Converting process data sets from SimaPro to EcoSpold 2 using openLCA

SimaPro CSV export Michael Srocka, Andreas Ciroth, GreenDelta

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0 Background

A feature to read process files exported from SimaPro (<u>www.pre-sustainability.com/simapro</u>) in csv format into the openLCA LCA software (<u>www.openlca.org</u>), and to export these files in a specific EcoSpold 2 format that can be imported into the ecoEditor as it is available from the ecoinvent website (<u>www.ecoinvent.org</u>), has been developed by GreenDelta, with financial support from the ecoinvent centre.

The procedure is straightforward and described in the following.

I Export the CSV files from SimaPro

1. Select the processes you want to export:

🚊 Material		Zucchini {GLO} production Alloc Def, U	kg	Com
		White asparagus {GLO} production Alloc Def, U	kg	Com
Animal feed		Nheat grain, Swiss integrated production {CH} wheat production, Swiss integrated production, intensive Al kg		Com
Market		Wheat grain, Swiss integrated production {CH} wheat production, Swiss integrated production, extensiv	e Akg	Com
Transformation		Wheat grain, organic {RoW} wheat production, organic Alloc Def, U	kg	Com
Animal production		Wheat grain, organic {CH} wheat production, organic Alloc Def, U	kg	Com
Food		Wheat grain {US} wheat production Alloc Def, U	kg	Com
		Wheat grain {RoW} wheat production Alloc Def, U	kg	Com
Iransformation		Wheat grain {FR} wheat production Alloc Def, U	kg	Com
H. Oliseed meals		Wheat grain {ES} wheat production Alloc Def, U	kg	Com
Plant original		Wheat grain {DE} wheat production Alloc Def, U	kg	Com
E Plant seeds		Vine tomato {GLO} production Alloc Def, U	kg	Com
		Tomato {GLO} production Alloc Def, U	kg	Com
- Market	-	Sugar, from sugarcane {RoW} cane sugar production with ethanol by-product Alloc Def, U	kg	Com
Infrastructure	=	Sugar, from sugarcane {BR} cane sugar production with ethanol by-product Alloc Def, U	kg	Com
Transformation		Sugar, from sugar beet {RoW} beet sugar production Alloc Def, U	kg	Com
⊡ · Chemicals		Sugar, from sugar beet {CH} beet sugar production Alloc Def, U	kg	Com
		Strawberry {GLO} production Alloc Def, U	kg	Com
Electronics		Snipach (GLO) I production I Alloc Def. II	ka	Com
⊞. Glass		The LCA study, from which this LCI has been derived, contains detailed descriptions of the system bound	laries and the	data sourc
		et al. 2012). The publication is published and freely available with comprehensive supporting information:		

2. Open the export wizard under 'File/Export'. Select 'CSV file' as output type, semicolon as format option, and the processes you want to export under 'Selection':

CSV file	© Summary © Details	C Category One list
C Current C Selection C All of this project All (including libraries) Related objects (system descriptions, I Include sub product stages and proces	(1) (2) (10444) (10444) substances, units, etc.) sses	Output fields Skip empty fields Uncertainty values Convert expressions to constants
CSV file format separator: C Tab C Comma C Comma C Semicolon Page break after each object		EcoSpold options Use multiple xml files Export mapping file Export ElementaryFlows.xml F. Only used elementary flows Ecoinvent compatible

II Import the SimaPro CSV file into openLCA

3. Create a new database in openLCA via the context menu in the openLCA navigation view (alternatively, you can use an existing database and open it with a double click):

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File	Window	Help		
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	<u>.</u>			
0	New da	tabase	init process	
୬	Import	Import database		
	🗇 olca_tes	st_db		

4. Create a local database with the option 'Complete reference data' (we need the reference data for mapping flows, units etc.):

G	New database	ļ	- 6	×
New database				•
Create a new data	base			_1_
D : 1				
Database name	sp_es2[_conversion			
Database type	● Local ○ Remote			
Database conte	nt C Empty database Units and flow properties Complete reference data			
		<u>F</u> inish	Car	ncel

5. Right click on the database and select 'Import':



6. In the import select 'SimaPro CSV' as import option and select the CSV file you want to import:

	2	
Gelect Import SimaPro CSV files.	N2,	N,
Select an import source:		
type filter text		
 Cospold 1 Ecospold 2 ILCD SimaPro CSV ElCD Network Imp ILCD Network Imp ILCD Network Other LC3 Database Impo 	oort Import ort	

After the import you will see imported data sets under the same process categories as in SimaPro:



III Export the processes from openLCA to EcoSpold 2

7. As for the import, right click on the database and select 'Export':



8. In the export wizard, select EcoSpold 2 as export option:

LCa	N	Export		_ [×
Select Export processes a	ಟ್ s EcoSpold 2 activi	ty data sets		t	2
Select an export d	estination:				
type filter text					
 ∠ EcoSpold ∑ EcoSp ∑ Impac ∑ Proce ▷ ∠ ILCD ▷ ∠ ILCD Nets 	vold 2 ct methods sses work Export				
	< <u>B</u> ack	<u>N</u> ext >	<u>F</u> inish	Ca	ncel

9. Select the processes you want to export and an export directory where the files should be written:



IV Open the data sets in the ecoEditor

10. The ecoEditor cannot open EcoSpold 2 files with unknown "master data". Master data are flows, sources, units, compartments, locations etc. Thus, you first need to import the master data from a file before you can open the file. Select 'Import User Master Data From File' form the menu and select the EcoSpold 2 file which you want to open:



After this, you should be able to open the data set from an EcoSpold 2 file:



V Remove/Reset the imported master data

If you want to remove the imported master data in the ecoEditor, go to the installation folder of the ecoEditor under .../Documents/ecoinvent/ecoEditor and remove the XML files under xml/MasterData/Production/user. You may backup this folder before you delete these files.

VI Conversion issues

Field length

In SimaPro 8 product names can be something like: *Heat, central or small-scale, other than natural gas {Europe without Switzerland}| market for heat, central or small-scale, other than natural gas | Alloc Def, U*

This string has 161 characters but only 120 characters are allowed in the EcoSpold 2 format:



Thus, we have to cut names that are longer than 120 characters.

Meta-data mapping

Most of the meta-data are in a different format in SimaPro and EcoSpold 2 / ecoEditor, e.g.

- Categories: tree in SimaPro <-> flat list that cannot be extended in the ecoEditor
- Time: fixed enumeration in SimaPro <-> start and end date in EcoSpold 2
- Geography: only five locations in SimaPro
- Contact information: free text in SimaPro <-> structured person tags in EcoSpold 2
- ...

Some of these issues can be fixed when editing the data set after the export in openLCA or the ecoEditor.

ecoEditor and SimaPro Version

The features have been developed and tested using the following ecoEditor version (screenshot from the ecoinvent website):

ecoEditor for ecoinvent version 3 (freeware, version v3.3.65.10874, released 02.12.2013)!

For SimaPro, a multi user developer version 8.0.1 was used.

Upcoming versions of the software systems may behave differently.

The import and export features are available in the openLCA version 1.4.