

28.05.2024, Berlin

## About db\_calc

This is a script to calculate an entire, active database in openLCA, for a selected impact assessment method that is in the database. Output is the result of the calculation over the entire life cycle, provided for all processes in the database, for all impact categories in the LCIA method, in a csv file.

The calculation takes literally minutes for an entire ecoinvent 3.10 unit process database.

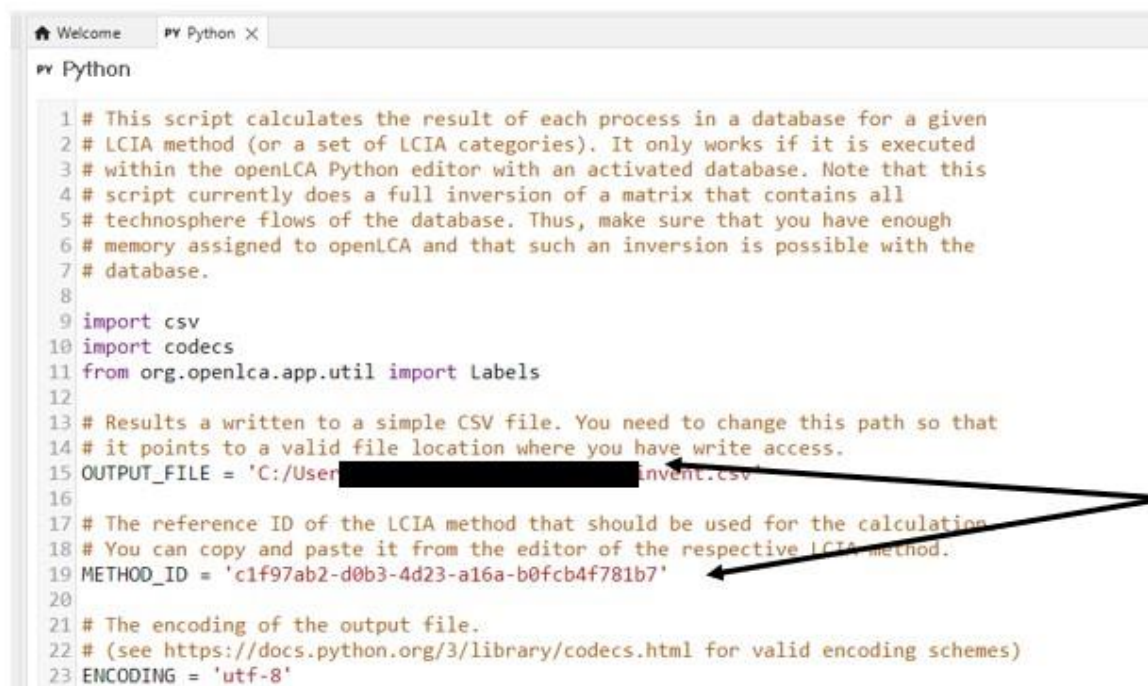
Author: Michael Srocka, GreenDelta, 2024. Public version 1.0

## Suitable for

openLCA 2.1 and newer. The selected database must be valid, and it should not have ambiguous links (check linking properties first). Depending on the database, 20 GB of RAM should be allocated to openLCA, or more (~18.5 GB is needed for ecoinvent 3.10).

## How to use it

Paste the code into the Python Developer window in openLCA, activate the database, specify the location of the output and the UUID of the LCIA method, run the script.



```
1 # This script calculates the result of each process in a database for a given
2 # LCIA method (or a set of LCIA categories). It only works if it is executed
3 # within the openLCA Python editor with an activated database. Note that this
4 # script currently does a full inversion of a matrix that contains all
5 # technosphere flows of the database. Thus, make sure that you have enough
6 # memory assigned to openLCA and that such an inversion is possible with the
7 # database.
8
9 import csv
10 import codecs
11 from org.openlca.app.util import Labels
12
13 # Results are written to a simple CSV file. You need to change this path so that
14 # it points to a valid file location where you have write access.
15 OUTPUT_FILE = 'C:/User/[redacted]/invent.csv'
16
17 # The reference ID of the LCIA method that should be used for the calculation
18 # You can copy and paste it from the editor of the respective LCIA method.
19 METHOD_ID = 'c1f97ab2-d0b3-4d23-a16a-b0fcb4f781b7'
20
21 # The encoding of the output file.
22 # (see https://docs.python.org/3/library/codecs.html for valid encoding schemes)
23 ENCODING = 'utf-8'
```

Figure 1. Setting the output path and the UUID of the method

1	process id,process name,flow id,flow name,reference amount,reference unit,EN15804   Global Warming Potential - total (GWP-total) - [kg CO2 eq.],EN15804   Abiotic depletio
2	a4c87127-4283-4f28-8a15-e537e8a360a9,"market for integrated circuit, memory type   integrated circuit, memory type   EN15804GD, U - GLO",64aceba0-b835-4edd-8437-f194e0b95
3	ff531008-2ff2-473b-b59d-a7e8543fdcbe,"treatment of slag from metallurgical grade silicon production, inert material landfill   slag from metallurgical grade silicon produ
4	b2d56669-c41c-41c9-99d2-76fa366b4b36,"solder production, paste, Sn63Pb37, for electronics industry   solder, paste, Sn63Pb37, for electronics industry   EN15804GD, U - GL
5	38cd2b3-4d2b-4ab6-bf4d-e64ccfb3a35f,"market for hard coal   hard coal   EN15804GD, U - Row",0d3eda5a-4601-4573-9549-0701c459ab88,hard coal,1,kg,0.41025249138002823,25.40
6	394d0cb2-cf7b-4a50-af30-bdccc1ea30772,"textile production, kenaf, weaving   textile, kenaf   EN15804GD, U - Row",a4c116d8-b097-4845-a0d6-3d433e9ba3fa,"textile, kenaf",1,kg
7	cf5a0b65-5ea0-4e95-b302-c441c98d7a27,"electricity, from municipal waste incineration to generic market for electricity, medium voltage   electricity, medium voltage   EN1
8	312f2890-b8bf-4e93-a592-939a9db90d38,"welding, arc, steel   welding, arc, steel   EN15804GD, U - Row",06194d2b-4c2b-44de-9a29-1a364616a1d2,"welding, arc, steel",1,m,0.214
9	8d286a47-0cd7-4ae5-81da-fb3e572a0f16,"market for electricity, low voltage   electricity, low voltage   EN15804GD, U - IE",d69294d7-8d64-4915-a896-9996a014c410,"electricit
10	48c09270-da18-41af-ae7a-76202cc572b9,"market for waste paperboard   waste paperboard   EN15804GD, U - HU",42baed81-24d1-4aed-a128-cc7d35ddac10,waste paperboard,1,kg,3.265
11	d0506d41-4d43-4bd1-b71e-7b2f7cf973ba,"electricity production, peat   electricity, high voltage   EN15804GD, U - FI",66c93e71-f32b-4591-901c-55395db5c132,"electricity, hig
12	09045dfc-9f48-4163-8c15-1b85333a25d7,"treatment of sewage sludge, 70% water, MWT, MW from wafer fabrication, municipal incineration FAE   sewage sludge, 70% water, MWT, W
13	d79d8f4a-eaa9-40ce-85cd-3ea3d2888166,"electricity voltage transformation from medium to low voltage   electricity, low voltage   EN15804GD, U - IN-North-eastern grid",d69
14	55753056-a15c-43d2-a5ea-ee336642b5c,"market for municipal solid waste   municipal solid waste   EN15804GD, U - SI",27da8138-82ba-485c-a800-b09efdc0b491,municipal solid w
15	00e949aa-8f1f-4c10-b0e8-353303d4051a,"catch crop growing, ryegrass-Egyptian&Persian clover-mixture, August-October, not fertilised, one cut   ryegrass-Egyptian&Persian cl
16	a62551ed-7a0e-44ba-8b95-592b8dd7f9fc,"market for chlorothalonil   chlorothalonil   EN15804GD, U - GLO",ec7efaf0f-95a5-419f-8446-bb26f42af6b8,chlorothalonil,1,kg,4.03283087
17	b0256702-9800-4031-9c46-316a80d593d9,"heat and power co-generation, natural gas, combined cycle power plant, 400MW electrical   heat, district or industrial, natural gas
18	319f9805-2e9d-4a63-94ae-5d4a1013d4eb,"heat and power co-generation, natural gas, combined cycle power plant, 400MW electrical   electricity, high voltage   EN15804GD, U -
19	064060b6-92c5-4d7a-8b6a-f9032824385a,"blower and heat exchange unit production, GE 250 RH   blower and heat exchange unit, GE 250 RH   EN15804GD, U - CH",87062d01-a1ca-45
20	ff73de4c-8d0f-4047-a0f6-a05ca81130c1,"market for planting, by no till drill   planting, by no till drill   EN15804GD, U - GLO",efc0f101-4001-51d7-8861-c451597573d2,"plant
21	044ae0e2-7054-43f4-a0f6-e8b041281172,"chimney production   chimney   EN15804GD, U - CH",21663725-f3b4-4d6a-a45a-baf3cb343a6a,chimney,1,m,12.10652307950467,65.422560085868
22	14356f12-0100-4323-00f6-c00000000000,"chimney production   chimney   EN15804GD, U - CH",21663725-f3b4-4d6a-a45a-baf3cb343a6a,chimney,1,m,12.10652307950467,65.422560085868

Figure 2. A screenshot from the result

GreenDelta GmbH

Alt-Moabit 130

10557 Berlin

Germany

[gd@greendelta.com](mailto:gd@greendelta.com)

<https://www.greendelta.com/>

GreenDelta