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## 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.

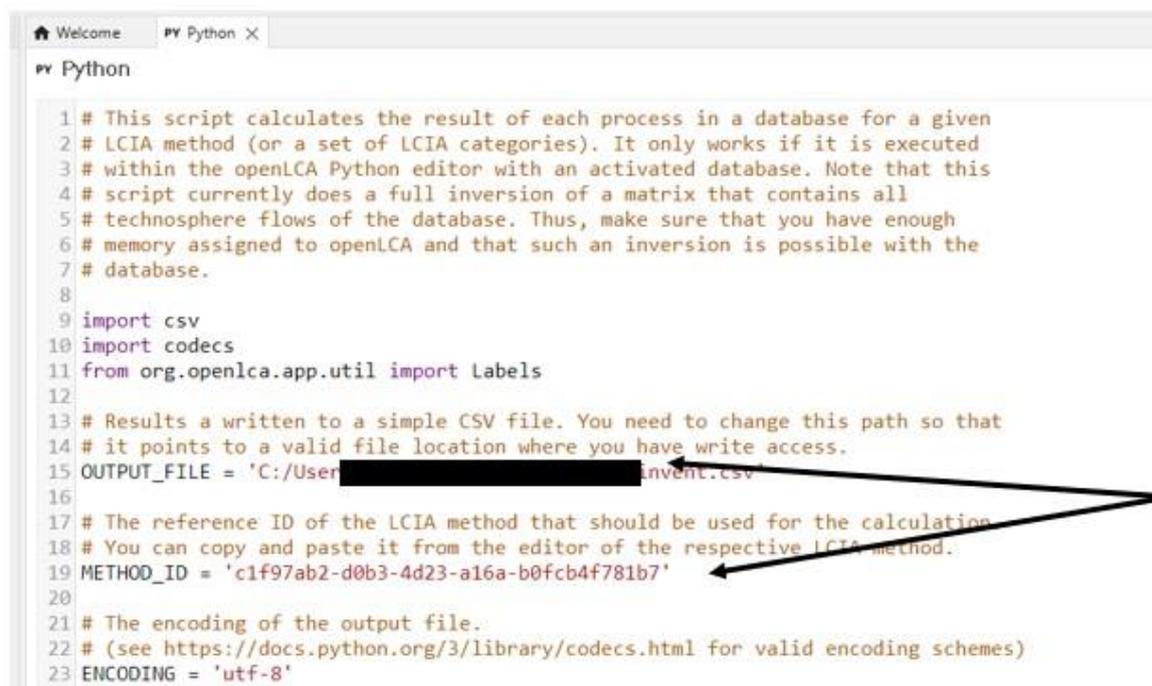
Author: Michael Srocka, GreenDelta, 2024. Public version 1.0

## 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 depleti
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-a7e8543fdcb6,"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 | 38cd2c3-4d2b-4a6b-bf4d-e6accfb3a35f,"market for hard coal | hard coal | EN15804GD, U - Row",0d3ed5a-4601-4573-9549-0701c459ab88,hard coal,1,kg,0.41025249138002823,25.40
6 | 394d0cb2-cf7b-4a50-af30-bdcccfa30772,"textile production, kenaf, weaving | textile, kenaf | EN15804GD, U - Row",a4c116d8-b097-4845-a0d6-3d43e9ba3fa,"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-a592-939a9db0d38,"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",27da8130-82ba-485c-a800-b09efdc08491,municipal solid w
15 | 60e949aa-8f1f-4c10-b0e8-353303d4051a,"catch crop growing, ryegrass-Egyptian&Persian Clover-mixture, August-October, not fertilised, one cut | ryegrass-Egyptian&Persian cl
16 | a6251ed-7a0e-44ba-8b95-592b8dd7f9fc,"market for chlorothalonil | chlorothalonil | EN15804GD, U - GLO",ec7efaf0f-95a5-419f-8446-bb26f42af668,chlorothalonil,1,kg,4.03283087
17 | b2b26702-9800-4031-9c46-316a80d593d9,"heat and power co-generation, natural gas, combined cycle power plant, 400MW electrical | heat, district or industrial, natural gas
18 | 319f90d5-7a04-4a63-94ae-5d4a1013dcb,"heat and power co-generation, natural gas, combined cycle power plant, 400MW electrical | electricity, high voltage | EN15804GD, U -
19 | 064060b6-92e5-4d7a-8b6a-f9032824385a,"blower and heat exchange unit production, GE 250 RH | blower and heat exchange unit, GE 250 RH | EN15804GD, U - CH",07062a01-a1cc-45
20 | ff73decf-8dbf-4047-a0bf-a05c81130c1,"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-e8b941281172,"chimney production | chimney | EN15804GD, U - CH",21663725-f3b4-4d6a-a45a-baf3cb343a6a,chimney,1,m,12.10652397959467,65.422560885868
22 | 044ae0e2-7054-43f4-a0f6-e8b941281172,"chimney production | chimney | EN15804GD, U - CH",21663725-f3b4-4d6a-a45a-baf3cb343a6a,chimney,1,m,12.10652397959467,65.422560885868
```

Figure 2. A screenshot from the result

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