openLCA nexus quick explanation

Web-based Life Cycle Assessment data exchange and web shop

Version: 1.0

Date: May 2013

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Content

1 Introduction: What is openLCA nexus?

It is one of the "common agreements" in Life Cycle and Sustainability Assessment that data collection is one of the bottlenecks for any study; that it is difficult to find suitable datasets; and that it is even more challenging to combine data sets from different sources into one model in a meaningful way. And on a more technical level, it is even challenging to import and use data from different sources in LCA modeling software.

openLCA nexus is a web-based system to find, select, download, and if needed purchase, life cycle assessment and sustainability data sets from several of the most relevant data sources worldwide. Selected data sets can be downloaded and imported into openLCA, the open source LCA software that is available for free (and fully open source). Both openLCA[1] and the openLCA nexus[2] are created and maintained by GreenDelta[3].

This text explains how to use the openLCA nexus. A more detailed technical and methodological background paper is in preparation.

2 Data available in the openLCA nexus

The list of available data sets in openLCA nexus is growing and includes at present:

- The ecoinvent database (version 2.2)
- All GaBi databases (version 6)
- The social hot spots database (version from April 2013)
- The ÖkobauDat database (version from September 2012)
- The NEEDS database
- The ELCD database (version III)

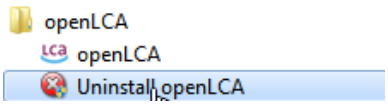
All these data sets can be downloaded and imported into openLCA.

3 Using nexus data in openLCA

Nexus data can only be used in connection with openLCA. You need an openLCA version of 1.3.0 rc1 or higher in order to be able to use nexus data. To do so, please follow these steps.

3.1 Install openLCA and the nexus plugin

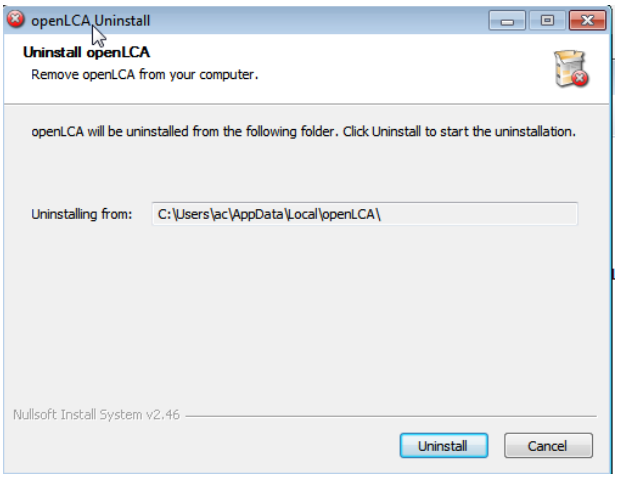
1. if you have a previous version of openLCA installed, uninstall it



[1] www.openlca.org

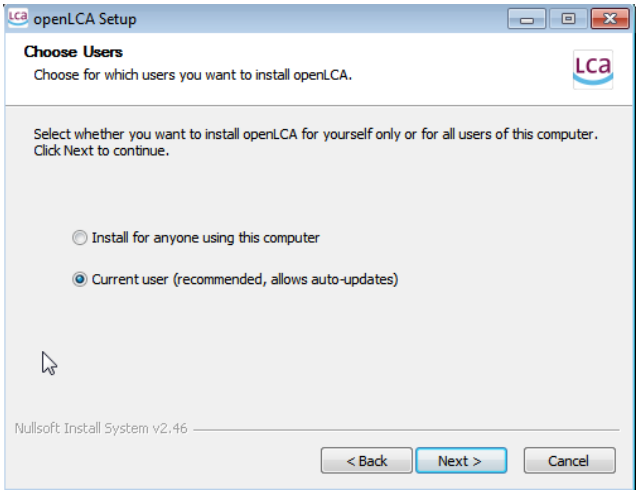
[2] www.nexus.openlca.org

[3] www.greendelta.com



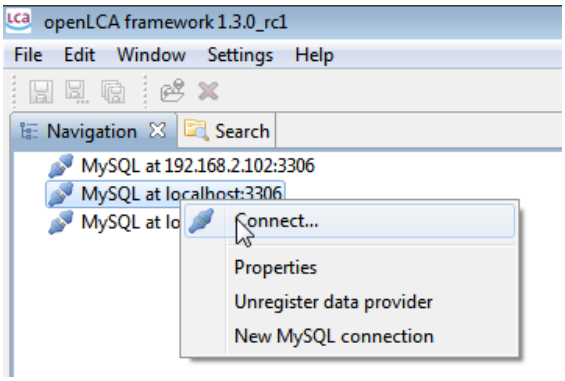
2. If you do not have a new version of openLCA,
   a. download it (www.openlca.org/Downloads), and
   b. install it.

   Especially if you do not usually use the computer with admin rights, it is recommended to install it for the current user:

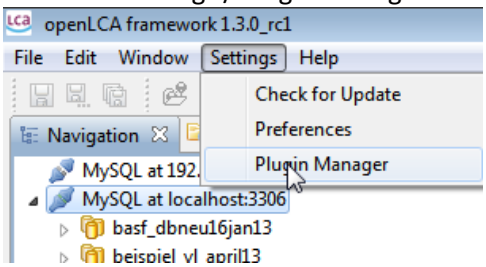


   Remember that you need internet access during the installation as the database software (MySQL) will be downloaded during the installation. If this fails, you will typically receive a “mysql is not a mysql application directory” error when you run openLCA.

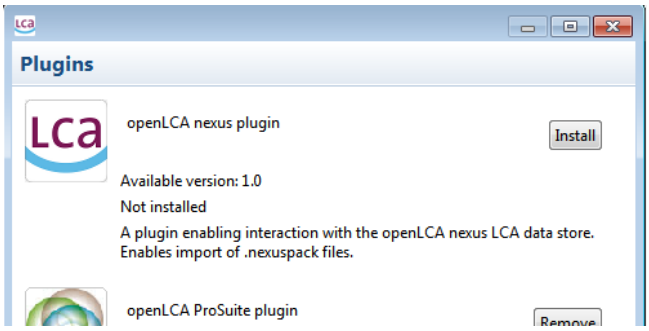
3. Run openLCA, create a database provider if needed, and connect to a database provider.

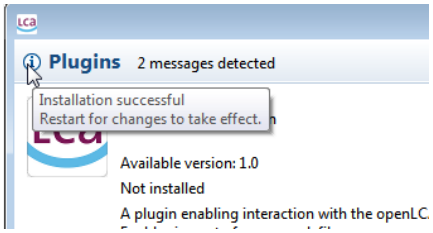


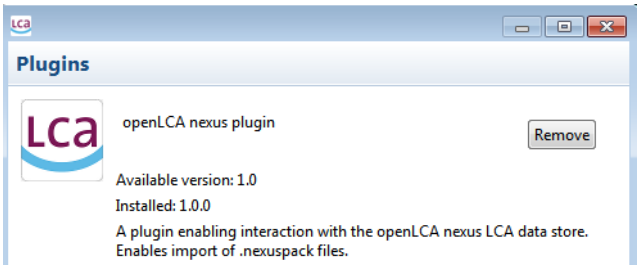
4. Go to Settings / Plugin manager



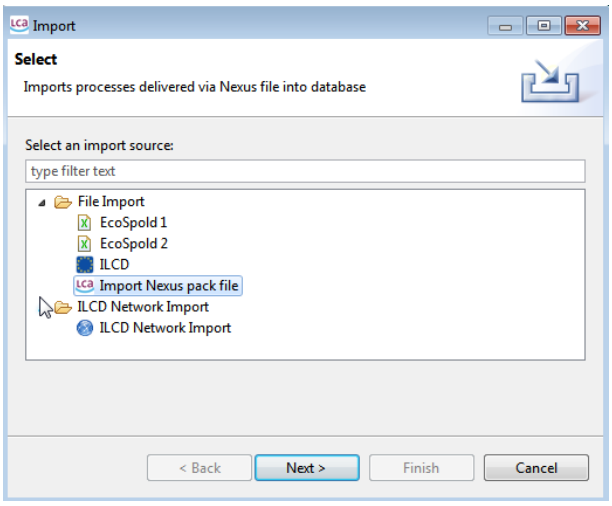
5. Install the openLCA nexus plugin – the plugin will be downloaded from the openLCA server therefore you need internet access. You will need to restart openLCA before the plugin is really installed.







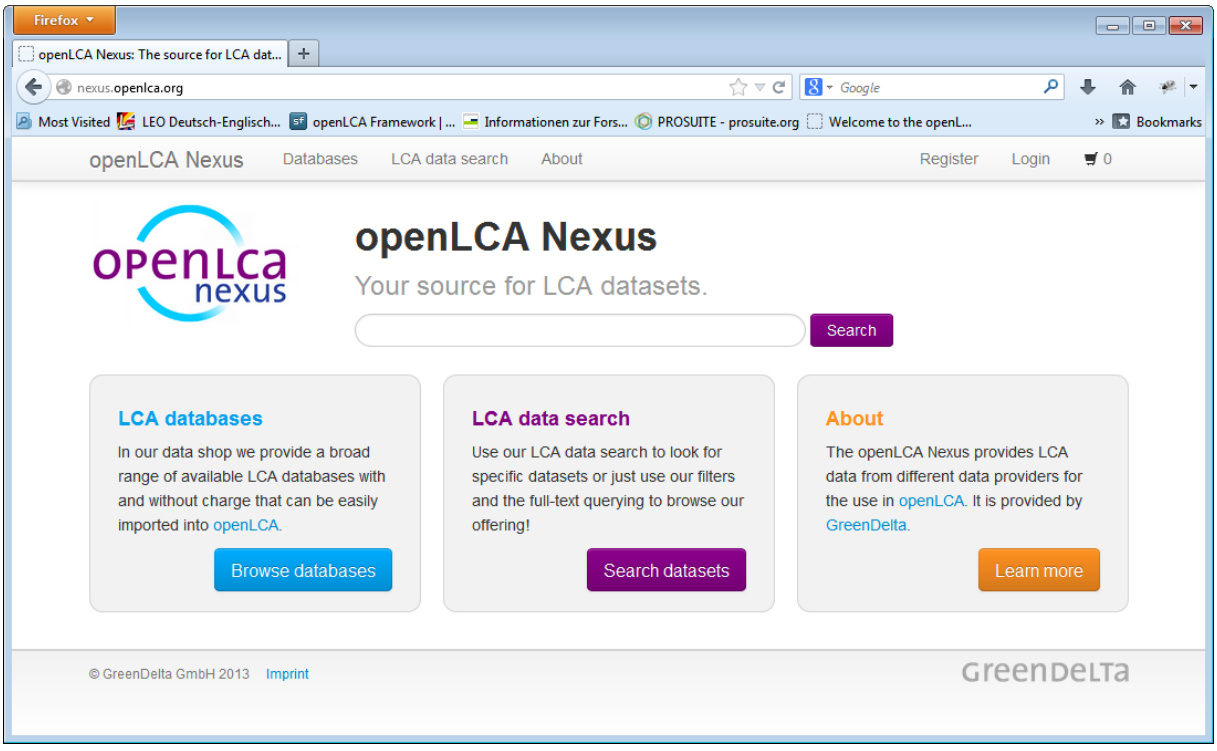
6. After the installation, a new import option is available



3.2 openLCA nexus

3.2.1 Browse data sets in the openLCA nexus

The nexus server is located at www.nexus.openlca.org.

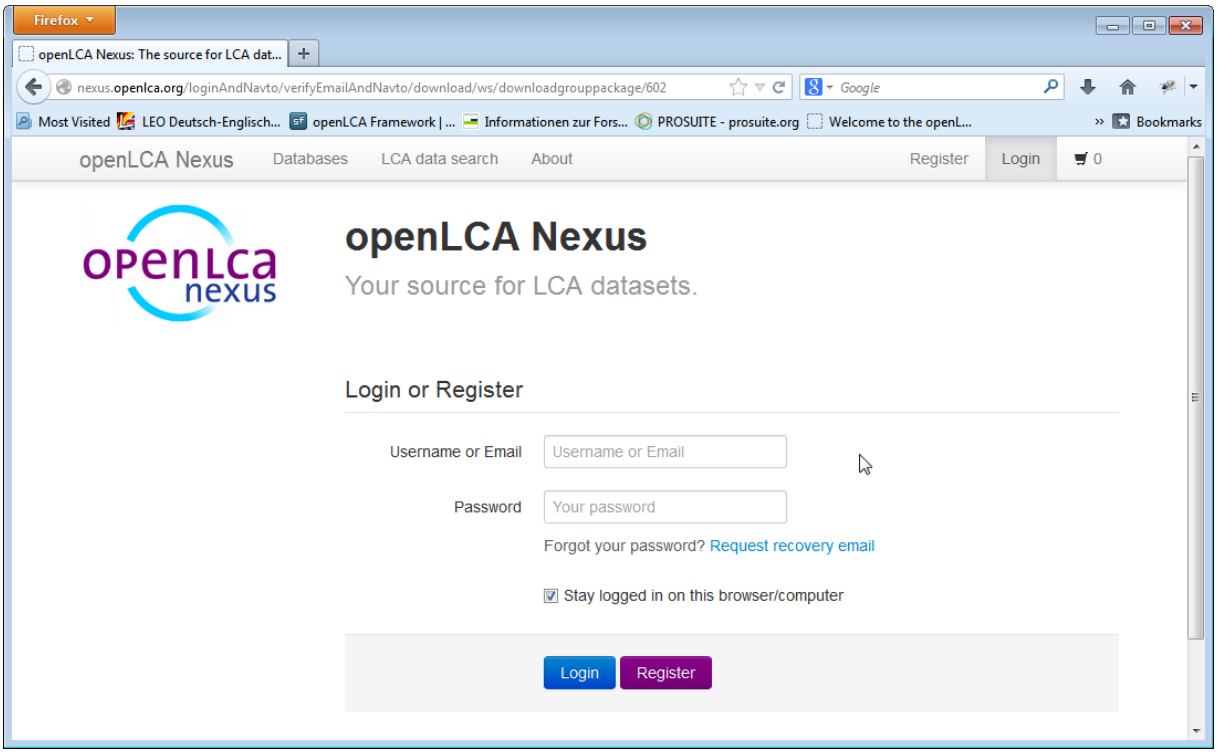


It contains three main sections: The database section describes the different data bases that are available. The LCA data search works similar to a google search; you can query all the available data sets, and filter by various categories, including data provider, geography, age of the data set, and the category of the data set. The 'about' section contains a small and we hope growing documentation.

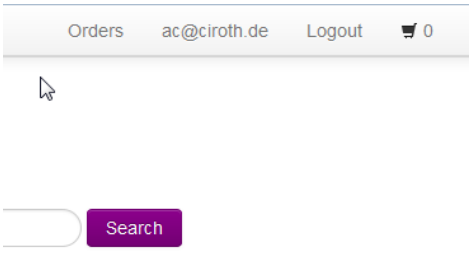
All these elements should be rather self-explanatory. If you have any questions or feedback, however, please let us know.

3.2.2 Register to be able to download

For downloading data sets, you need to register. Also this step should not need much additional explanation. Click on login or register in order to (yes) register or login.

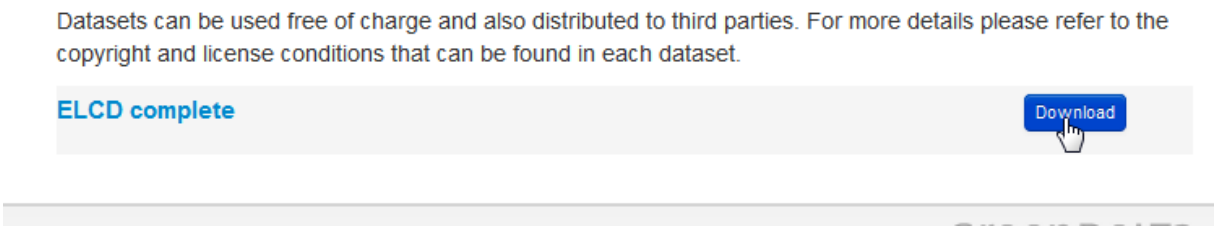


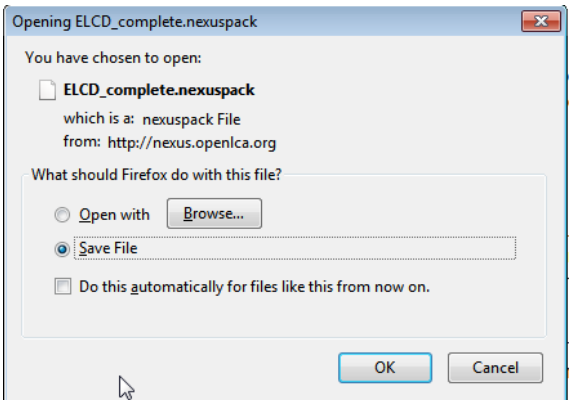
Once you are registered and / or logged in, the menu changes slightly (top-right)



3.2.3 Downloading free data sets

Free databases and data sets can be downloaded directly as soon as you are logged in.

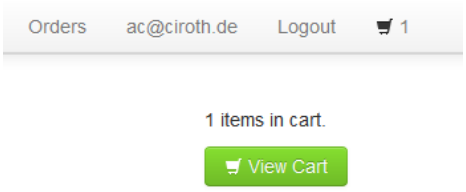




3.2.4 Ordering 'for purchase' data sets

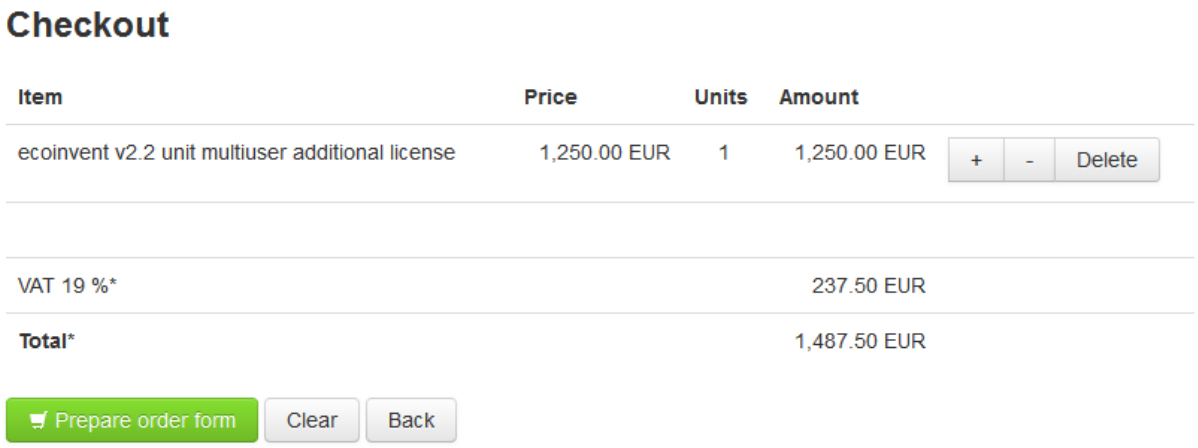
Downloading non-free, "for purchase" data sets requires some more steps. First, you will see prices near the data sets, both at the database section and also on the level of the individual data sets, in the search section. Price is one of the filter categories there, you can therefore also filter your data sets by price.

If you have found the data set you are looking for, click on "add to cart".



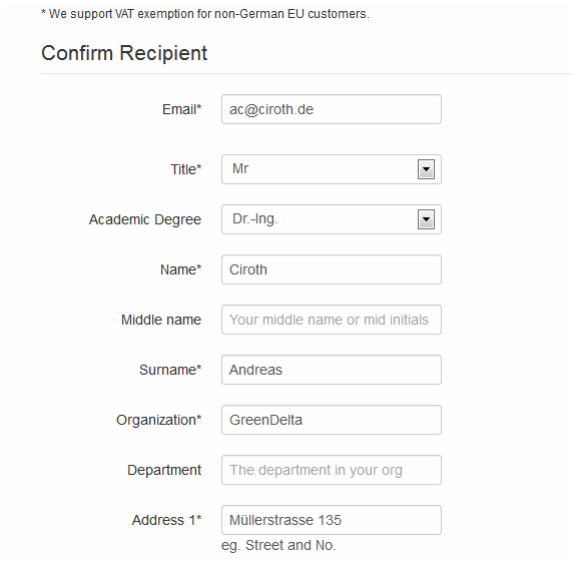
You may of course add more than one database to your cart.

Then, when you are done, click on "view cart".

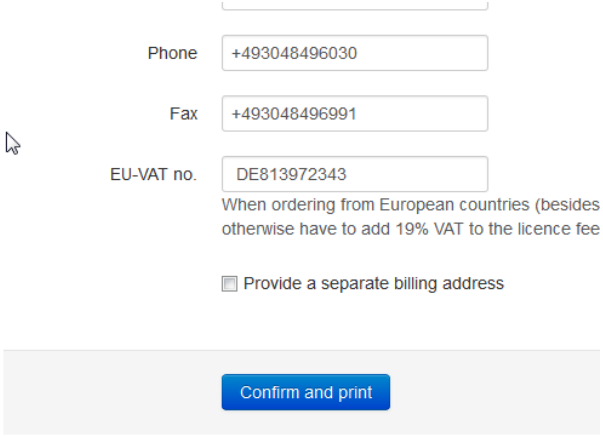


You can here have a final look at your order, and modify if needed. Once you are done, click on "prepare order form".

After this, please fill in your address…

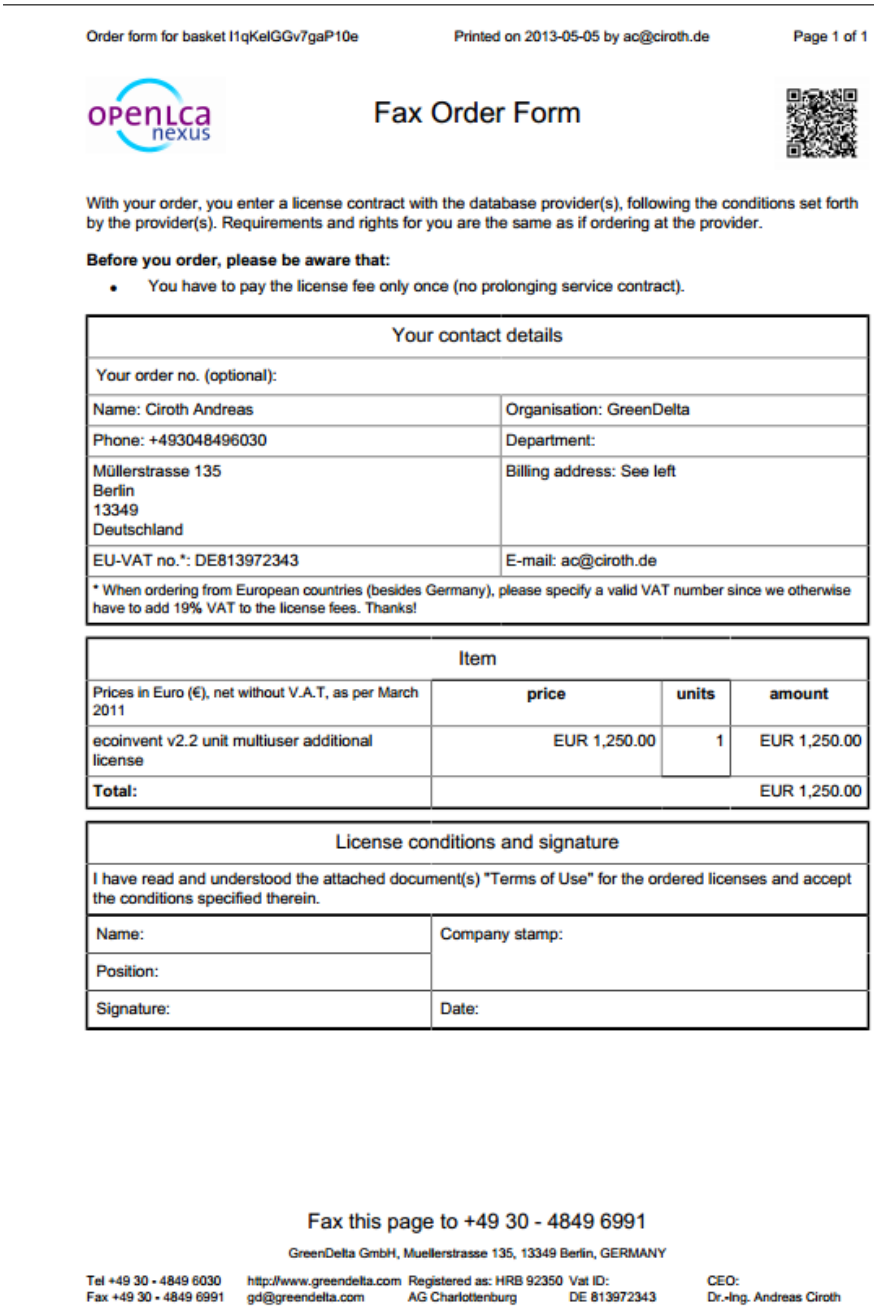


…and then click on confirm and print



This will create the order form together with the respective end user licence agreements of the data sets that you order.

Print and sign this page and send it back to us, via fax or (scanned) as email.



Order form for basket I1qKelGGv7gaP10e Printed on 2013-05-05 by ac@ciroth.de Page 1 of 1

openLCA nexus

Fax Order Form

With your order, you enter a license contract with the database provider(s), following the conditions set forth by the provider(s). Requirements and rights for you are the same as if ordering at the provider.

Before you order, please be aware that:

- You have to pay the license fee only once (no prolonging service contract).

Your contact details	
Your order no. (optional):	
Name: Ciroth Andreas	Organisation: GreenDelta
Phone: +493048496030	Department:
Müllerstrasse 135 Berlin 13349 Deutschland	Billing address: See left
EU-VAT no.*: DE813972343	E-mail: ac@ciroth.de
* When ordering from European countries (besides Germany), please specify a valid VAT number since we otherwise have to add 19% VAT to the license fees. Thanks!	

Item			
Prices in Euro (€), net without V.A.T, as per March 2011	**price**	**units**	**amount**
ecoinvent v2.2 unit multiuser additional license	EUR 1,250.00	1	EUR 1,250.00
Total:			EUR 1,250.00

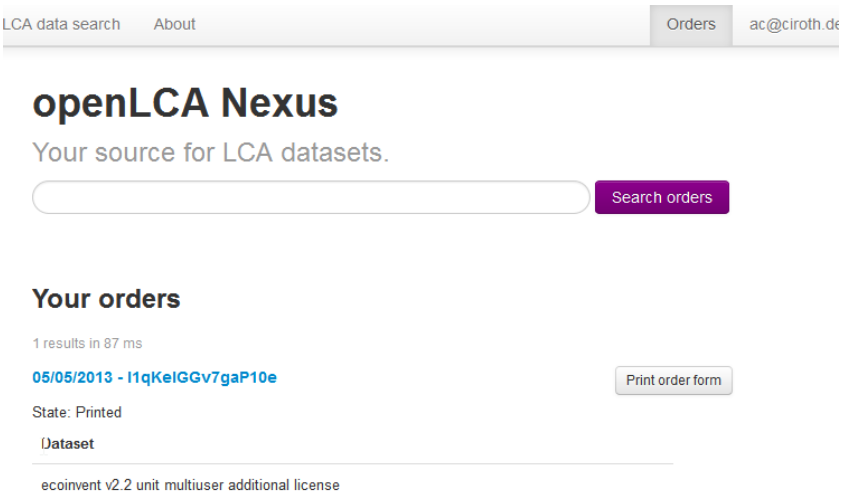
License conditions and signature	
I have read and understood the attached document(s) "Terms of Use" for the ordered licenses and accept the conditions specified therein.	
Name:	Company stamp:
Position:	
Signature:	Date:

Fax this page to +49 30 - 4849 6991

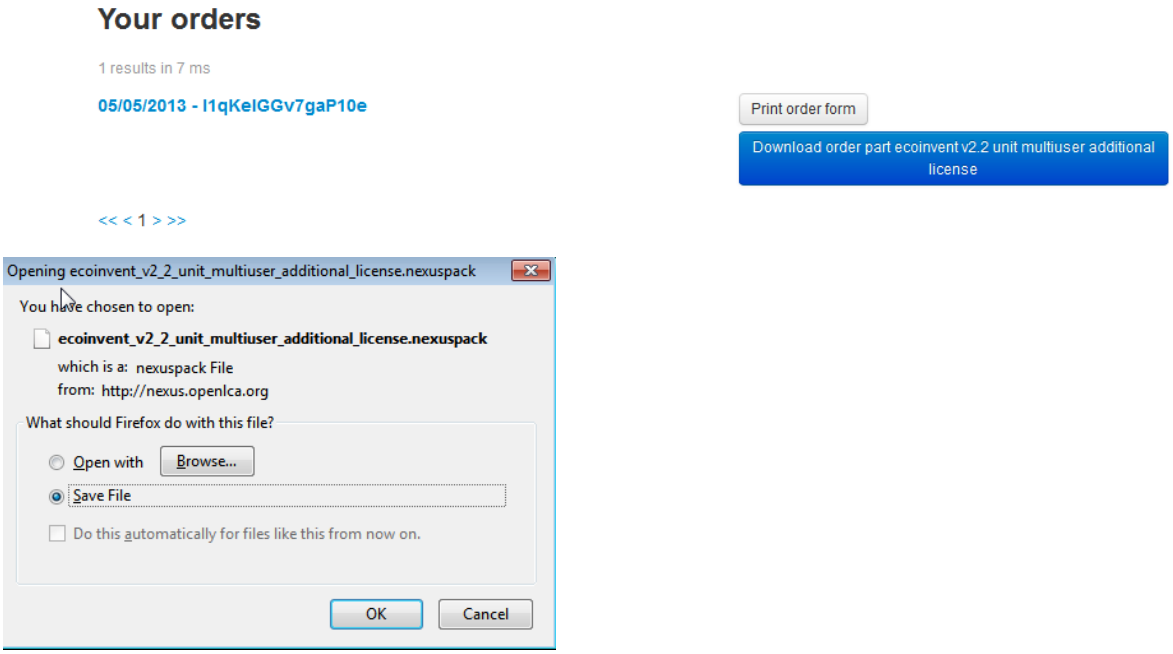
GreenDelta GmbH, Muellerstrasse 135, 13349 Berlin, GERMANY

Tel +49 30 - 4849 6030 http://www.greendelta.com Registered as: HRB 92350 Vat ID: CEO:
Fax +49 30 - 4849 6991 gd@greendelta.com AG Charlottenburg DE 813972343 Dr.-Ing. Andreas Ciroth

In parallel, you can check your order by clicking on the order menu:



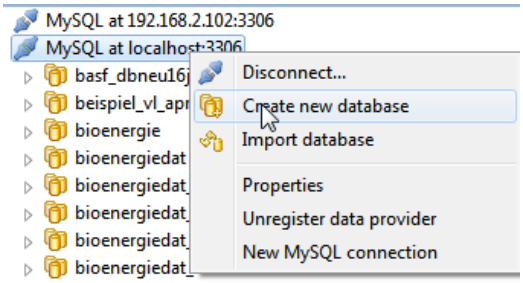
Once we approve your order, you will get a notification and you now can download the order

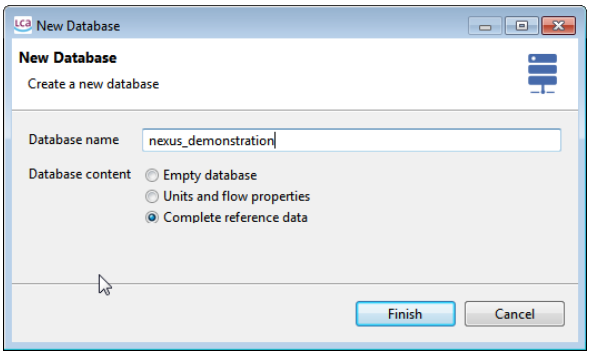


3.3 Importing data into openLCA

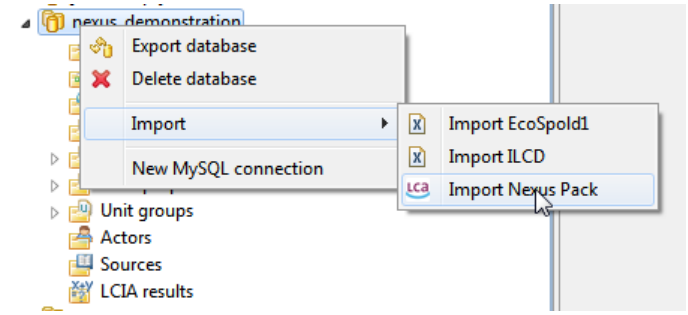
After the download has finished, the “nexus pack” can be imported into openLCA.

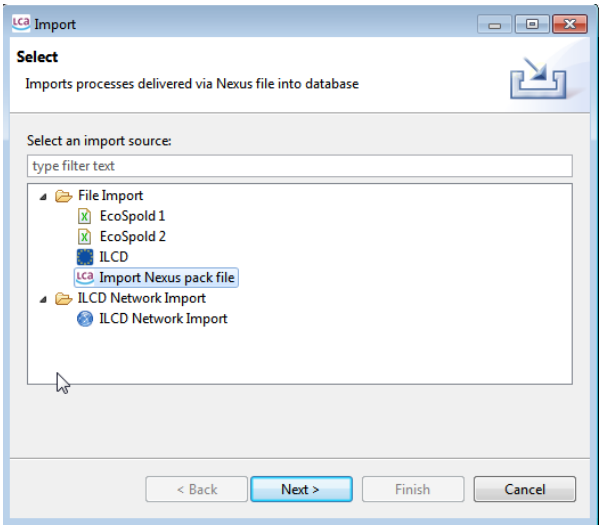
If you want, create a new database in openLCA, with reference data, or use an existing one.

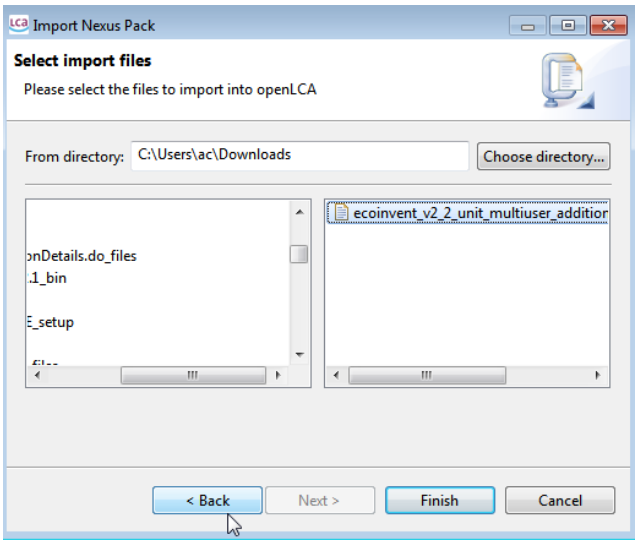




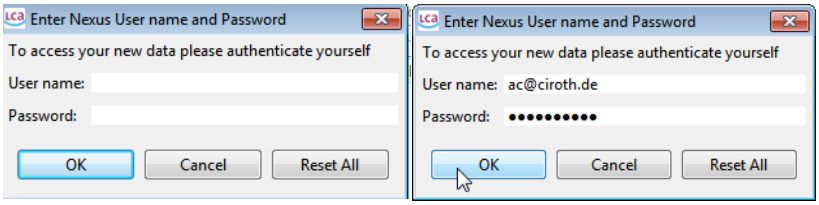
Then, select ‘import nexus pack’ from one of the import menus (context menu / import or file / import)



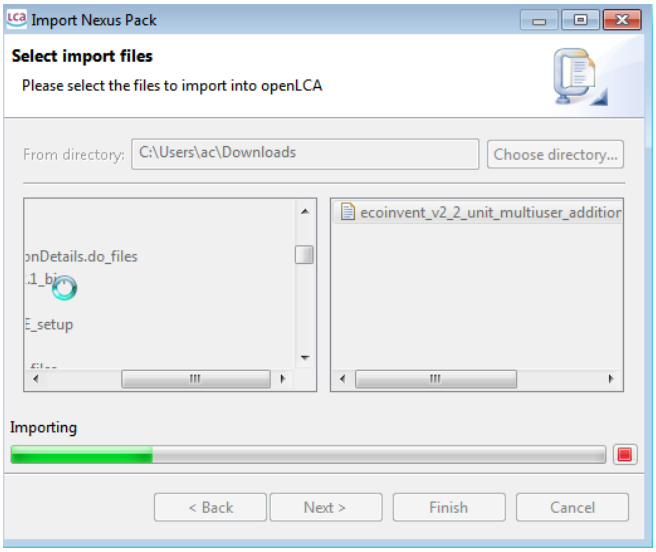




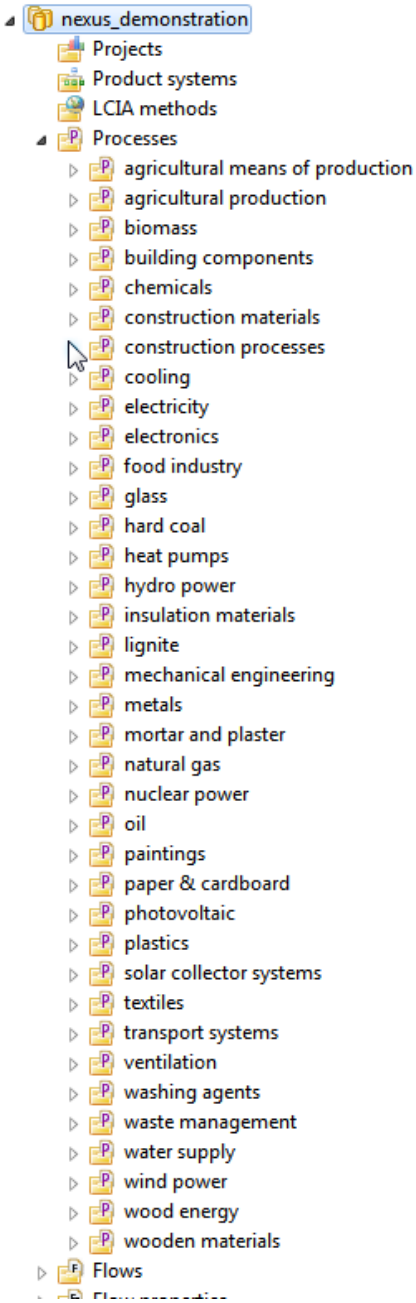
The nexuspack files are encrypted. In order to import them, you need to provide your nexus user account and password before the import starts:



This information is also stored in the data sets, also, but not only, in visible text fields. Therefore, my data sets can be recognized as belonging to me. This is obviously a security measure. Once the provided credentials are correct, the import starts…



..and as soon as it is finished, the data sets are available in openLCA.



-- enjoy!

4 Comments on specific databases

4.1 The Social Hot Spots Database

The Social Hot Spots Database (often abbreviated as “SHDB”) is at present the only existing, comprehensive database for social assessments over the entire life cycle. It is available in openLCA and integrates well with the openLCA modeling environment and also with other databases available in openLCA.

SHDB uses the Global Trade Analysis Project's (GTAP - Version 7) 113-region and 57-sector Input/Output activity model in order to enable geographic-specific product system modeling.

Payment of wages provided by the Global IO model combined with estimates of sector- and country-specific wage rates allows users to estimate labour intensity and report results using Life Cycle Attribute Assessment (scope of a product system at risk of or audited for different social risks/issues).

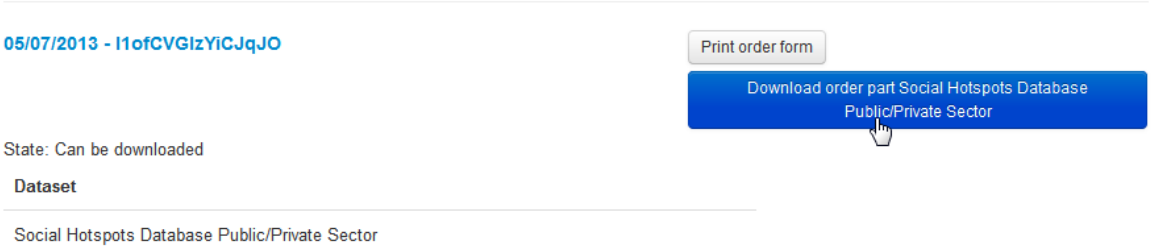
The modeling system, used together with social risk level characterizations, allows users to express social risks and opportunities relative to each of over 100 different indicators by sector and country.

- Users of the database in openLCA will be able to do assessments such as the following:
- Select a product category, sold in a given country, and estimate the global supply chain for it, based on GTAP trade data, in a static global IO model (113 regions, 57 sectors each)
- Estimate the worker-hours associated with each of the "country-specific sectors" in the supply chain; this helps identify what we might call "work hotspots" in the supply chain.
- Identify processes with significant worker-hours which are also at elevated risk relative to specific indicators relating to human rights, worker treatment, poverty, community impacts, and governance.

SHDB is, on the other side, a rather special database, therefore also the import and the available data sets deserve some attention and explanation.

4.1.1 Ordering in nexus, downloading

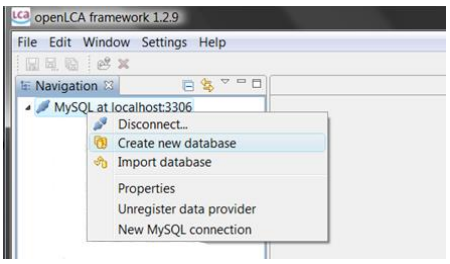
SHDB is one of the "for purchase" databases in openLCA. The ordering procedure and also the download as nexuspack file is identical to all other for purchase databases as described in section 3.2.4. The only difference you may recognize is that the SHDB licence fees are distinguished by country type (OECD, non-OECD, and so forth), therefore you will need to select the appropriate licence for your country.



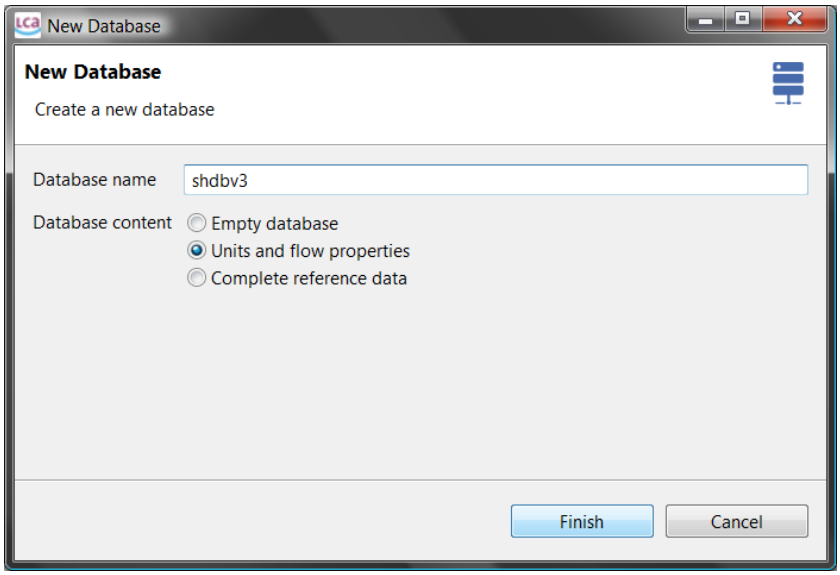
The SHDB download package is rather large (around 210 MB); the download may thus take a while.

4.1.2 Importing in openLCA

Also the import into openLCA works as for other data. Should you not have a database already in openLCA where you want to have the SHDB in, create a new one.



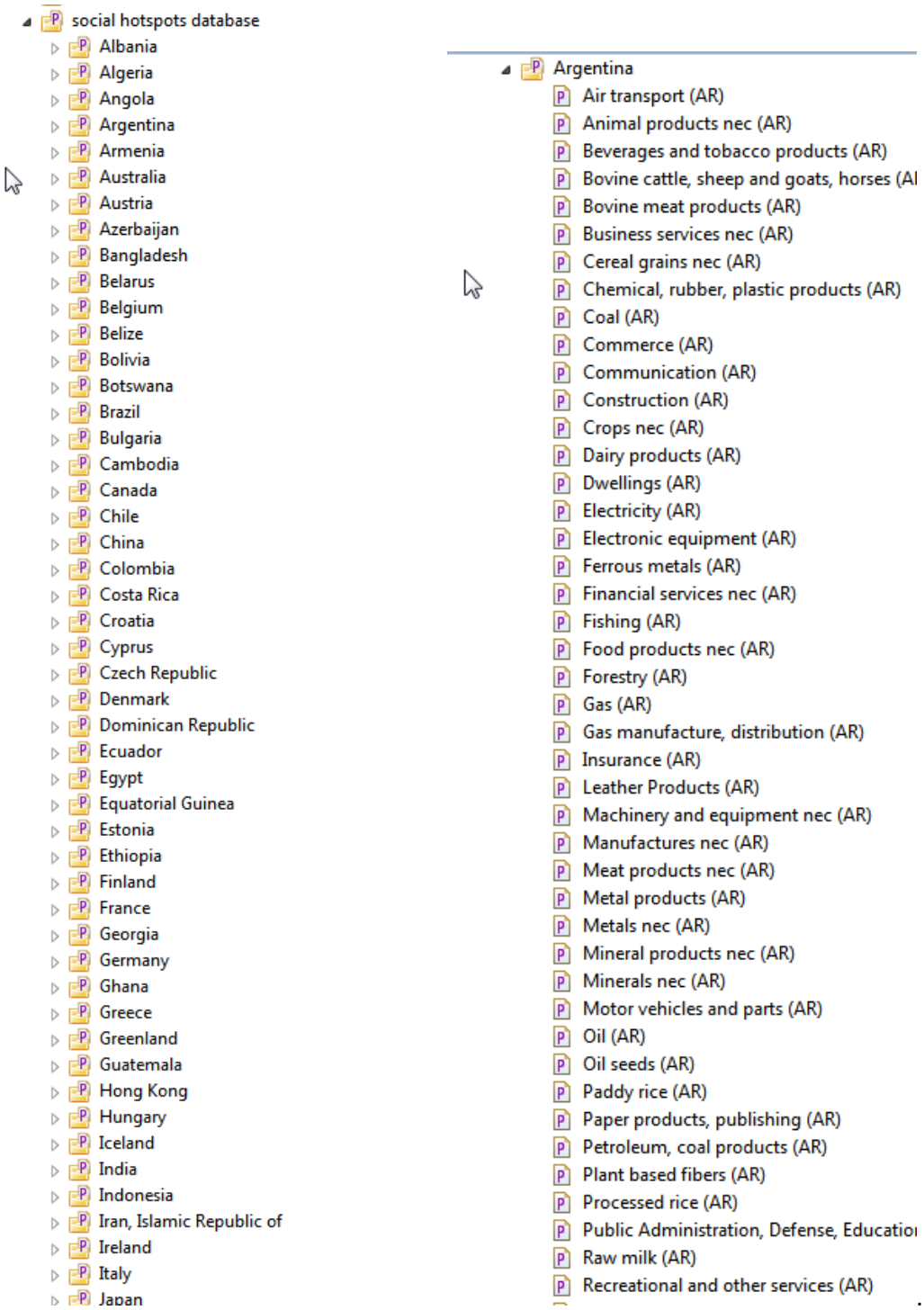
If you want to work with the SHDB alone, you only need units and flow properties as reference data; however, for other data sets, also the other reference data are useful.



Import the SHDB data pack as described in section 3.3.

4.1.3 Using and understanding the SHDB in openLCA

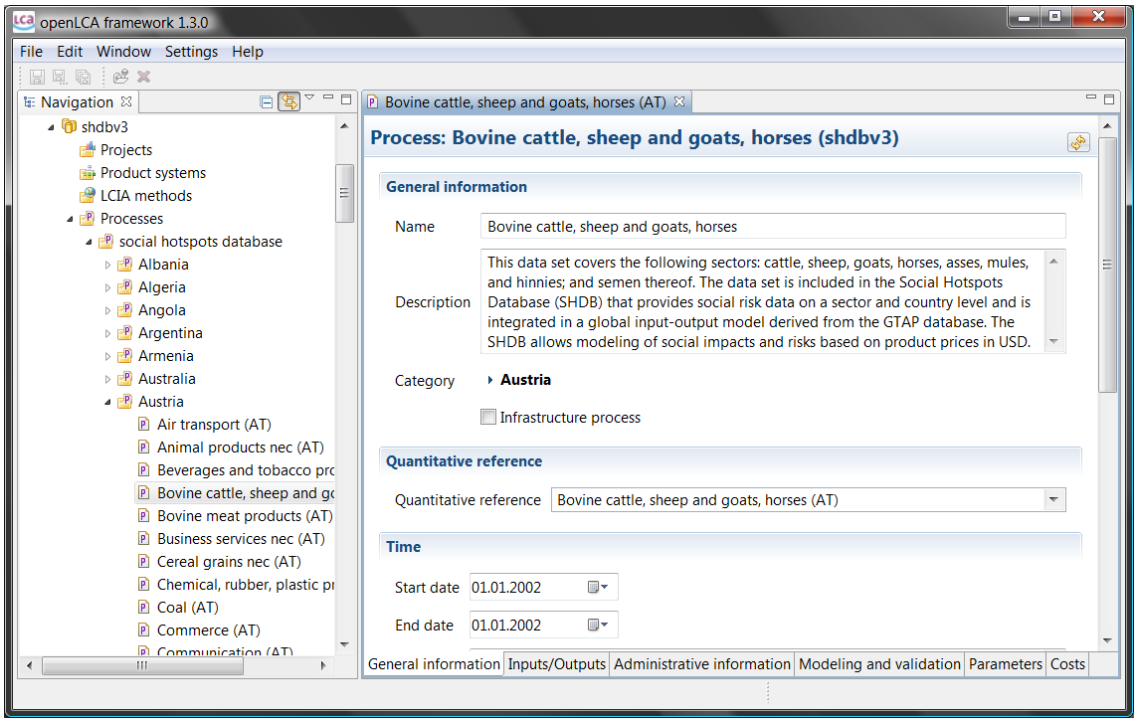
After the import - I imported into a separate folder, 'social hot spots database', in a database that contains the full ecoinvent database already - the data sets are available per country and industrial sector:



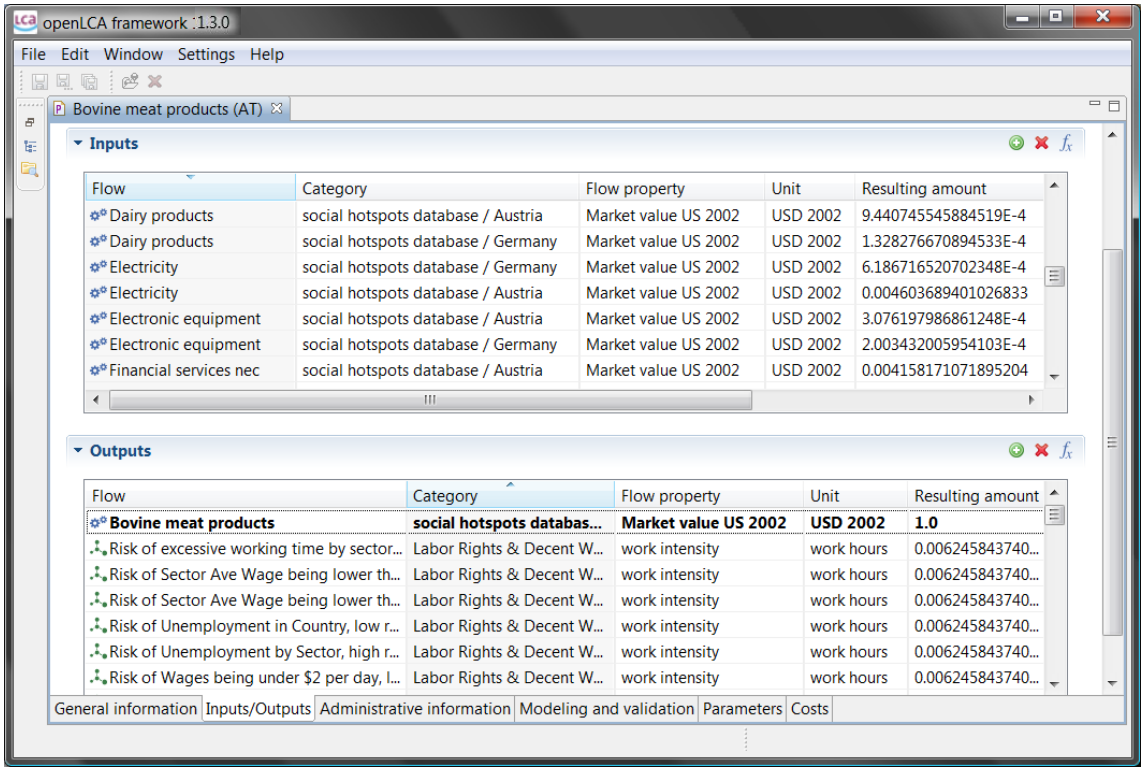
Each data set consists of flows on the input and on the output side. Typically, flows on the input side are products, and flows on the output side are elementary flows.

4.1.3.1 A quick example – one single process

To open a process, navigate through the navigation tree on the left side of the openLCA application by clicking on the small triangles; the processes are the icons with a large 'P' . P . double-click on one of them to open it. E.g., you may go to Processes/Austria and double-click on a process.



It will be opened in the editor window on the right side. You can switch through the different tabs on the bottom.



Exchanges of a process are shown in the “Inputs/Outputs” tab. Product flows (flows with the cogwheels icon,) are linked to other processes; they represent technosphere flows derived from the GTAP model, and are specified in monetary values (USD).

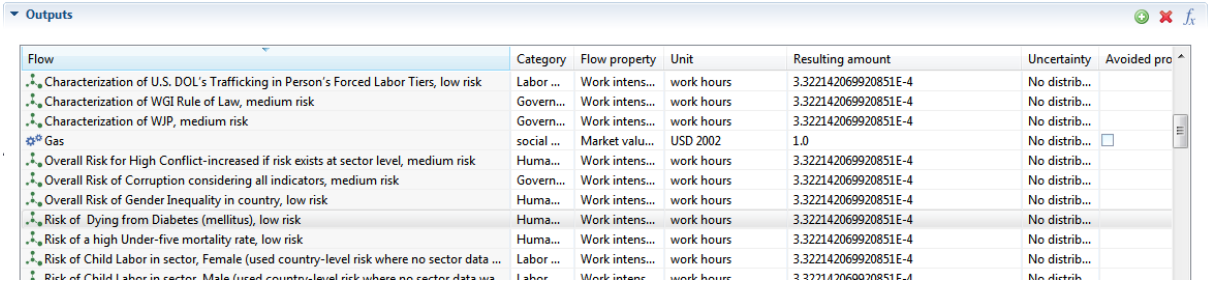
Social aspects are modeled as elementary flows (flows with the green icon) on the output side (=> emission) in worker hours.

All flows are scaled to the reference flow (this is the bold flow in the output table) which is expressed in 1 USD.

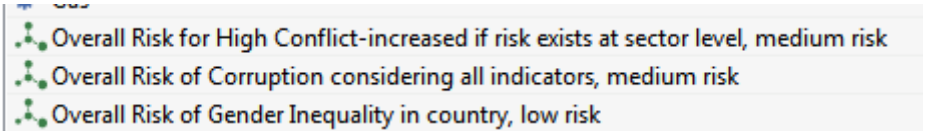
All other flows are expressed in relation to this reference value, even qualitative ones. This is done following the 'SHDB worker hours model': The worker hours spent in a certain sector (SHDB speaks of 'country specific sectors, CSS', [Benoît Norris et al. 2012]), is calculated as overall wages in a CSS divided by average hourly wages in the same CSS, of course for the same time interval. All indicators for each CSS are expressed in the worker hours of this CSS. This leads to the initially surprising result that one CSS may for example have the indicator "Risk of Dying from Diabetes (mellitus), low risk" expressed in 3.32E-4 worker hours, as well as all other indicators relevant for this CSS.

The obvious benefit of this is that the worker hours are quantitative and allow, as a so-called "activity variable" [Norris 2006], [Ciroth 2012] aggregation of all indicators over the entire life cycle.

When imported into openLCA, the CSS becomes a process data set. Also here, the indicators are expressed in worker hours, each with the same value:



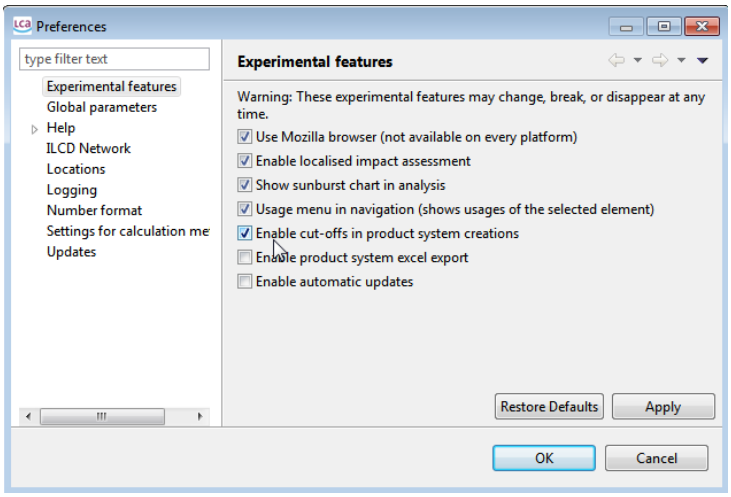
Differences between processes (and the original CSS) exist because the indicators are already assessed when they obtain the quantitative worker hours: the example process shown above has a medium risk for corruption, and a low risk of gender inequality.



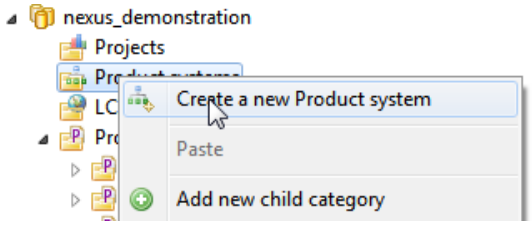
In LCA terminology, the flow 'Overall Risk of Corruption considering all indicators, low risk' does not exist for this process. Therefore, although all flows have the same worker hour values for this process, the process gets a different social evaluation since the flows that are relevant differ from one process to another.

4.1.3.2 Quick example 2 – a product system as a complete life cycle model

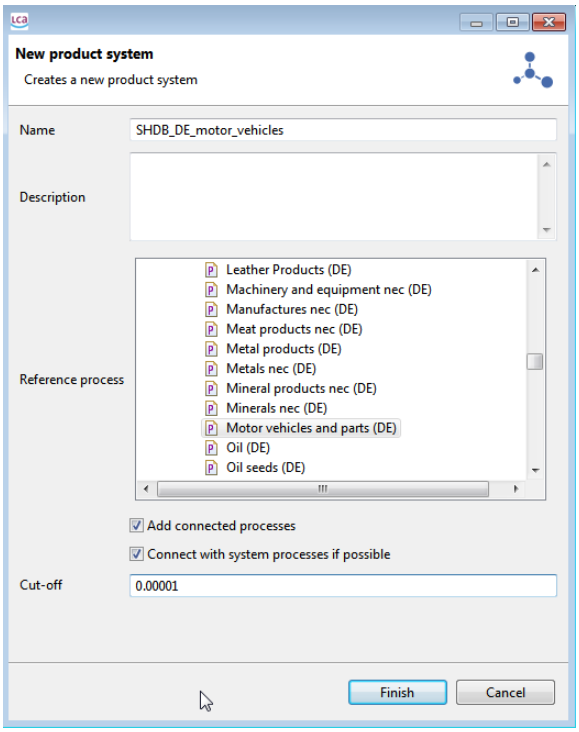
For a complete life cycle model, we need to create a product system. Before we do so, we should set a cut-off criterion for the model, in the openLCA preferences page (file/preferences):



Then we create a product system..

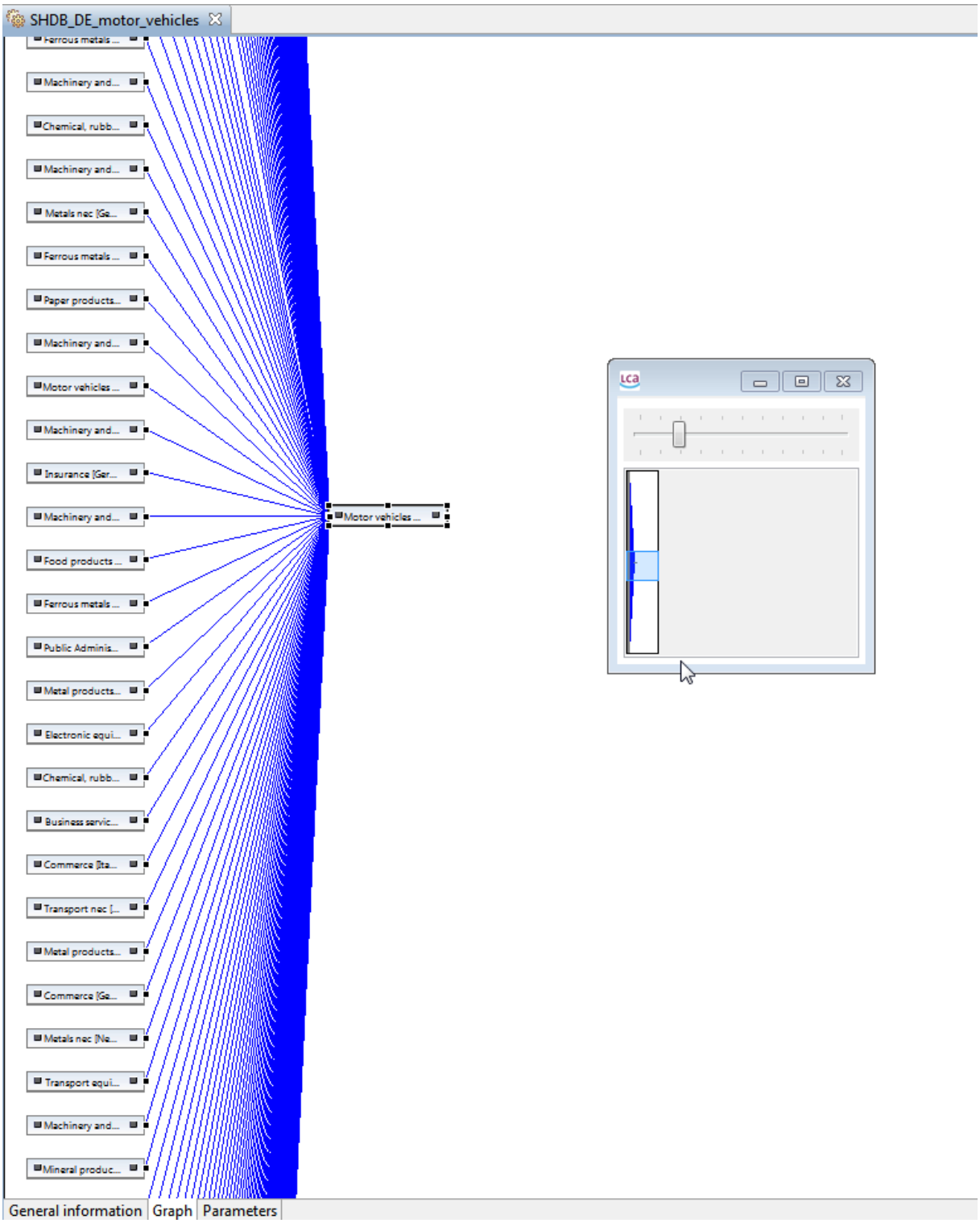


.. enter a cut-off..



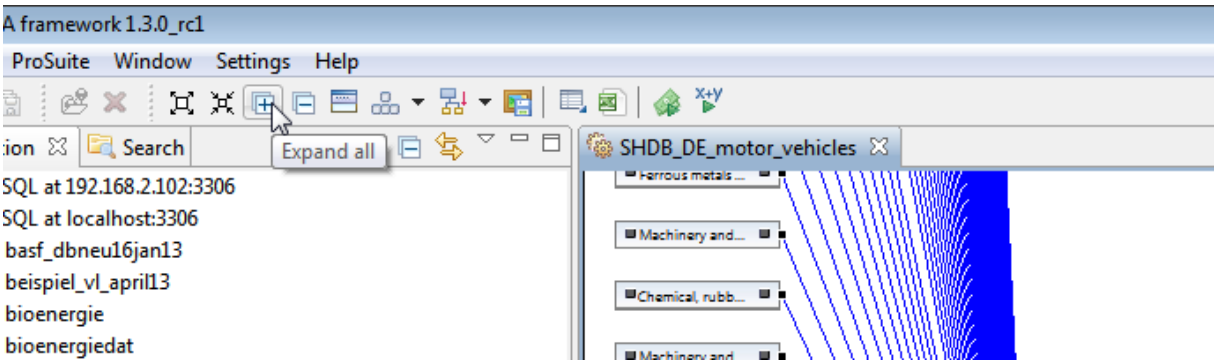
.. and click on ‘finish’.

The resulting product system is a typical “IO type” model, with many interconnections between the different processes. For our system, already in the first tier, there are about hundred different processes connected.

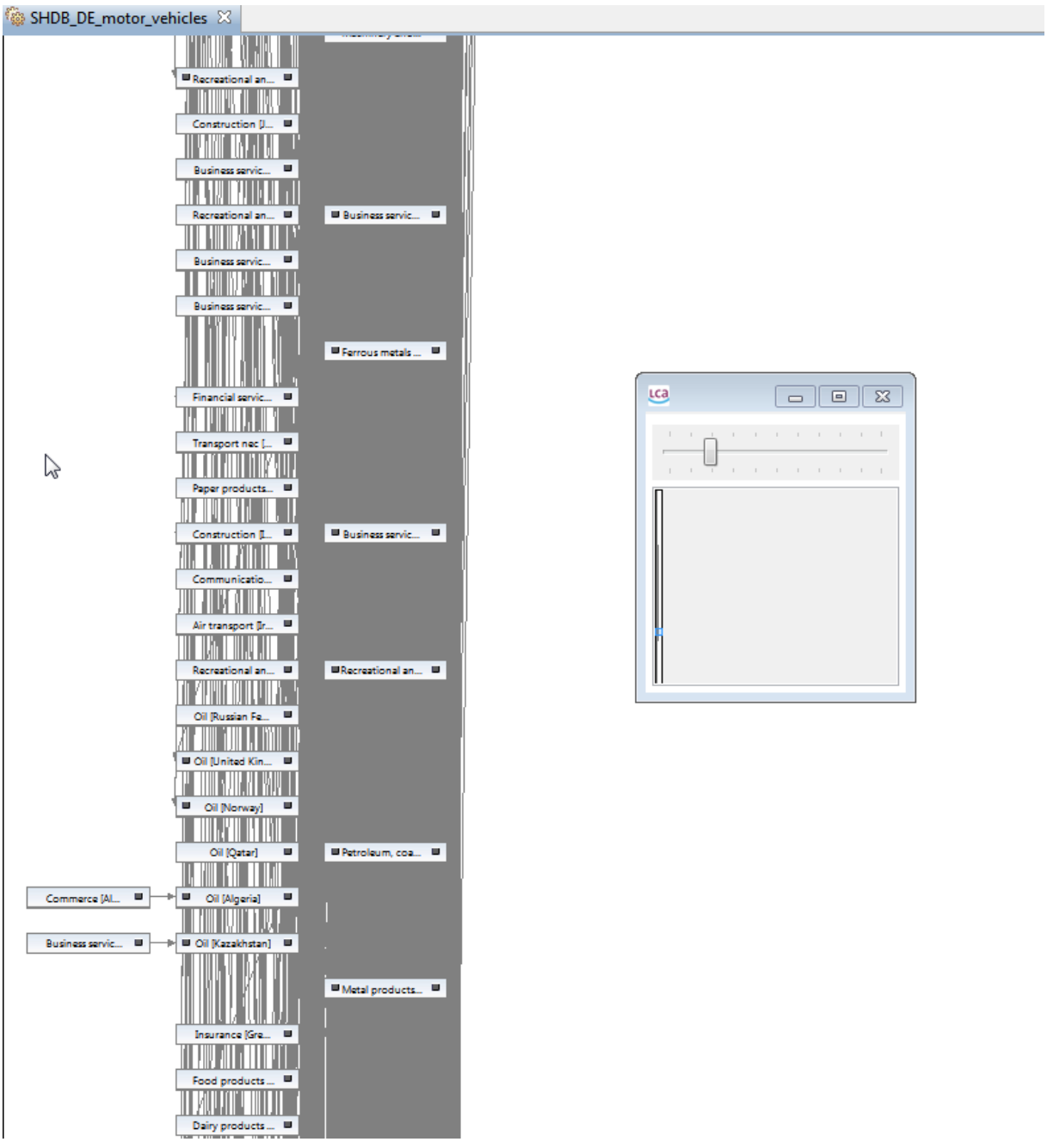


This is also the reason why you should specify a cut-off for the product system.

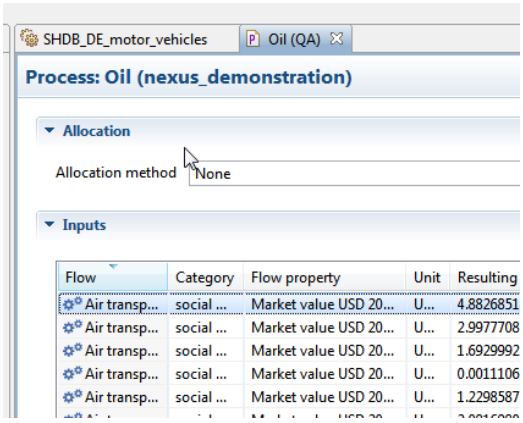
If you expand all processes in the process graph..



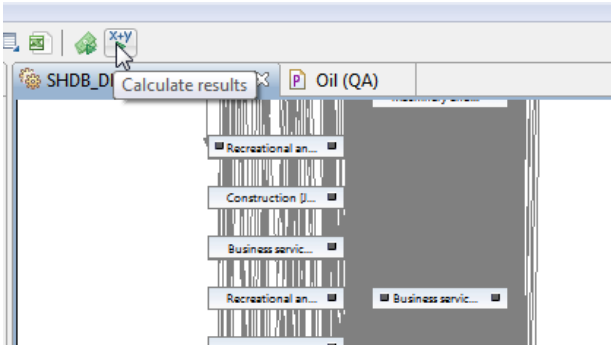
..you see that due to the cut-off, only some few tiers are contained in the model. For example, “oil [Qatar]” is not followed up further, while “Oil [Kazakstan]” has a connection to business services.



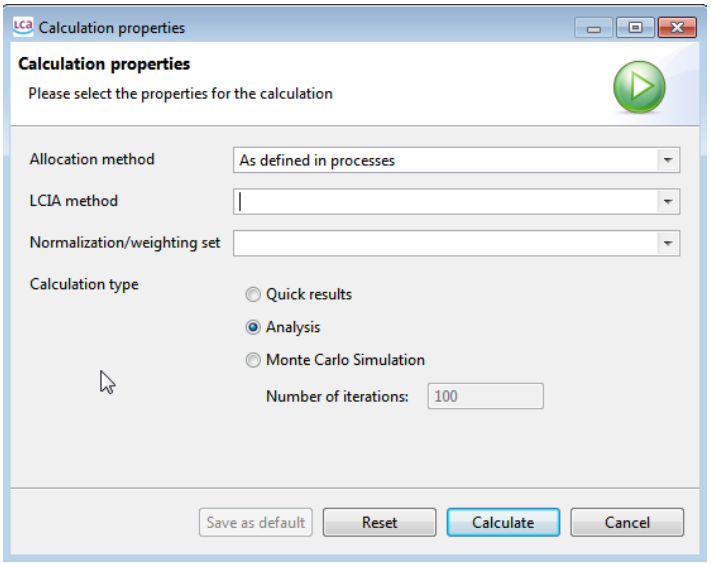
And of course, Oil [Qatar] has connections to many other processes in the database.



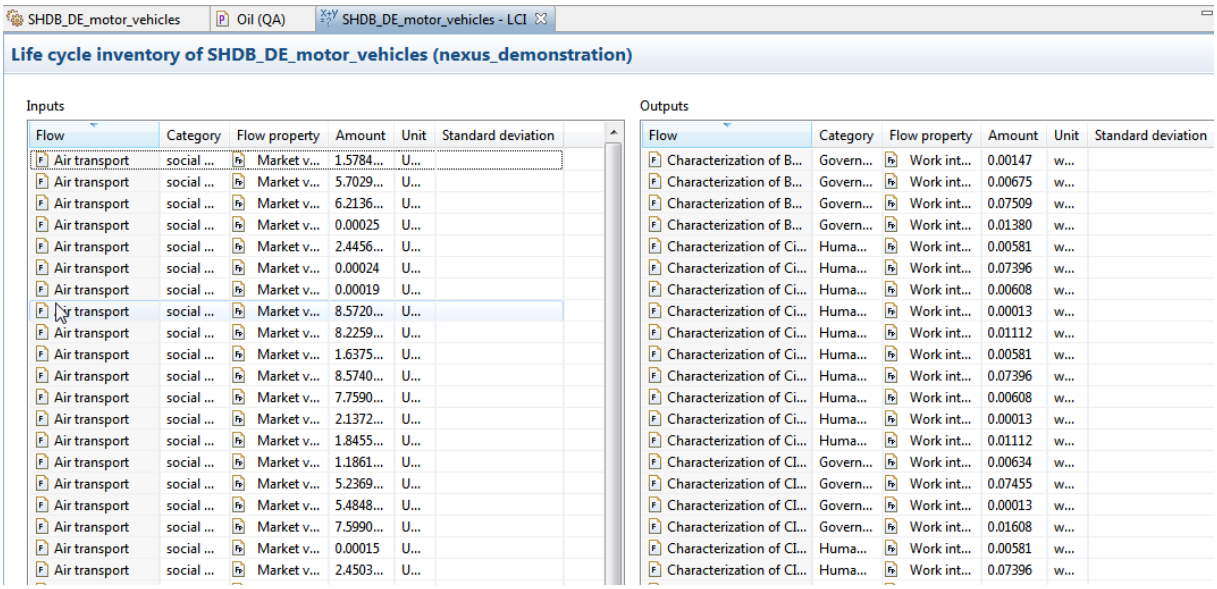
If we calculate the product system..



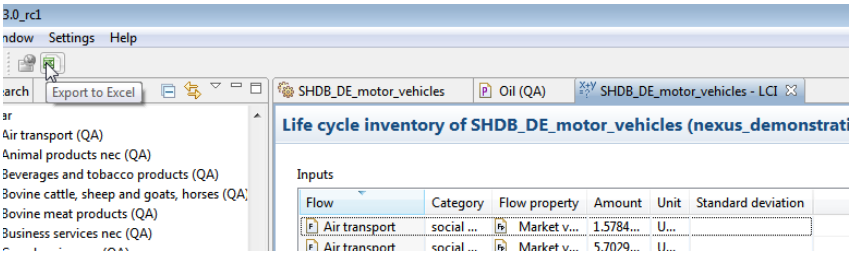
.. we can both do a quick calculation and also an in-depth analysis. An LCIA (life cycle impact assessment method) is not available but also not necessary since the flows per process already contain the assessment (as low risk, medium risk, high risk).

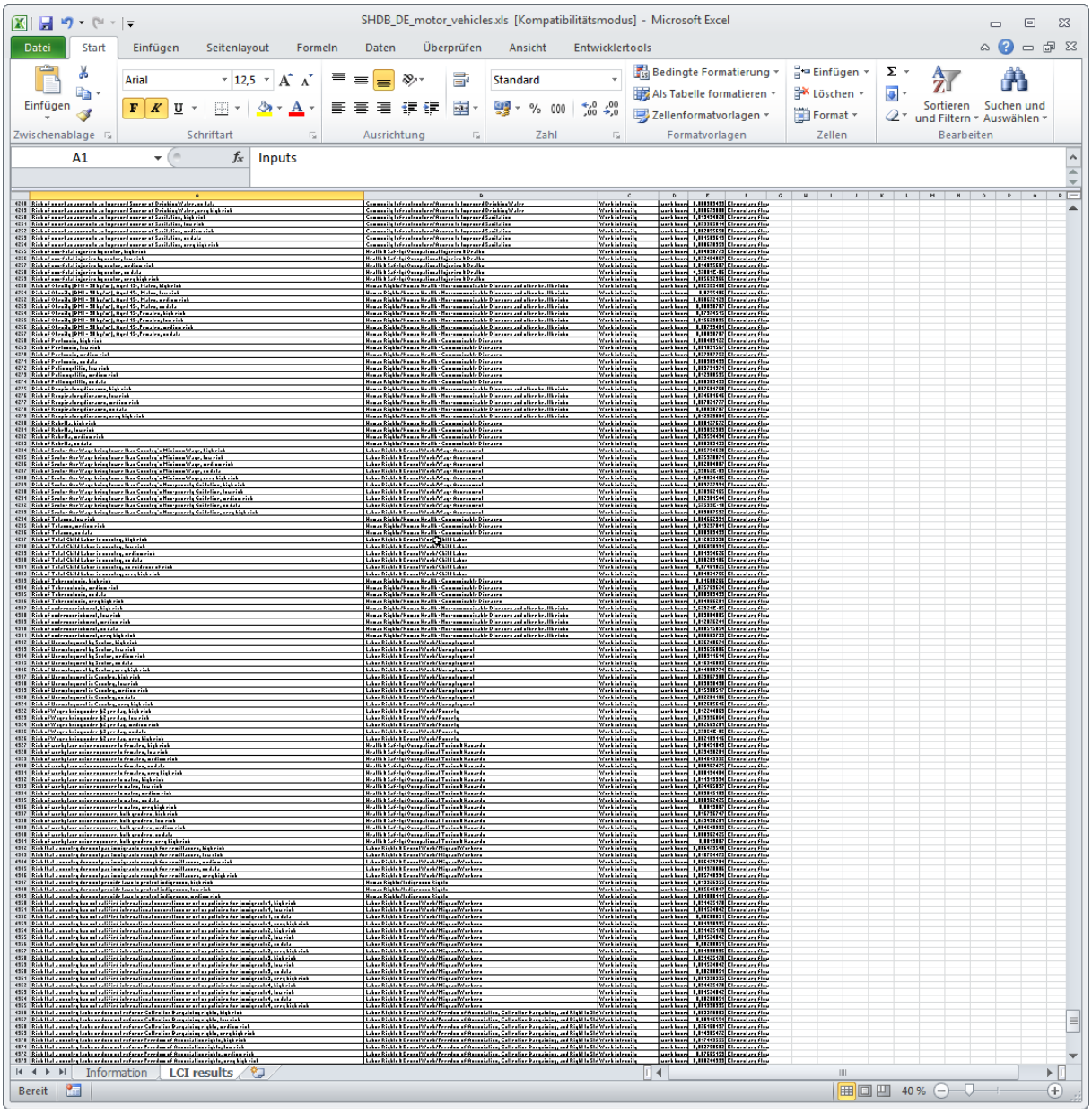


The quick results are the “life cycle inventory” of the system:

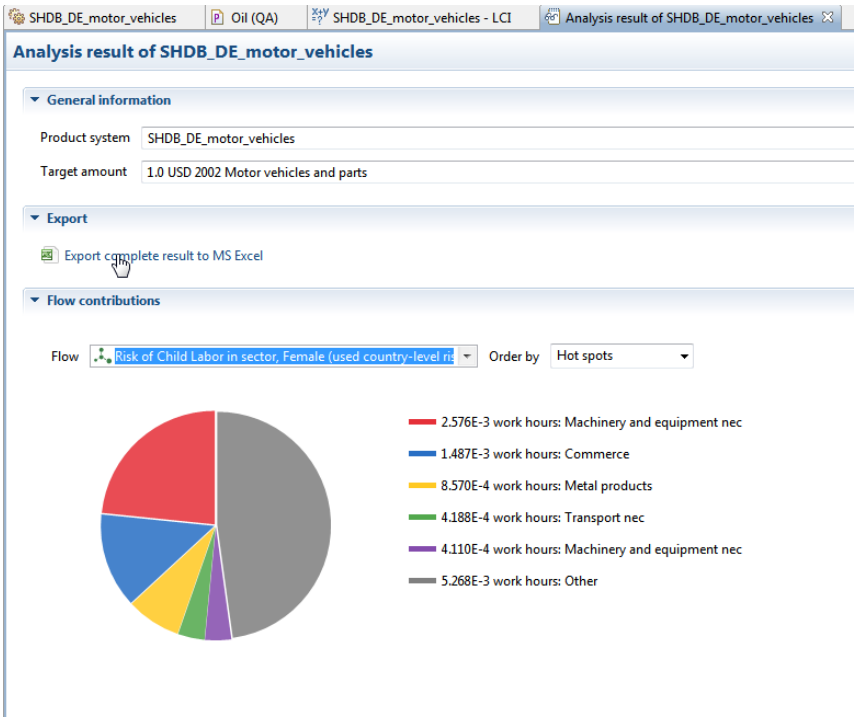


They can be exported to excel for further analysis, and for creating graphs.

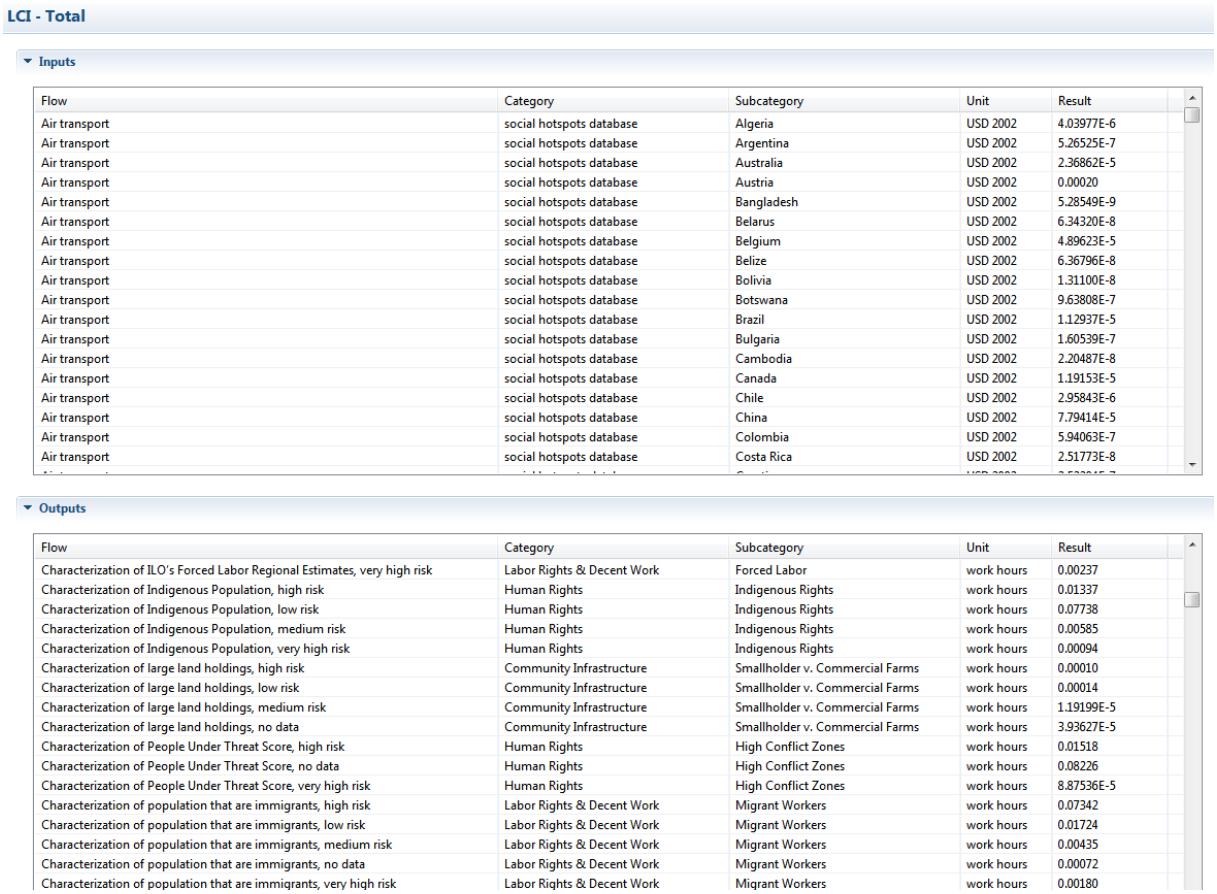


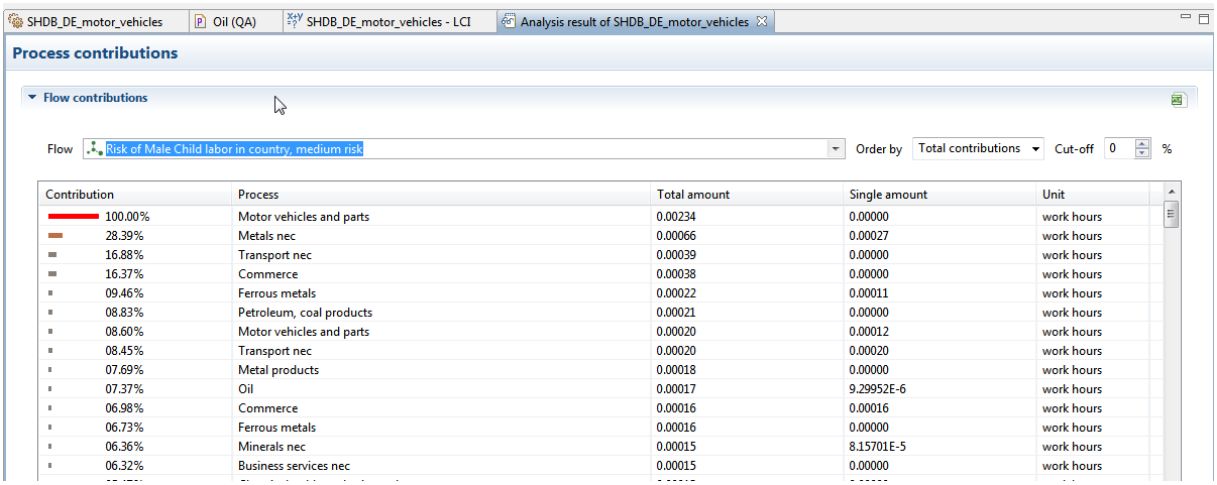


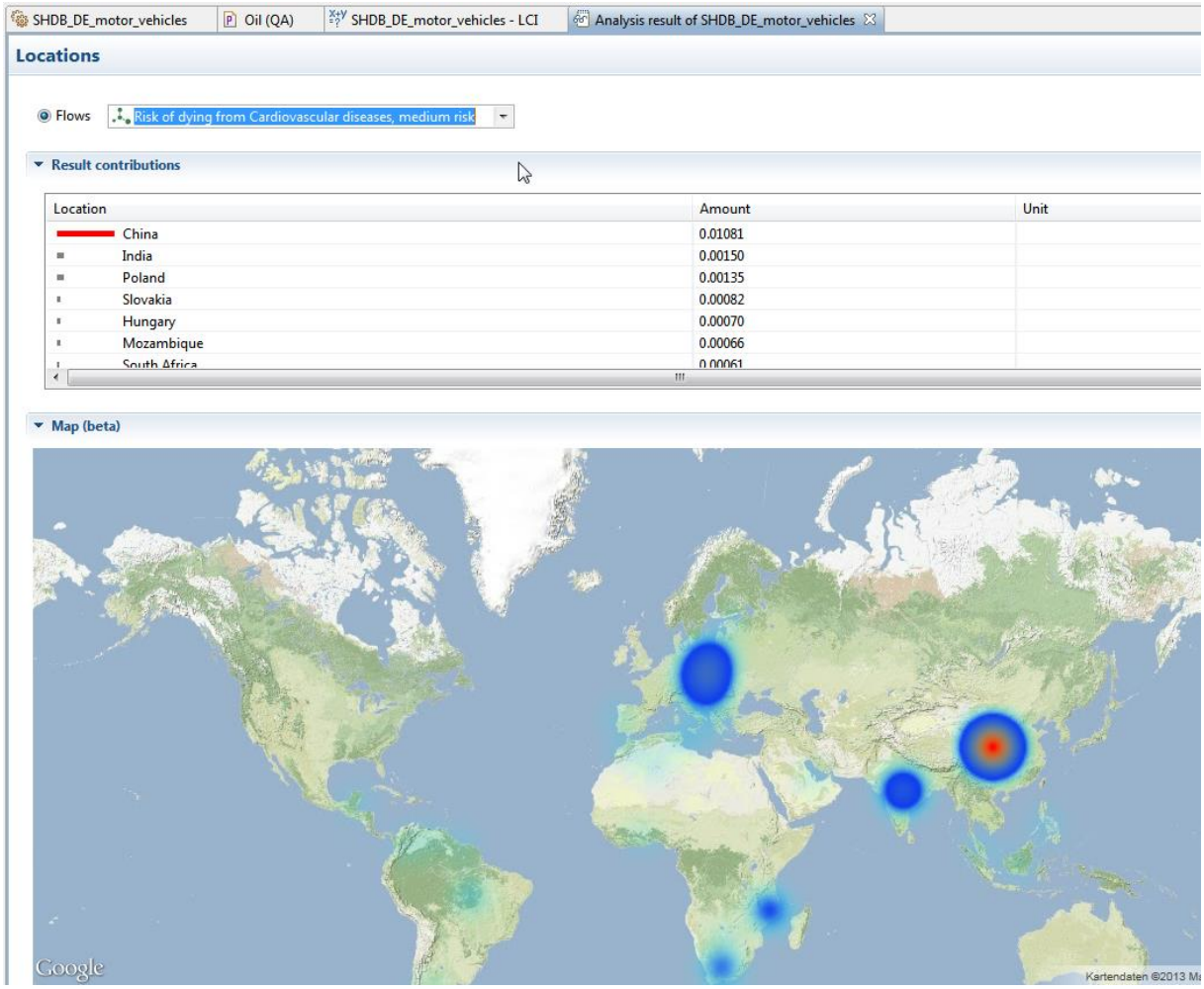
The analysis results allow a more in-depth analysis in openLCA. Also they can be exported to excel.

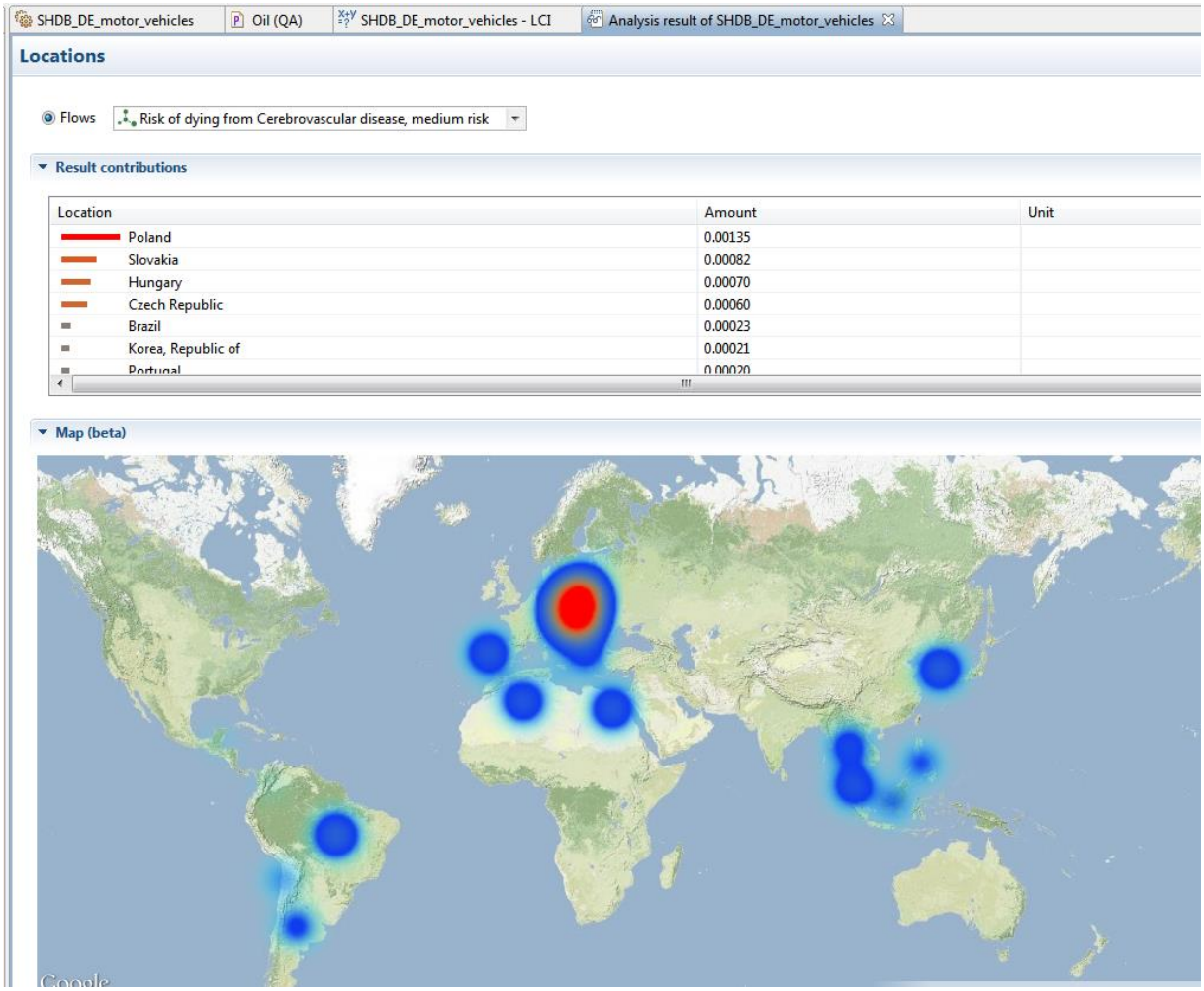


Depending on the cut-off that you set for modeling the product system, the results might contain also products, on the input side. The impacts are available as flows, on the output side.




SHDB_DE_motor_vehicles
Oil (QA)
SHDB_DE_motor_vehicles - LCI
Analysis result of SHDB_DE_motor_vehicles
Process contributions
Flow contributions
Flow
Risk of Male Child labor in country, medium risk
Order by
Total contributions
Cut-off
0
%
Contribution
Process
Total amount
Single amount
Unit
100.00% Motor vehicles and parts 0.00234 0.00000 work hours
28.39% Metals nec 0.00066 0.00027 work hours
16.88% Transport nec 0.00039 0.00000 work hours
16.37% Commerce 0.00038 0.00000 work hours
09.46% Ferrous metals 0.00022 0.00011 work hours
08.83% Petroleum, coal products 0.00021 0.00000 work hours
08.60% Motor vehicles and parts 0.00020 0.00012 work hours
08.45% Transport nec 0.00020 0.00020 work hours
07.69% Metal products 0.00018 0.00000 work hours
07.37% Oil 0.00017 9.29952E-6 work hours
06.98% Commerce 0.00016 0.00016 work hours
06.73% Ferrous metals 0.00016 0.00000 work hours
06.36% Minerals nec 0.00015 8.15701E-5 work hours
06.32% Business services nec 0.00015 0.00000 work hours


SHDB_DE_motor_vehicles
Oil (QA)
SHDB_DE_motor_vehicles - LCI
Analysis result of SHDB_DE_motor_vehicles
Locations
Flows
Risk of dying from Cardiovascular diseases, medium risk
Result contributions
Location
Amount
Unit
China 0.01081
India 0.00150
Poland 0.00135
Slovakia 0.00082
Hungary 0.00070
Mozambique 0.00066
South Africa 0.00061
Map (beta)
Google
Kartendaten ©2013 Mi



4.1.3.3 Linking the SHDB with other data in openLCA

So far we have only considered the SHDB "standalone"; it is of course also possible, and often interesting, to combine SHDB with data from other sources.

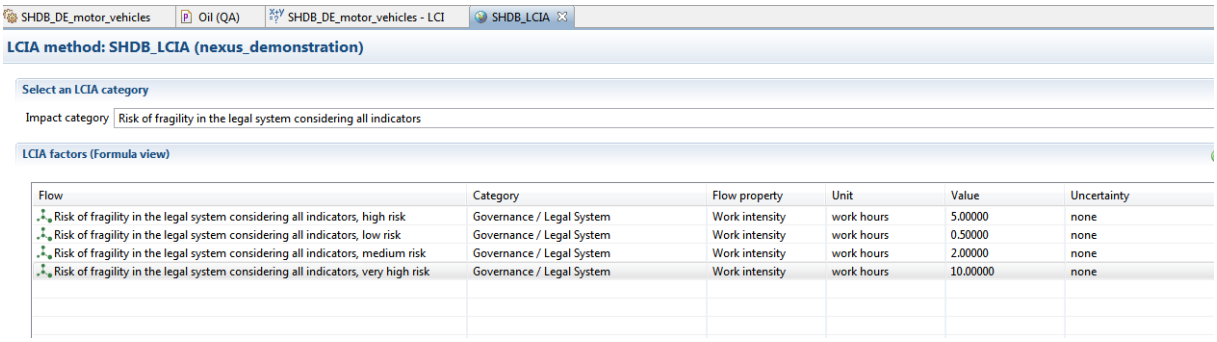
This can be done in two main ways.

First, an SHDB process can use other products from other sources. This is a bit interesting since the SHDB claims to already represent a full economy, very similar to an IO database; therefore, this modeling step requires some thoughts.

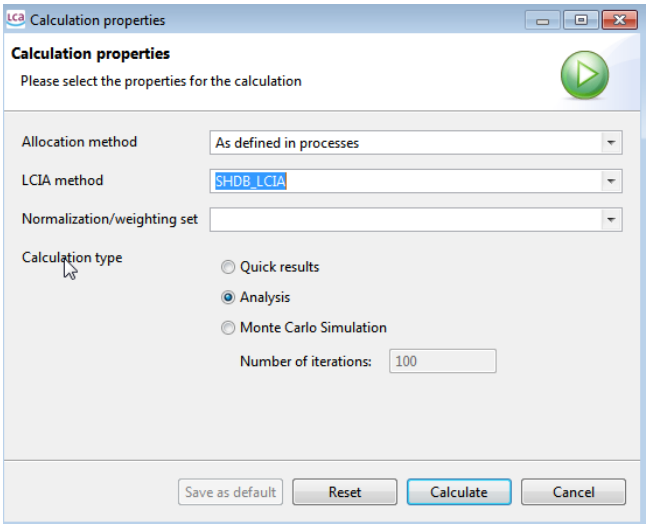
Second, SHDB process information can be linked to processes from another source, e.g. ELCD or ecoinvent. If the "other" (non-SHDB) process is a unit process, there is risk to either have two models that are not fully consistent (e.g. a full ecoinvent life cycle model and a full SHDB life cycle model) and/or to double count impacts that are linked to different processes in the non-SHDB life cycle and at the same time reflected in the SHDB model.

4.1.3.4 Developing an impact assessment method

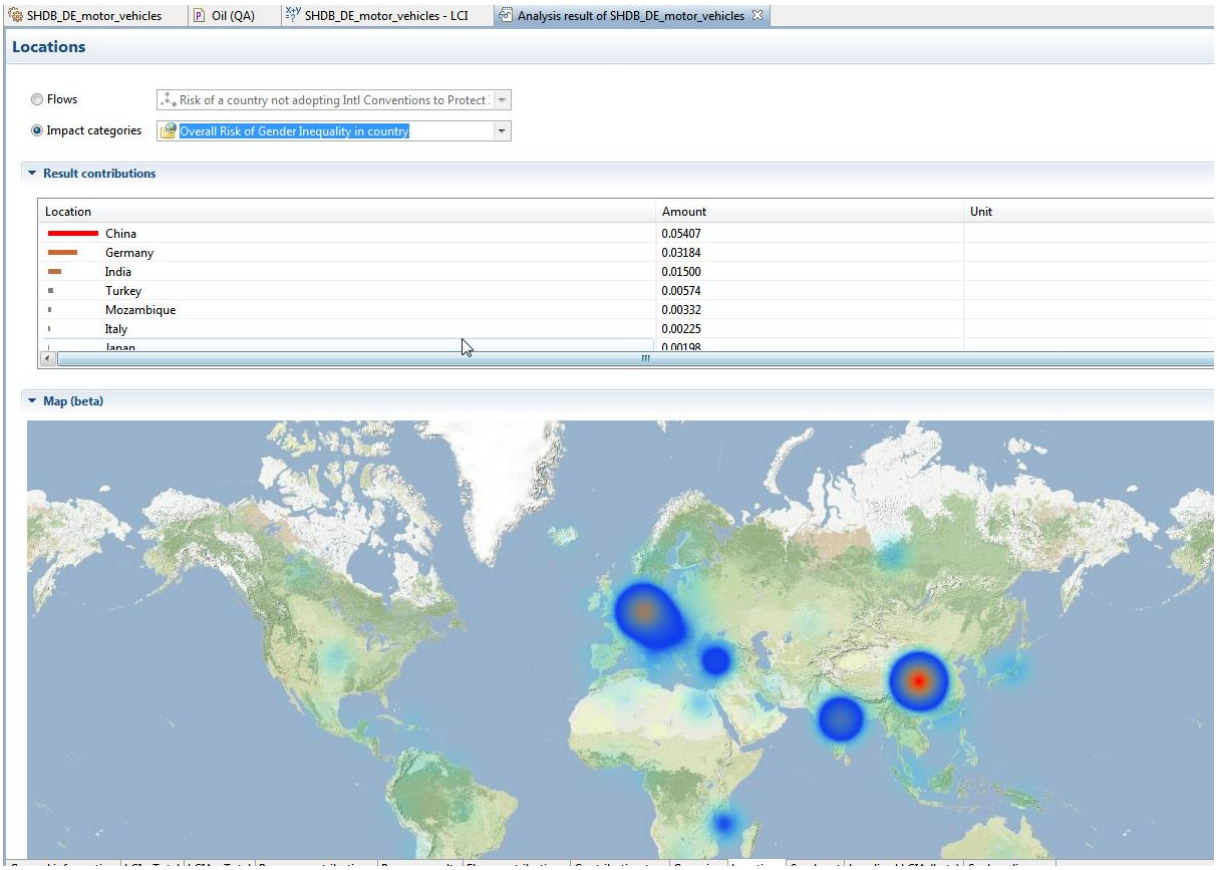
It is of course also possible to implement an LCIA method for the SHDB. As a short example, I created a method as follows (the screenshot shows only one category):



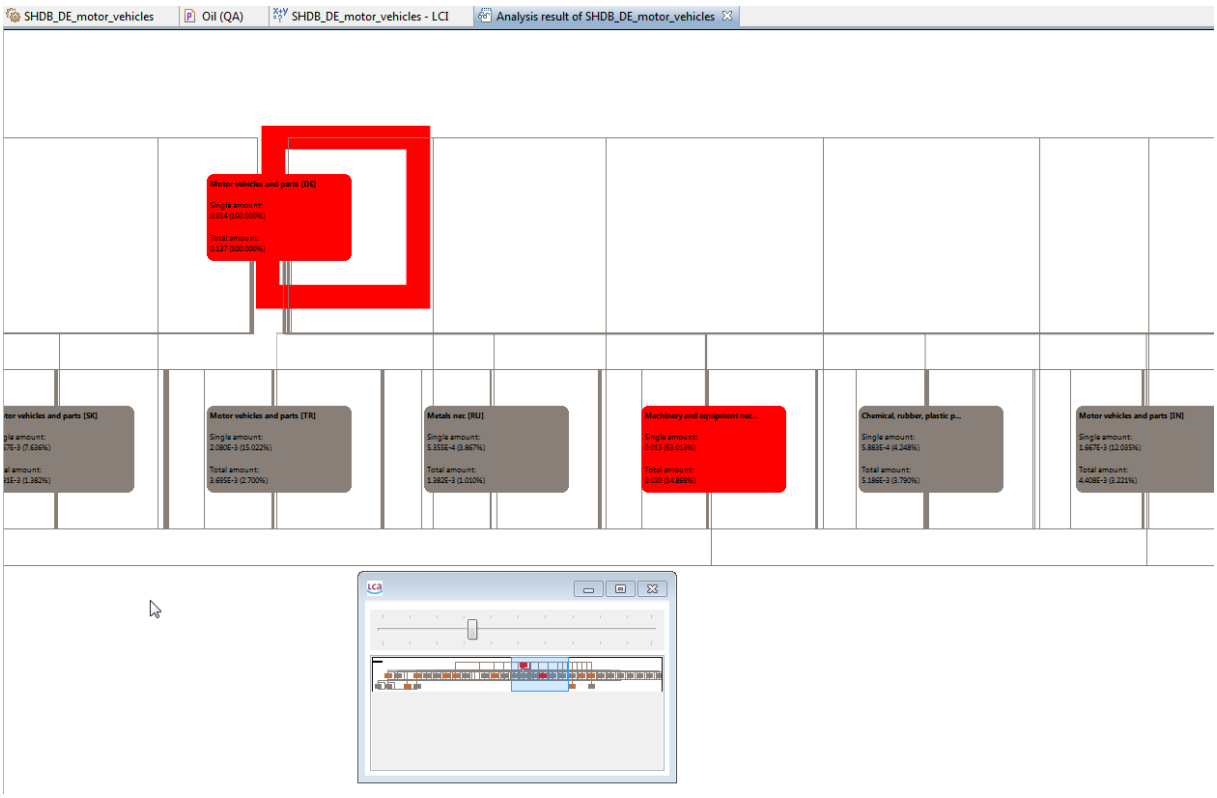
This method can then be used in the calculation[4].



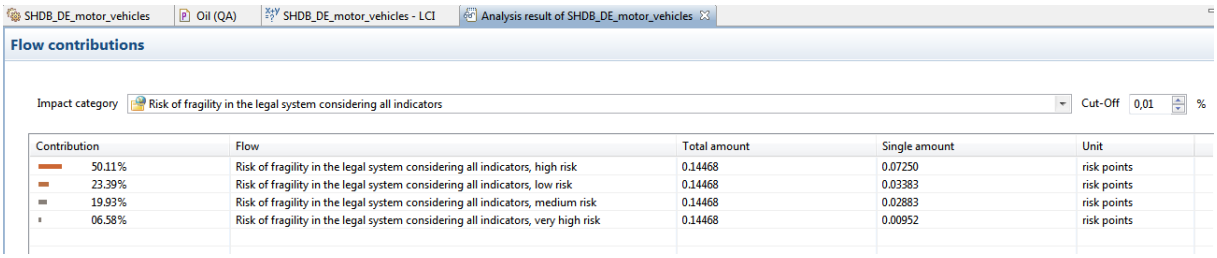
[4] It is of course not really an LCIA method in the pure sense but rather an interpretation method; the mathematical approach is identical to an LCIA method.



Impact assessment results are often useful since they have a higher aggregation level. They can also be shown in the sankey diagram of the analysis:



The flow contribution page allows checking the contribution of the flows to the impact categories:



Contribution	Flow	Total amount	Single amount	Unit
50.11%	Risk of fragility in the legal system considering all indicators, high risk	0.14468	0.07250	risk points
23.39%	Risk of fragility in the legal system considering all indicators, low risk	0.14468	0.03383	risk points
19.93%	Risk of fragility in the legal system considering all indicators, medium risk	0.14468	0.02883	risk points
06.58%	Risk of fragility in the legal system considering all indicators, very high risk	0.14468	0.00952	risk points

Here, about a quarter of the overall contribution is coming from the low risk, although our tentative value for low risk was quite small (0.5).

4.1.3.5 SHDB in openLCA: tips, known issues, further reading

Tips

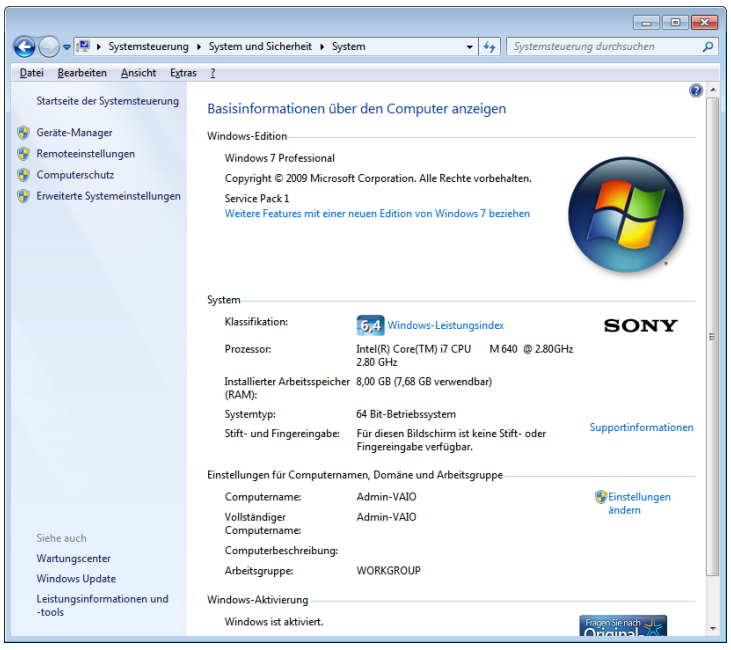
SHDB is a somewhat uncommon LCA database; every single model contains several thousand connections to other processes. It is therefore recommended to

- increase the memory available for openLCA (this is explained here: http://openlca.org/documentation/index.php/Adapt_the_RAM_allocation)
- ideally, calculate on a 64 bit computer since on a 32 bit computer the available memory cannot be higher than 2GB.
- Set a cut-off for the product system modeling

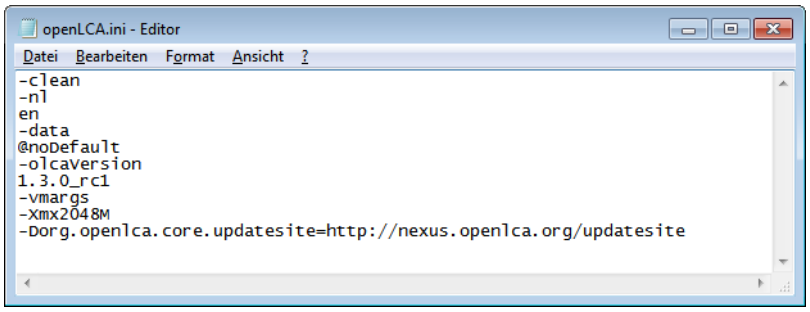
Typical values for the cut-off are 0.0001 or lower. If you have the feeling that meaningful elements are excluded with a specified cut-off, you can of course experiment with different values, in sensitivity analyses.

We have been able to work with the SHDB on a not-too recent computer:

- The computer is a Sony Vaio laptop, about three years old, with Windows 64 bit:



- openLCA is started with 2 GB RAM:



Known issues:

Speed and performance of using SHDB should not be really a bottleneck for using the SHDB but can certainly be further optimized; this is on our to do list.

Some of the result pages can be further optimized for the SHDB. Especially, the country/region should always be added to the process name. If you have any comments, please let us know.

Further reading:

- For social LCA in general:

Andrews, E. S., Barthel, L.-P., Beck, T., Benoit, C., Ciroth, A., Cucuzella, C., Gensch, C.-O., Hérbert, J., Lesage, P., Manhart, A,. Mazeau, P., Mazijn, B., Methot, A.-L., Moberg, A., Norris, G., Parent, J., Prakash, S., Reveret, J.-P., Spillemaeckers, S., Ugaya, C. M. L., Valdivia, S., Weidema, B.: UNEP/SETAC Life Cycle Initiative: Guidelines for social life cycle assessment of products, 2009; http://lcinitiative.unep.fr/default.asp?site=lcinit&page_id=A8992620-AAAD-4B81-9BAC-A72AEA281CB9

- For the social hot spots database:

Benoit-Norris, C.; Cavan, D.A.; Norris, G. Identifying Social Impacts in Product Supply Chains: Overview and Application of the Social Hotspot Database. Sustainability 2012, 4, 1946-1965, http://www.mdpi.com/2071-1050/4/9/1946/pdf.

- For openLCA:

www.openlca.org, www.openlca.org/documentation (the documentation wiki).

4.2 Ökobaudat

Ökobaudat ist eine deutsche Datenbank die vom Bundesministerium für Verkehr, Bau und Stadtentwicklung herausgegeben wird.

Sie wird auf www.nachhaltigesbauen.de/baustoff-und-gebaeudedaten/oekobaudat.html so vorgestellt:

„Mit der Ökobau.dat, einer deutschen Baustoffdatenbank für die Bestimmung globaler ökologischer Wirkungen, steht allen Akteuren eine vereinheitlichte Datenbasis für ökologische Bewertungen von Bauwerken zur Verfügung. In rund 950 Datenblättern werden Baumaterialien sowie Bau- und Transportprozesse der folgenden Kategorien hinsichtlich ihrer ökologischen Wirkungen beschrieben:

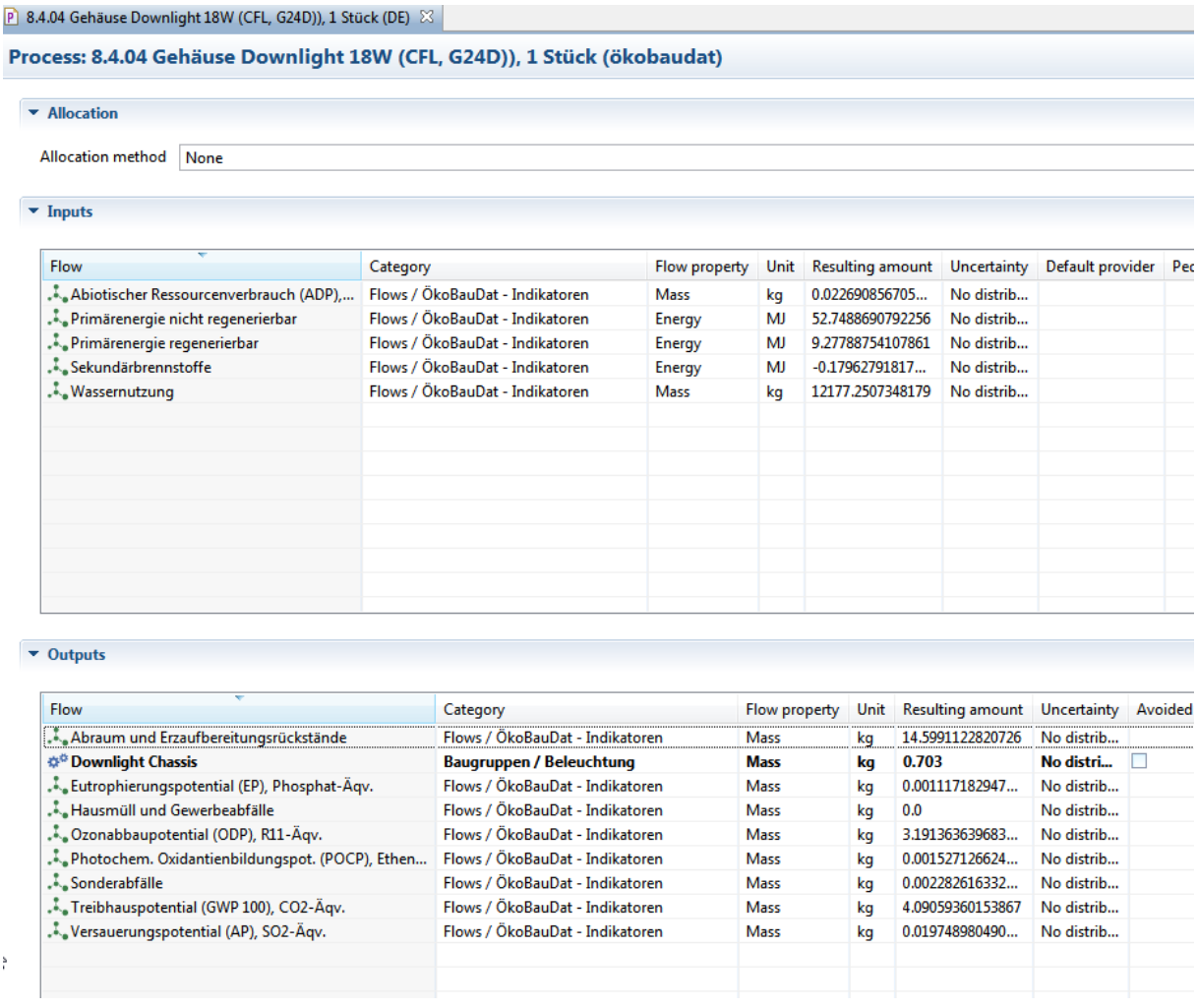
- Mineralische Baustoffe
- Dämmstoffe
- Holzprodukte

- Metalle
- Anstriche und Dichtmassen
- Bauprodukte aus Kunststoffen
- Komponenten von Fenstern, Türen und Vorhangfassaden
- Gebäudetechnik
- Sonstiges

In jedem Datensatz werden neben den ökologischen Angaben auch Informationen zu den Quelldaten wie Bezugseinheit, Gültigkeitsdauer, Datenqualität etc. geliefert. Die Datensätze im XML-Dateiformat können in bestehende Lebenszyklusberechnungswerkzeuge eingebunden werden. Die Ökobau.dat wurde im Rahmen eines Forschungsprojektes der Forschungsinitiative ZukunftBau durch den Forschungsnehmer PE International GmbH mit Unterstützung der Deutschen Baustoffindustrie entwickelt.“

4.2.1 Verwendung von Ökobaudat in openLCA

Ökobaudat kann über Nexus(www.nexus.openlca.org) genauso bestellt und dann in openLCA importiert werden wie andere Datenbanken auch. Im Unterschied zu reinen Ökobilanzdatenbanken enthalten die Ökobaudat Datensätze jedoch direkt Angaben über Umweltauswirkungen. Sie entsprechen damit eher Datensätzen wie sie aus einer Umweltproduktdeklaration kommen. Damit sind sie weniger vielseitig in der Modellierung verwendbar als Unit Prozesse, erfordern aber auf der anderen Seite keine eigenständige Wirkungsabschätzung.


8.4.04 Gehäuse Downlight 18W (CFL, G24D)), 1 Stück (DE)

Process: 8.4.04 Gehäuse Downlight 18W (CFL, G24D)), 1 Stück (ökobaudat)

Allocation

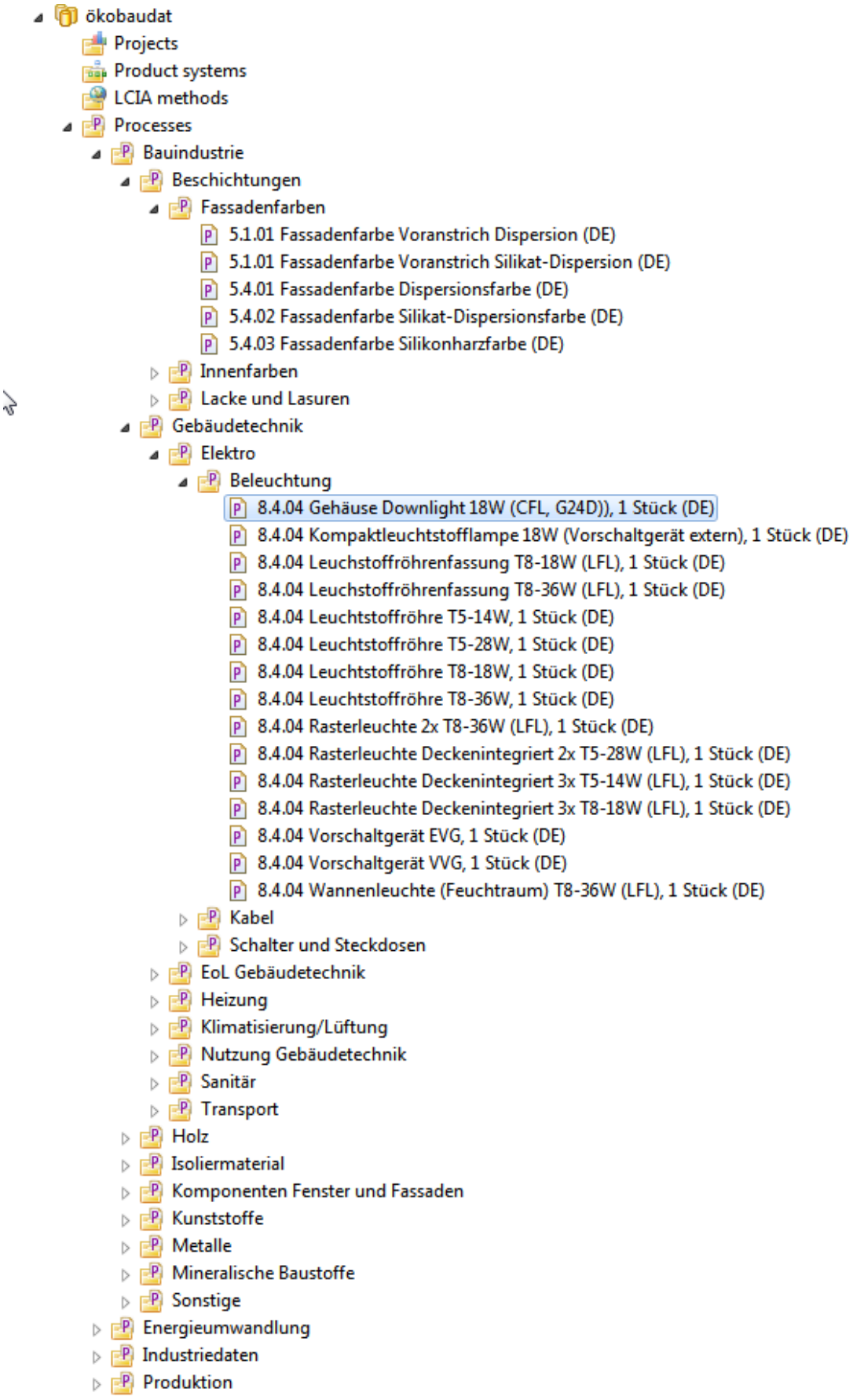
Allocation method: None

Inputs

Flow	Category	Flow property	Unit	Resulting amount	Uncertainty	Default provider	Pec
Abiotischer Ressourcenverbrauch (ADP),...	Flows / ÖkoBauDat - Indikatoren	Mass	kg	0.022690856705...	No distrib...		
Primärenergie nicht regenerierbar	Flows / ÖkoBauDat - Indikatoren	Energy	MJ	52.7488690792256	No distrib...		
Primärenergie regenerierbar	Flows / ÖkoBauDat - Indikatoren	Energy	MJ	9.27788754107861	No distrib...		
Sekundärbrennstoffe	Flows / ÖkoBauDat - Indikatoren	Energy	MJ	-0.17962791817...	No distrib...		
Wassernutzung	Flows / ÖkoBauDat - Indikatoren	Mass	kg	12177.2507348179	No distrib...		

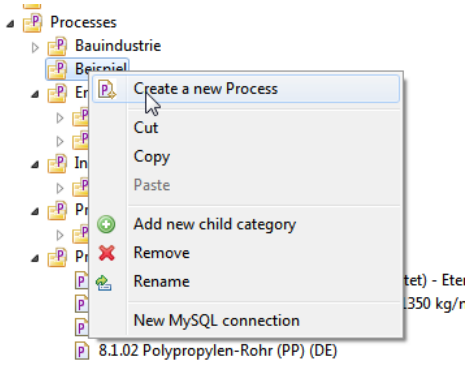
Outputs

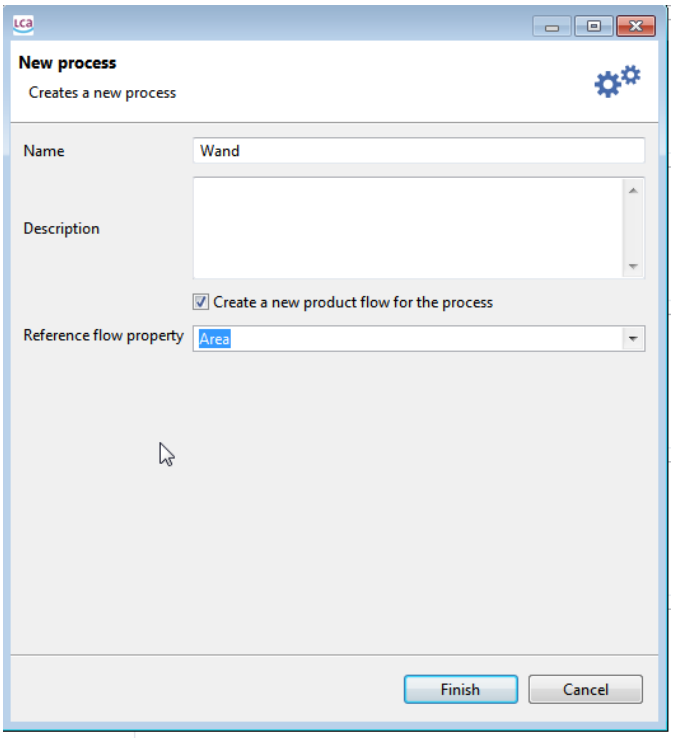
Flow	Category	Flow property	Unit	Resulting amount	Uncertainty	Avoided
Abraum und Erzaufbereitungsrückstände	Flows / ÖkoBauDat - Indikatoren	Mass	kg	14.5991122820726	No distrib...	
Downlight Chassis	**Baugruppen / Beleuchtung**	**Mass**	**kg**	**0.703**	**No distri...**	
Eutrophierungspotential (EP), Phosphat-Äqv.	Flows / ÖkoBauDat - Indikatoren	Mass	kg	0.001117182947...	No distrib...	
Hausmüll und Gewerbeabfälle	Flows / ÖkoBauDat - Indikatoren	Mass	kg	0.0	No distrib...	
Ozonabbaupotential (ODP), R11-Äqv.	Flows / ÖkoBauDat - Indikatoren	Mass	kg	3.191363639683...	No distrib...	
Photochem. Oxidantienbildungspot. (POCP), Ethen...	Flows / ÖkoBauDat - Indikatoren	Mass	kg	0.001527126624...	No distrib...	
Sonderabfälle	Flows / ÖkoBauDat - Indikatoren	Mass	kg	0.002282616332...	No distrib...	
Treibhauspotential (GWP 100), CO2-Äqv.	Flows / ÖkoBauDat - Indikatoren	Mass	kg	4.09059360153867	No distrib...	
Versauerungspotential (AP), SO2-Äqv.	Flows / ÖkoBauDat - Indikatoren	Mass	kg	0.019748980490...	No distrib...	

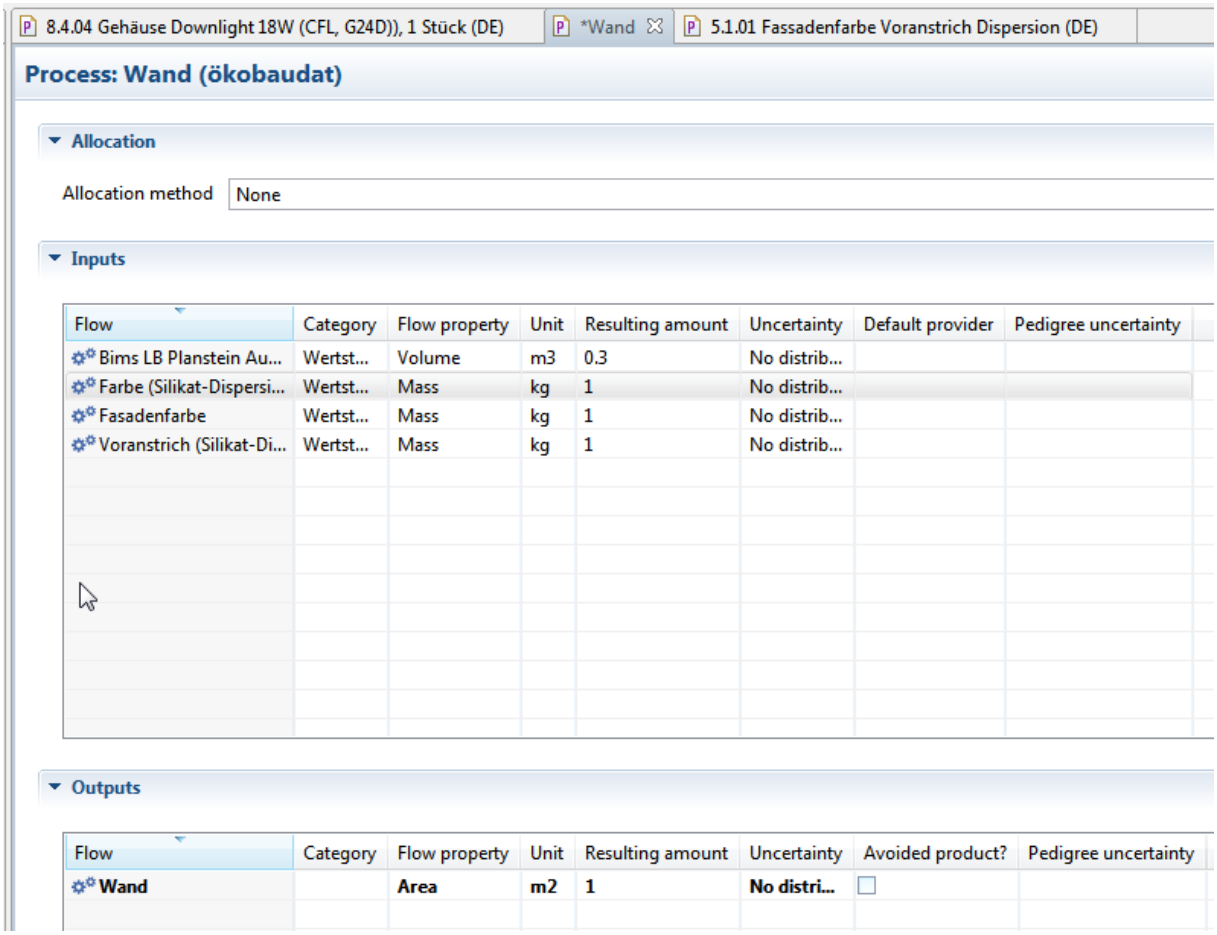

ökobaudat
Projects
Product systems
LCIA methods
Processes
Bauindustrie
Beschichtungen
Fassadenfarben
5.1.01 Fassadenfarbe Voranstrich Dispersion (DE)
5.1.01 Fassadenfarbe Voranstrich Silikat-Dispersion (DE)
5.4.01 Fassadenfarbe Dispersionsfarbe (DE)
5.4.02 Fassadenfarbe Silikat-Dispersionsfarbe (DE)
5.4.03 Fassadenfarbe Silikonharzfarbe (DE)
Innenfarben
Lacke und Lasuren
Gebäudetechnik
Elektro
Beleuchtung
8.4.04 Gehäuse Downlight 18W (CFL, G24D)), 1 Stück (DE)
8.4.04 Kompaktleuchtstofflampe 18W (Vorschaltgerät extern), 1 Stück (DE)
8.4.04 Leuchstoffröhrenfassung T8-18W (LFL), 1 Stück (DE)
8.4.04 Leuchstoffröhrenfassung T8-36W (LFL), 1 Stück (DE)
8.4.04 Leuchtstoffröhre T5-14W, 1 Stück (DE)
8.4.04 Leuchtstoffröhre T5-28W, 1 Stück (DE)
8.4.04 Leuchtstoffröhre T8-18W, 1 Stück (DE)
8.4.04 Leuchtstoffröhre T8-36W, 1 Stück (DE)
8.4.04 Rasterleuchte 2x T8-36W (LFL), 1 Stück (DE)
8.4.04 Rasterleuchte Deckenintegriert 2x T5-28W (LFL), 1 Stück (DE)
8.4.04 Rasterleuchte Deckenintegriert 3x T5-14W (LFL), 1 Stück (DE)
8.4.04 Rasterleuchte Deckenintegriert 3x T8-18W (LFL), 1 Stück (DE)
8.4.04 Vorschaltgerät EVG, 1 Stück (DE)
8.4.04 Vorschaltgerät VVG, 1 Stück (DE)
8.4.04 Wannenleuchte (Feuchtraum) T8-36W (LFL), 1 Stück (DE)
Kabel
Schalter und Steckdosen
EoL Gebäudetechnik
Heizung
Klimatisierung/Lüftung
Nutzung Gebäudetechnik
Sanitär
Transport
Holz
Isoliermaterial
Komponenten Fenster und Fassaden
Kunststoffe
Metalle
Mineralische Baustoffe
Sonstige
Energieumwandlung
Industriedaten
Produktion

4.2.2 Ein Beispielmodell

Als ein einfaches Beispiel erstellen wir eine Wand mit einem Innen- und Außenanstrich.

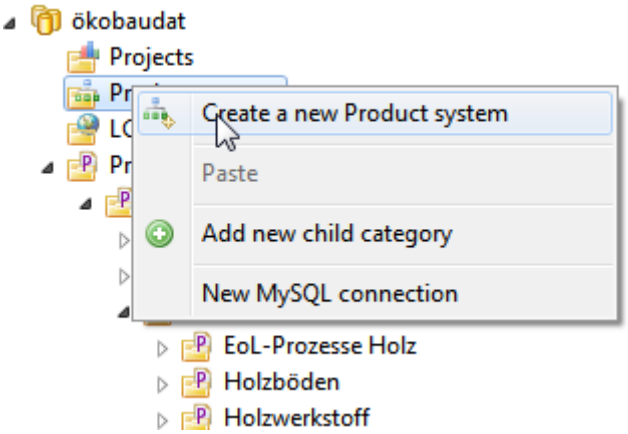


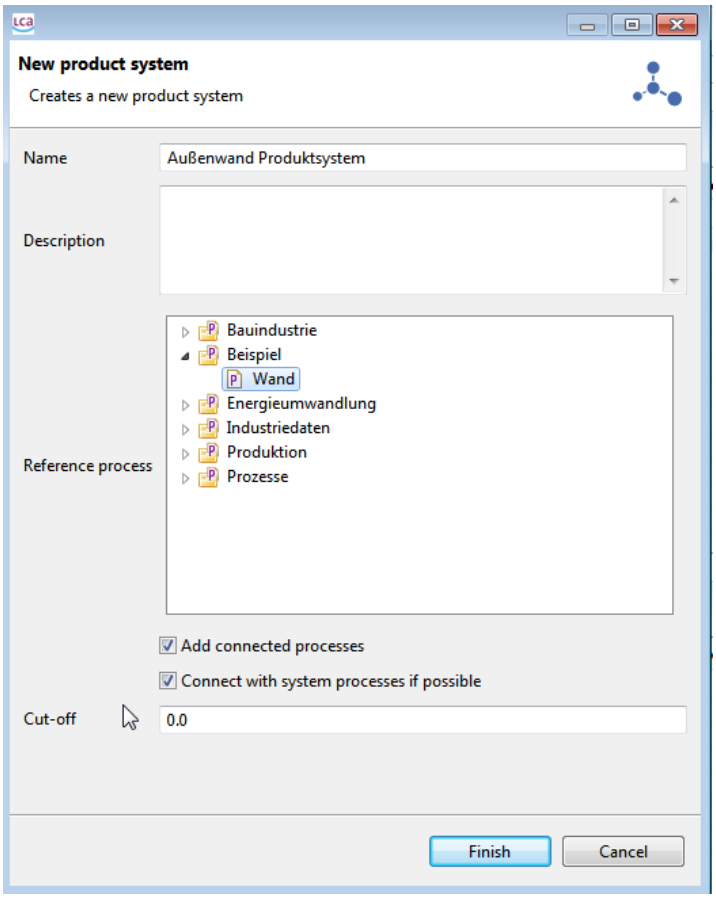


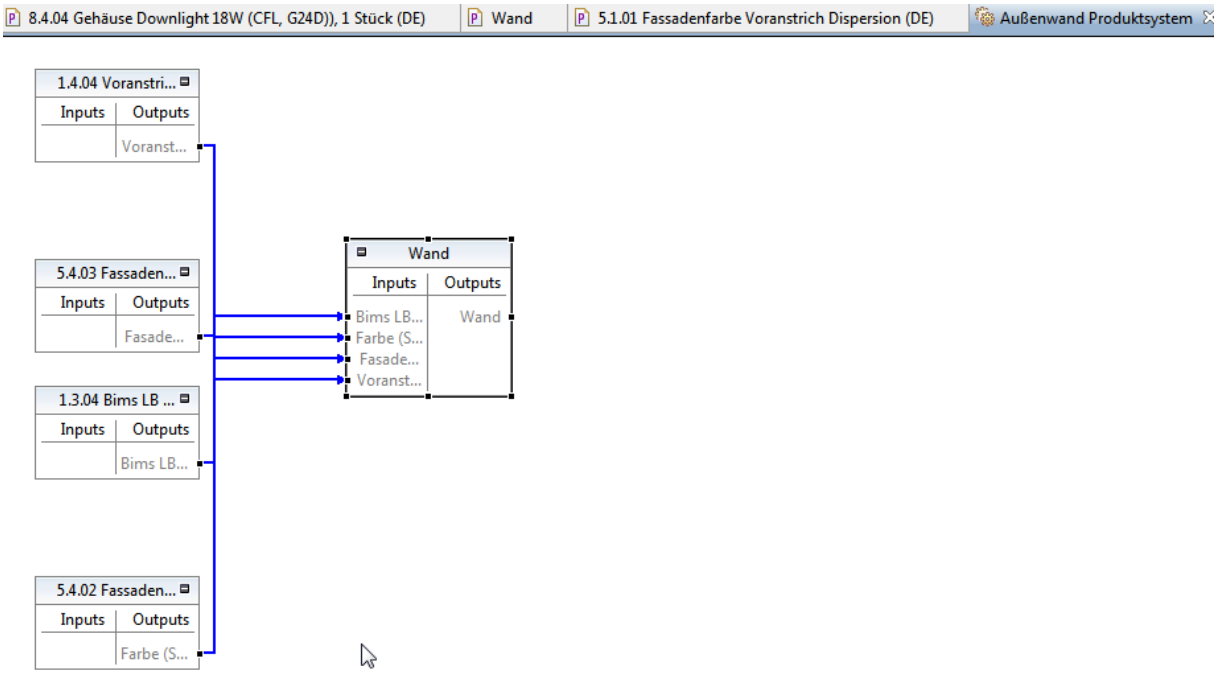


Die Zahlen sind natürlich nur beispielhaft.

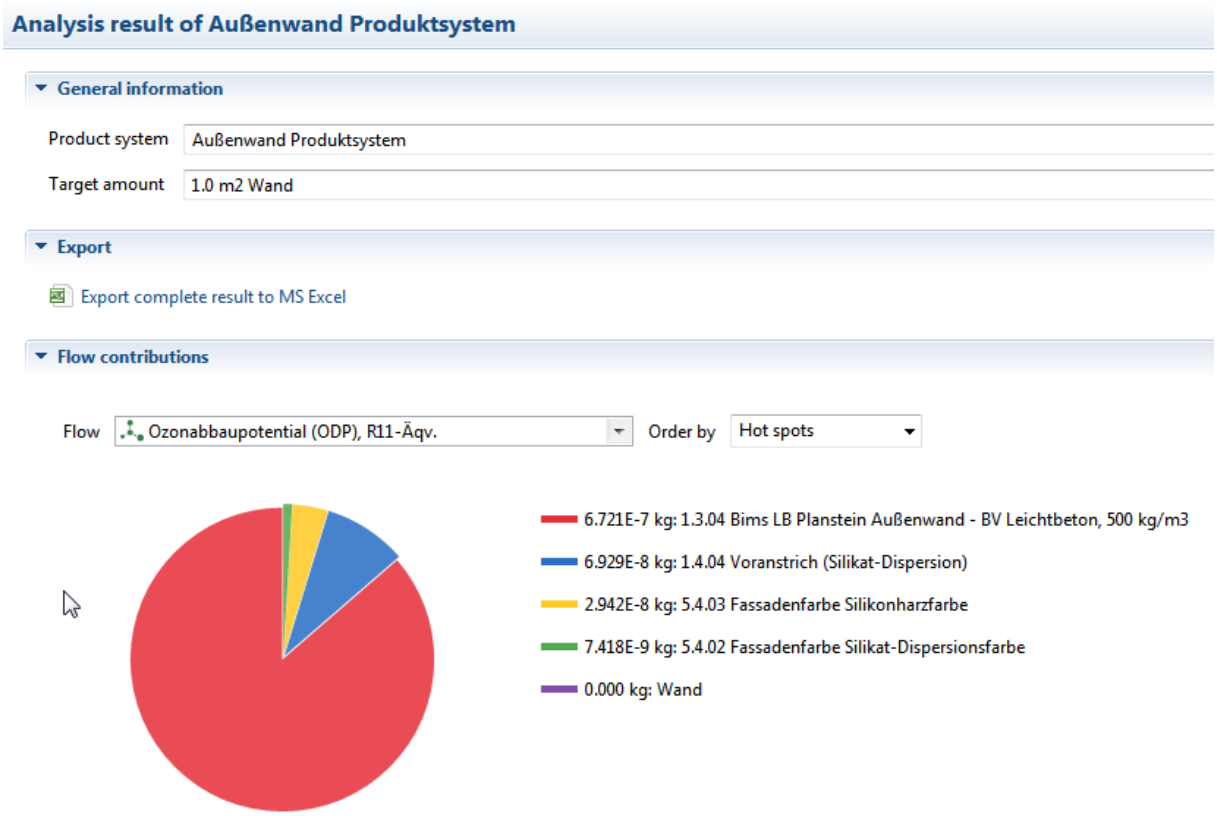
Anschließend erstellen wir ein Produktsystem mit dem neuen Prozess:

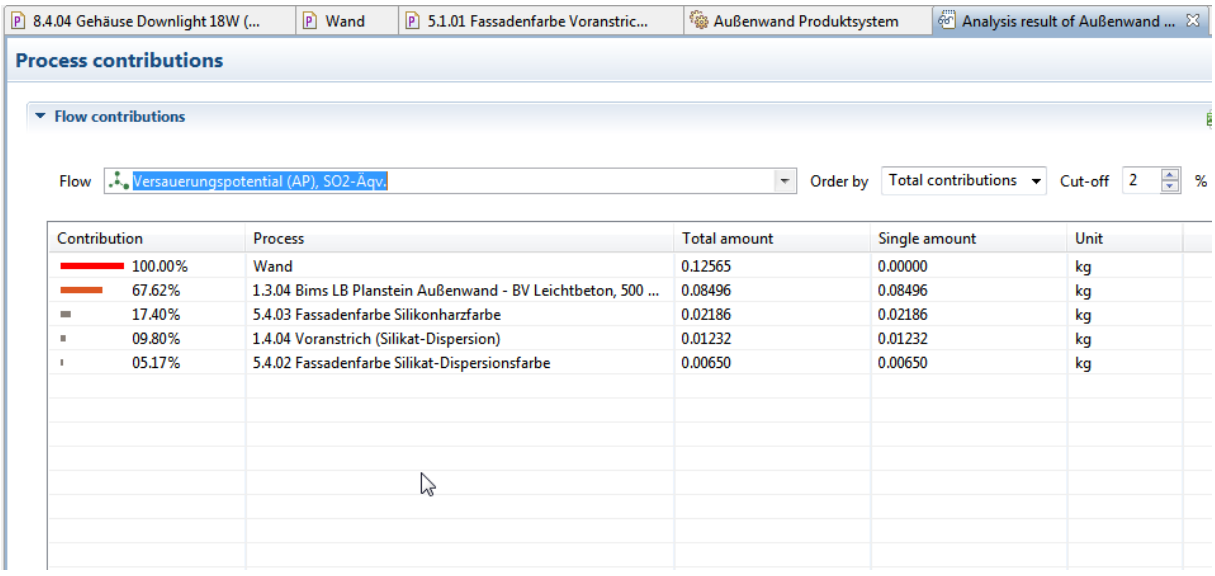






Dieses Produktsystem können wir dann berechnen und die Rechenergebnisse analysieren.





Natürlich lassen sich auch noch wesentlich kompliziertere Produktsysteme aufbauen.

4.2.3 Known issues

Das Portal weist darauf hin, dass einige Datensätze derzeit fehlerhaft sind (s.a. http://www.nachhaltigesbauen.de/no_cache/baustoff-und-gebaeudedaten/oekobaudat.html?cid=4776&did=2751&sechash=25f0155d):

Ausstehende Fehler

An der Behebung der Fehler wird im Moment gearbeitet. Der Austausch der fehlerhaften Datensätze ist geplant. Wir weisen darauf hin, dass es zurzeit bei Verwendung der aufgeführten Datensätze zu fehlerhaften Berechnungsergebnissen kommen kann.

Folgende Datensätze sind derzeit betroffen:

Fehlerhafte Datensätze	Fehler	Bekannt seit	Voraussichtliche Änderung
8.6.01 Nutzung - Strom-Wärmepumpe Wasser-Wasser (10/35) 8.6.01 Nutzung - Strom-Wärmepumpe Wasser-Wasser (10/50) 8.6.01 Nutzung - Strom-Wärmepumpe Wasser-Wasser (7/55)	falscher GWP Wert im xml Format	15.06.2012	Oktober 2012
8.2.01 Lüfter zentral WRG 5000 m³/h 8.2.01 Lüfter zentral WRG 1000 m³/h	Dokumentations-fehler - VDI Norm verweist auf Öltanks, nicht auf Lüfter	15.06.2012	Oktober 2012
4.1.04 Stahl warmgewalzte Bleche (2-20mm) 4.8.08 Recyclingpotenzial – Stahl Grobblech (warmgewalzt)	Inkonsistenz in der Dokumentation (technische Beschreibung; Anteil Primär- und Sekundärrouten)	23.08.2012	September 2012
4.1.03 Stahlprofil 4.8.09 Recyclingpotenzial Stahlprofil			
4.2.01 Edelstahlbleche	Beide Datensätze führen in Summe zu negativen Werten. EoL Datensatz muss angepasst werden (Skalierungsfehler)	09.03.2012	September 2012
4.8.02 Recyclingpotenzial - Edelstahlblech			

(Stand: 20.09.2012_bro)

Obwohl das Datum der „voraussichtlichen Änderung“ in der Vergangenheit liegt, sind die Datensätze bisher noch nicht korrigiert.

4.2.4 Weitere Informationen

Zu den methodischen Grundlagen der Modelle gibt es auf dem Nachhaltiges Bauen Portal einen Hintergrundbericht, hier:

www.nachhaltigesbauen.de/no_cache/baustoff-und-gebaeudedaten/oekobaudat.html?cid=4433&did=2531&sechash=ee37138c

Eine ältere Version, die speziell auf die EPD (Umweltproduktdeklaration) Besonderheit der Datensätze eingeht, ist ebenfalls noch verfügbar, hier:

http://www.nachhaltigesbauen.de/no_cache/baustoff-und-gebaeudedaten/oekobaudat.html?cid=4264&did=2374&sechash=39f0debd

Informationen zur Verwendung von openLCA gibt es z.B. hier, in einem ‚documentation wiki‘, in englischer Sprache: www.openlca.org/documentation.

5 References

Benoît Norris, C.; Aulisio, D.; Norris, G.A. (2012): Visualizing Social Issues in Supply Chains Using The Social Hot Spot Database, https://www.gtap.agecon.purdue.edu/resources/download/5898.pdf

Norris, G. (2006): Social Impacts in Product Life Cycles: Towards Life Cycle Attribute Assessment. Int J LCA 11: Special Issue 1: 97–104.

Ciroth, A.: Aggregation in Social LCA Case Studies, presentation, SETAC Case Study Symposium Copenhagen, Nov. 26 - 28, www.greendelta.com/uploads/media/SETAC_CPH_ac_socialaggr.pdf

6 Contact

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