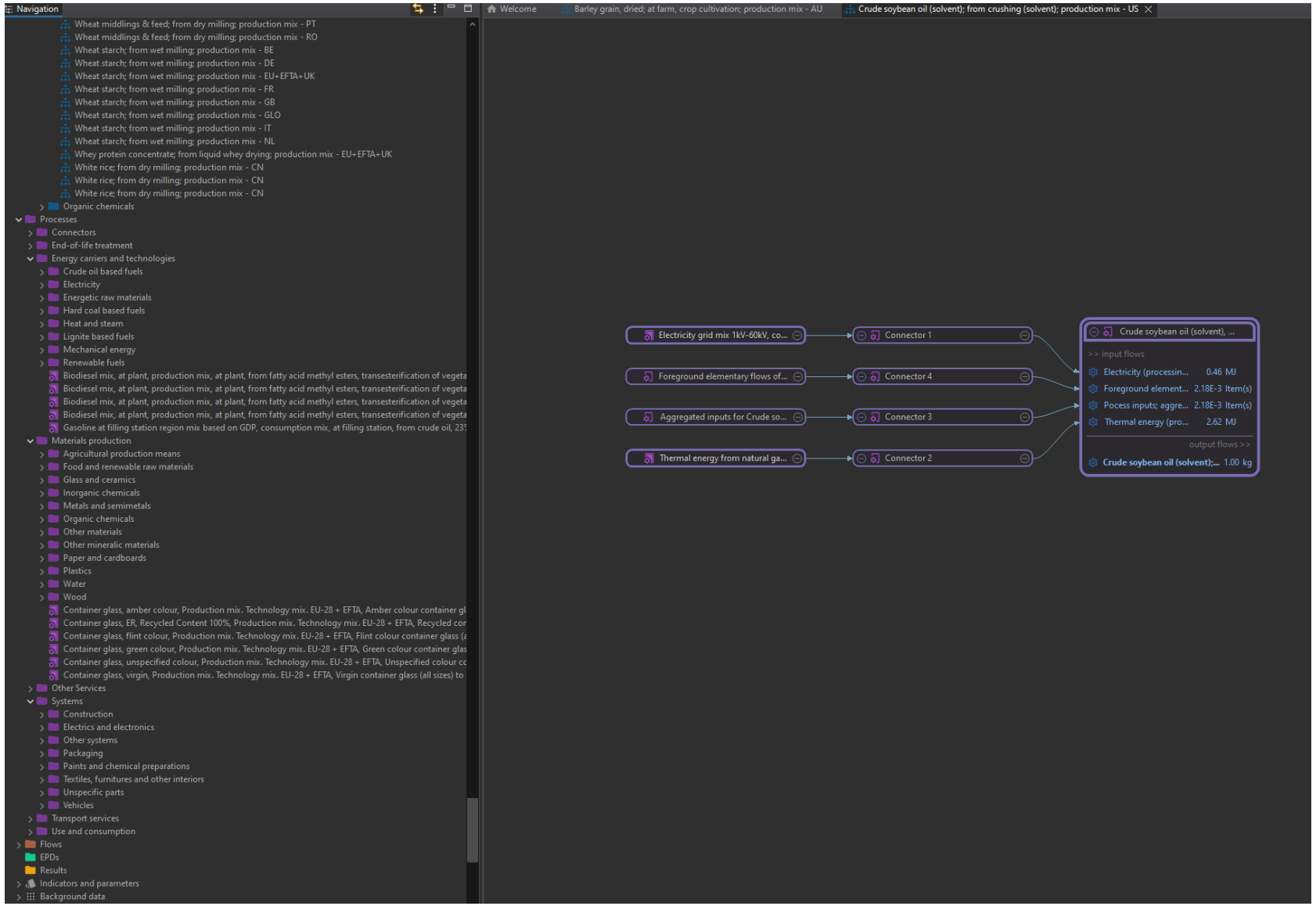
The ILCD datasets from the respective nodes were imported into openLCA 2.0.2 in the following order:

Node	File	URL
JRC	EF-v3.1	https://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml
Sphera	EF3_1_official_data_energy_transport_packaging_EoL	https://lcdn.thinkstep.com/
	EF31_pt2_official_datasets	
CEPE	EF_3_1_logical_datastock	http://lcdn-cepe.org/
ESIG	EF_SOLVENTS_3_1_PUBLIC	https://data.esig.org/
ecoinvent	EF3_1_Chemicals_Part_1_public[1]	http://ecoinvent.lca-data.com/
	EF3_1_Chemicals_Part_2_public	
	EF3_1_Apparel_1_public	
	EF3_1_Apparel_2_public	
	EF3_1_Apparel_3_public	
	EF3_1_Others_public	
	EF3_1_Plastics_public	
Blonk	EF_3_1_MASTER	http://lcdn.blonkconsultants.nl/Node/
	EF_3_1_AGROFOOD	
	EF_3_1_RENEWABLES	
	EF_3_1_FEED	

Preparing the EF3.1 database for openLCA

- Errors fixed
- Usability improved (locations to product systems names)
- LCIA methods also imported
- Flow nomenclature etc. untouched

Preparing the EF3.1 database for openLCA: result



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A closer look at the database (live)

How to get the database, the DAL

DAL: Database Analyser and Launcher

- New tool: inspect content of a database, and launch it, for export into openLCA

Hi Andreas,

[redacted] has an open source license, and it can be used in commercial projects. The point is though that if you CHANGE the database or embed it into some kind of tool, you CANNOT sell that changed database or database-tool combination commercially – the combination has to be open source too.

What can be done though is say developing a tool (e.g. Simapro), that is independent from the database (eg. Ecoinvent) and then make available the tool available for a fee.

Kind regards

DAL: Database Analyser and Launcher

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DAL: Database Analyser and Launcher

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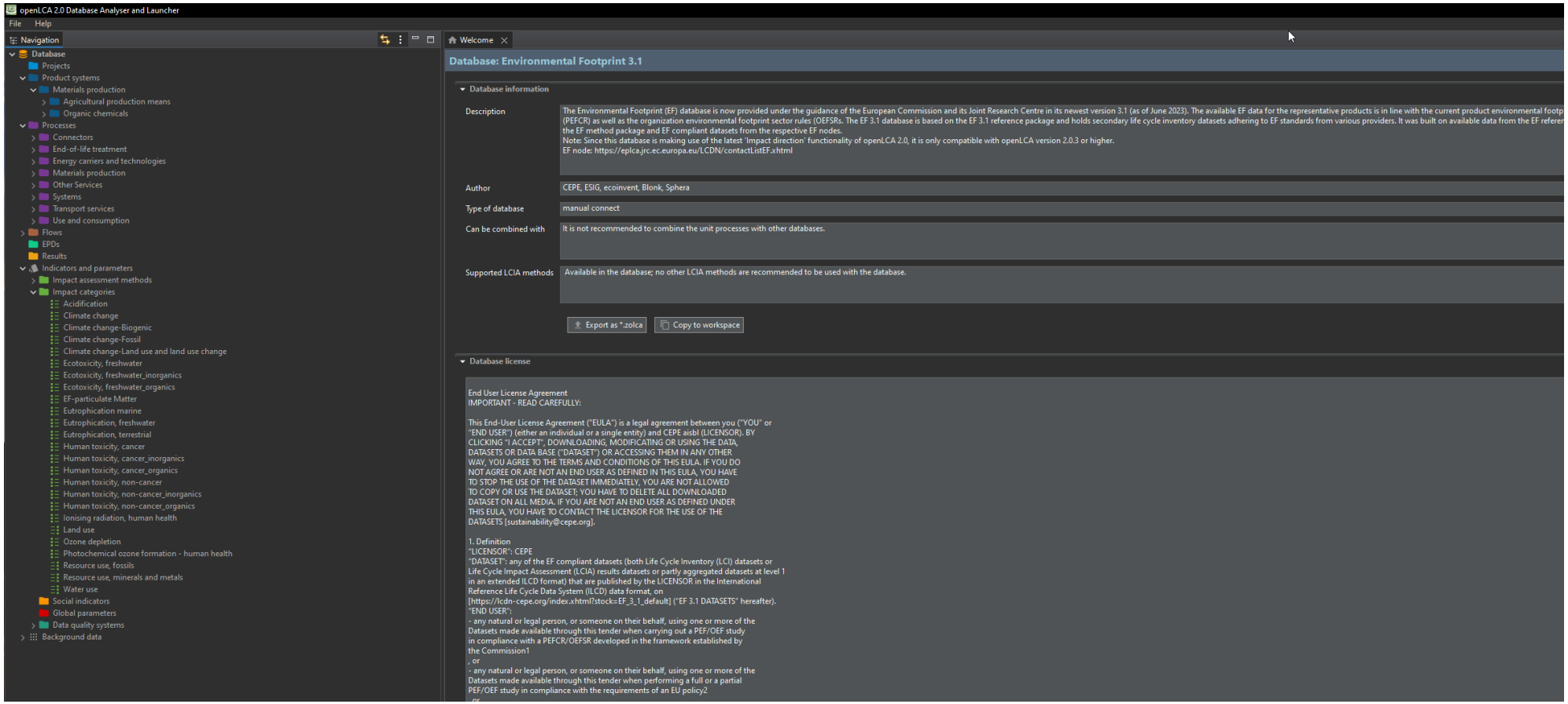

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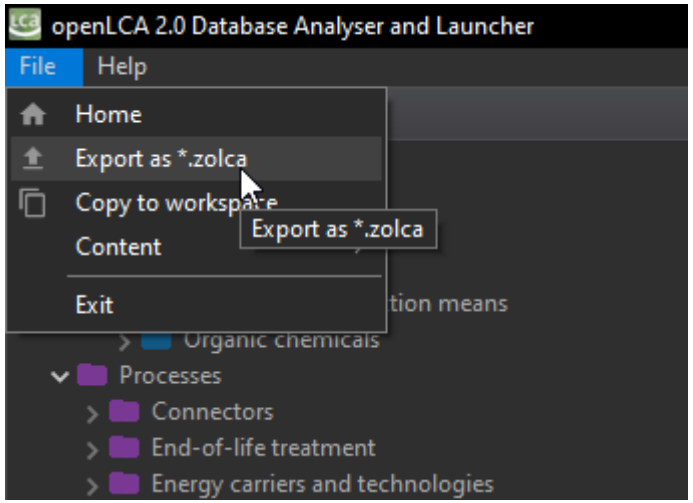

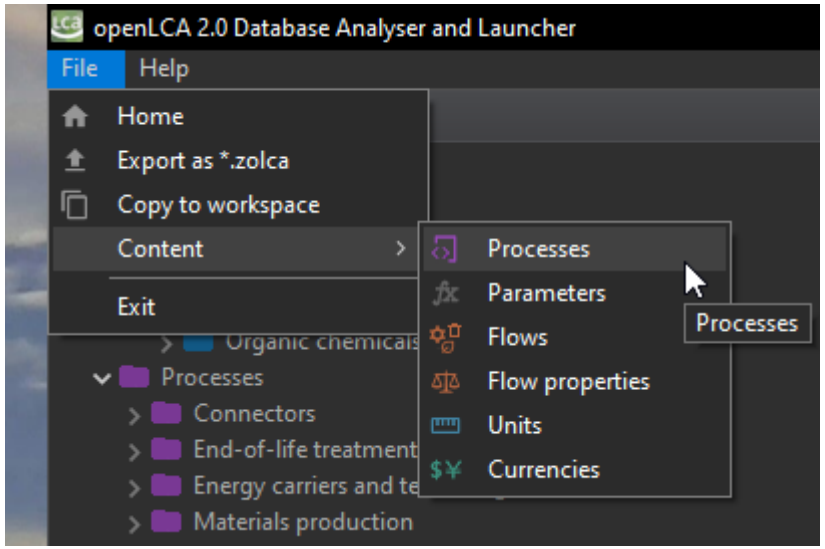

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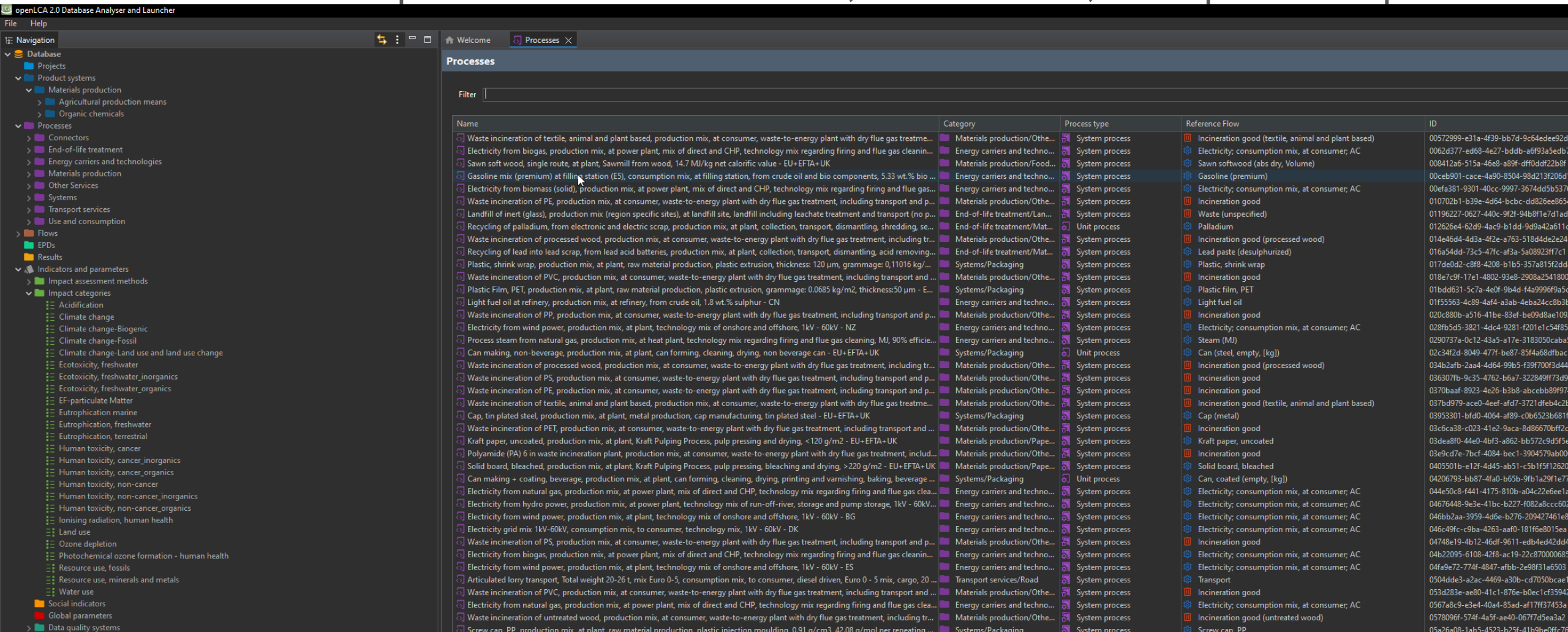

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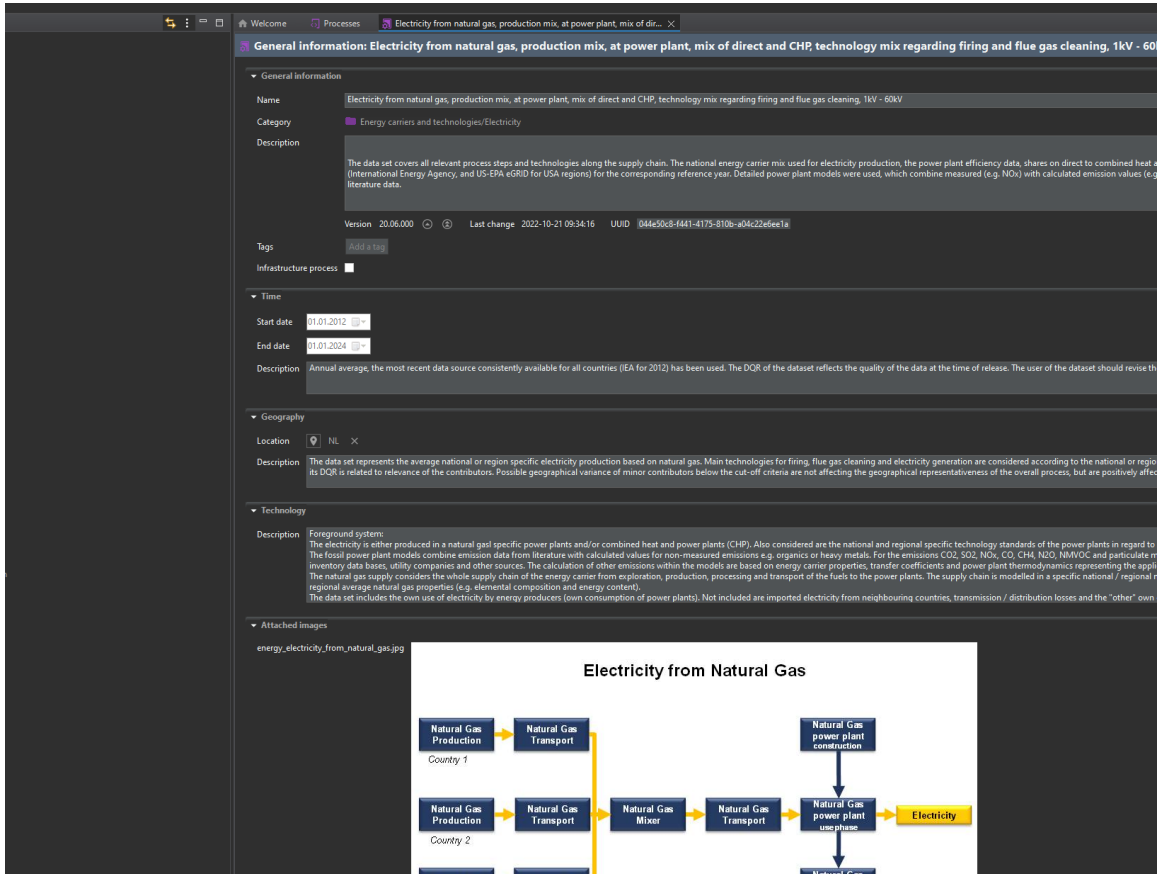

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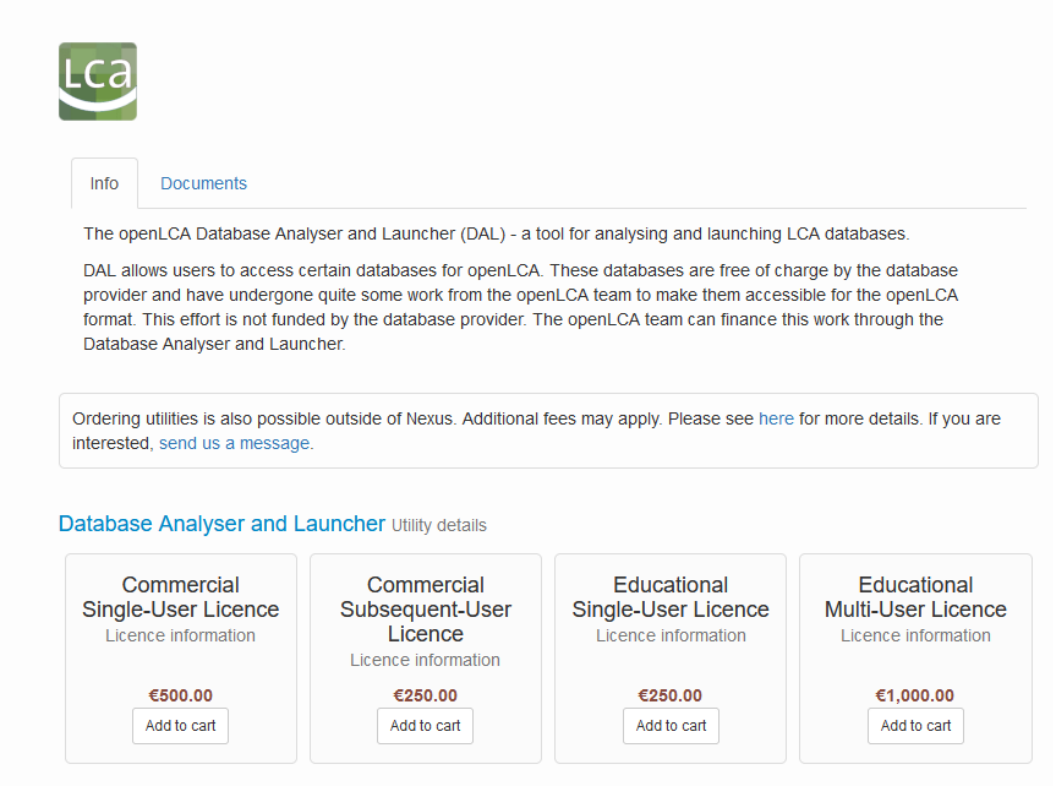
DAL is used for distributing the EF database

- It can be obtained from openLCA Nexus, https://nexus.openlca.org/utility/Database%20Analyser%20and%20Launcher



Q&A

That’s about it…your turn now!

Q&A Session

Thank you!

GreenDelta GmbH
Kaiserdamm 13, 14057 Berlin
www.greendelta.com

openLCA

GreenDelta

sustainability consulting + software