

```
stew@SC-McD:~$ venv trex
(trex) stew@SC-McD:~$ trex
(trex) stew@SC-McD:~/code/gh/T-reX$ python src/T-reX/
config/          CustomConfig.py      ExchangeEditor.py  FutureScenarios.py  main.py          MethodEditor.py    Sea
config_backup/   data/          ExplodeDatabase.py  __init__.py         MakeCustomDatabase.py  __pycache__/_
(trex) stew@SC-McD:~/code/gh/T-reX$ python src/T-reX/main.py
Using environment variable BRIGHTWAY2_DIR for data directory:
/home/stew/brightway2data
```

**** Starting the T-reX tool ****

[illegible]

```
*** Starting FutureScenarios.py ***
    Using premise version (2, 0, 2)
Deleted existing project premise-SSP2-cutoff
Created new project premise-SSP2-cutoff from default
Cache folder cleared!
```

**** Using: ecoinvent-3.9.1-cutoff****

```
** Processing scenario set 1 of 7, batch size 5 **  
- Extracting source database  
Cannot find cached database. Will create one now for next time...  
Getting activity data  
100%|███████████████████████████████████████████████████████████  
Adding exchange data to activities  
100%|███████████████████████████████████████████████████████████  
Filling out exchange data  
100%|███████████████████████████████████████████████████████████  
Set missing location of datasets to global scope.  
Set missing location of production exchanges to scope of dataset.  
Correct missing location of technosphere exchanges.  
Correct missing flow categories for biosphere exchanges  
Remove empty exchanges.  
- Extracting inventories  
Cannot find cached inventories. Will create them now for next time...  
Importing default inventories...
```

Extracted 1 worksheets in 0.07 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.02 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Extracted 7 worksheets in 0.02 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.03 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.02 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.02 seconds
Extracted 1 worksheets in 0.27 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
The following datasets to import already exist in the source database. They will not be imported

+-----+-----+-----+-----+				
	Name		Reference product	Location File

```
+-----+-----+-----+-----+
| fluorspar production, 97% puri | fluorspar, 97% purity | GLO | lci-PV.xlsx |
| metallization paste production | metallization paste, back side | RER | lci-PV.xlsx |
| metallization paste production | metallization paste, back side | RER | lci-PV.xlsx |
| metallization paste production | metallization paste, front sid | RER | lci-PV.xlsx |
| photovoltaic module production | photovoltaic module, building- | RER | lci-PV.xlsx |
| photovoltaic module production | photovoltaic module, building- | RER | lci-PV.xlsx |
| photovoltaic mounting system p | photovoltaic mounting system, | RER | lci-PV.xlsx |
| photovoltaic mounting system p | photovoltaic mounting system, | RER | lci-PV.xlsx |
| photovoltaic mounting system p | photovoltaic mounting system, | RER | lci-PV.xlsx |
| photovoltaic panel factory con | photovoltaic panel factory | GLO | lci-PV.xlsx |
| polyvinylfluoride production | polyvinylfluoride | US | lci-PV.xlsx |
| polyvinylfluoride production, | polyvinylfluoride, dispersion | US | lci-PV.xlsx |
| polyvinylfluoride, film produc | polyvinylfluoride, film | US | lci-PV.xlsx |
| silicon production, metallurgi | silicon, metallurgical grade | NO | lci-PV.xlsx |
| vinyl fluoride production | vinyl fluoride | US | lci-PV.xlsx |
| wafer factory construction | wafer factory | DE | lci-PV.xlsx |
+-----+-----+-----+-----+

Extracted 1 worksheets in 0.04 seconds
Extracted 1 worksheets in 0.01 seconds
Extracted 1 worksheets in 0.01 seconds
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.02 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
The following datasets to import already exist in the source database. They will not be imported
+-----+-----+-----+-----+
| Name | Reference product | Location | File |
+-----+-----+-----+-----+
| carbon dioxide, captured at ce | carbon dioxide, captured and r | RER | lci-synfuels-from-methanol-fro |
+-----+-----+-----+-----+

Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
The following datasets to import already exist in the source database. They will not be imported
+-----+-----+-----+-----+
| Name | Reference product | Location | File |
+-----+-----+-----+-----+
| methanol distillation, hydroge | methanol, purified | RER | lci-synfuels-from-methanol-fro |
| methanol synthesis, hydrogen f | methanol, unpurified | RER | lci-synfuels-from-methanol-fro |
+-----+-----+-----+-----+

Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
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Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.02 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.02 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.00 seconds
Extracted 1 worksheets in 0.01 seconds
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
The following datasets to import already exist in the source database. They will not be imported
+-----+-----+-----+-----+
|      Name      | Reference product | Location |      File      |
+-----+-----+-----+-----+
| methanol production facility, | methanol production facility, | RER  | lci-synfuels-from-methanol-fro |
+-----+-----+-----+-----+
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 5 worksheets in 0.11 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
```

Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.02 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.05 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds

Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.02 seconds
Extracted 1 worksheets in 0.01 seconds
Extracted 2 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Extracted 1 worksheets in 0.01 seconds
Extracted 1 worksheets in 0.02 seconds
Extracted 1 worksheets in 0.01 seconds
Extracted 1 worksheets in 0.03 seconds
Extracted 1 worksheets in 0.02 seconds
Extracted 1 worksheets in 0.01 seconds
Migrating to 3.8 first
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Applying strategy: migrate_datasets
Applying strategy: migrate_exchanges
Data cached. It is advised to restart your workflow at this point.
This allows premise to use the cached data instead, which results in
a faster workflow.
- Fetching IAM data
Done!

**** Updating sectors... ****

`update()` will skip the following sectors: 'buses', 'cars', 'two_wheelers'.
If you want to update these sectors, please run them separately afterwards.
Updating: trucks: 100% [████████████████████] 9/9 [07:48<00:00, 52.06s/it]
Done!

Updating: cars: 100% [████████████████████] 1/1 [00:48<00:00, 48.38s/it]
Done!

Successfully updated cars

Updating: buses: 100% [████████████████████] 1/1 [00:40<00:00, 40.27s/it]
Done!

Successfully updated buses

Updating: two_wheelers: 0% [████████████████████] 0/1 [00:00<?, ?it/s] No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
Updating: two_wheelers: 100% [████████████████████] 1/1 [00:38<00:00, 38.79s/it]
Done!

Successfully updated two_wheelers

Write new database(s) to Brightway.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:25

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 15:37:04

Finished: 03/21/2024 15:37:29

Total time elapsed: 00:00:25

CPU %: 99.90

Memory %: 18.78

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2020

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 15:38:37

Finished: 03/21/2024 15:39:04

Total time elapsed: 00:00:26

CPU %: 99.90

Memory %: 18.81

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2025

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:25

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 15:40:21

Finished: 03/21/2024 15:40:47

Total time elapsed: 00:00:25

CPU %: 99.80

Memory %: 18.83

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2030

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:29

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 15:42:04

Finished: 03/21/2024 15:42:33

Total time elapsed: 00:00:29

CPU %: 99.90

Memory %: 18.86

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2035

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 15:43:54

Finished: 03/21/2024 15:44:20

Total time elapsed: 00:00:26

CPU %: 99.90

Memory %: 18.95

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2040

Generate scenario report.

Report saved under /home/stew/code/gh/T-reX/data/premise/export/scenario_report.

Generate change report.

Report saved under /home/stew/code/gh/T-reX/data/premise.

**** Processing scenario set 2 of 7, batch size 5 ****

- Extracting source database

- Extracting inventories

- Fetching IAM data

Done!

***** Updating sectors... *****

`update()` will skip the following sectors: 'buses', 'cars', 'two_wheelers'.

If you want to update these sectors, please run them separately afterwards.

Updating: trucks: 100% [████████████████████] 9/9 [07:59<00:00, 53.25s/it]

Done!

Updating: cars: 100% [████████████████████] 1/1 [00:48<00:00, 48.48s/it]

Done!

Successfully updated cars

Updating: buses: 100%|████████████████████| 1/1 [00:52<00:00, 52.19s/it]
Done!

Successfully updated buses

Updating: two_wheelers: 0%|████████████████████| 0/1 [00:00<?, ?it/s]No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
Updating: two_wheelers: 100%|████████████████████| 1/1 [00:32<00:00, 32.68s/it]
Done!

Successfully updated two_wheelers

Write new database(s) to Brightway.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:00
Total time elapsed: 00:00:26
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 15:58:17
Finished: 03/21/2024 15:58:43
Total time elapsed: 00:00:26
CPU %: 99.80
Memory %: 27.01
Created database:ecoinvent_cutoff_3.9_remind_SSP2-Base_2045
Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:00
Total time elapsed: 00:00:32
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 16:00:13
Finished: 03/21/2024 16:00:46
Total time elapsed: 00:00:32
CPU %: 100.00
Memory %: 27.01
Created database:ecoinvent_cutoff_3.9_remind_SSP2-Base_2050
Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:00
Total time elapsed: 00:00:27
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 16:02:22
Finished: 03/21/2024 16:02:50
Total time elapsed: 00:00:27
CPU %: 99.90
Memory %: 27.02
Created database:ecoinvent_cutoff_3.9_remind_SSP2-Base_2055
Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:00
Total time elapsed: 00:00:26
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 16:04:28
Finished: 03/21/2024 16:04:54
Total time elapsed: 00:00:26
CPU %: 99.90
Memory %: 27.04
Created database:ecoinvent_cutoff_3.9_remind_SSP2-Base_2060

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:06:38

Finished: 03/21/2024 16:07:04

Total time elapsed: 00:00:26

CPU %: 99.80

Memory %: 27.08

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2065

Generate scenario report.

Report saved under /home/stew/code/gh/T-reX/data/premise/export/scenario_report.

Generate change report.

Report saved under /home/stew/code/gh/T-reX/data/premise.

** Processing scenario set 3 of 7, batch size 5 **

- Extracting source database

- Extracting inventories

- Fetching IAM data

Done!

**** Updating sectors... ****

`update()` will skip the following sectors: 'buses', 'cars', 'two_wheelers'.

If you want to update these sectors, please run them separately afterwards.

Updating: trucks: 100% [#####] 9/9 [08:54<00:00, 59.44s/it]

Done!

Updating: cars: 100% [#####] 1/1 [00:52<00:00, 52.53s/it]

Done!

Successfully updated cars

Updating: buses: 100% [#####] 1/1 [00:43<00:00, 43.53s/it]

Done!

Successfully updated buses

Updating: two_wheelers: 0% [] 0/1 [00:00<?, ?it/s] No markets found for two wheeler in IAM data. Skipping.

No markets found for two wheeler in IAM data. Skipping.

No markets found for two wheeler in IAM data. Skipping.

No markets found for two wheeler in IAM data. Skipping.

No markets found for two wheeler in IAM data. Skipping.

Updating: two_wheelers: 100% [#####] 1/1 [00:27<00:00, 27.39s/it]

Done!

Successfully updated two_wheelers

Write new database(s) to Brightway.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:23:02

Finished: 03/21/2024 16:23:29

Total time elapsed: 00:00:26

CPU %: 99.90

Memory %: 31.35

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2070

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:25:16

Finished: 03/21/2024 16:25:42

Total time elapsed: 00:00:26

CPU %: 99.80

Memory %: 31.35

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2075

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:27:33

Finished: 03/21/2024 16:28:00

Total time elapsed: 00:00:26

CPU %: 99.90

Memory %: 31.35

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2080

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:28

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:30:00

Finished: 03/21/2024 16:30:28

Total time elapsed: 00:00:28

CPU %: 99.90

Memory %: 31.36

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2085

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:32:28

Finished: 03/21/2024 16:32:54

Total time elapsed: 00:00:26

CPU %: 99.80

Memory %: 31.39

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2090

Generate scenario report.

Report saved under /home/stew/code/gh/T-reX/data/premise/export/scenario_report.

Generate change report.

Report saved under /home/stew/code/gh/T-reX/data/premise.

**** Processing scenario set 4 of 7, batch size 5 ****

- Extracting source database

- Extracting inventories

- Fetching IAM data

Done!

***** Updating sectors... *****

`update()` will skip the following sectors: 'buses', 'cars', 'two_wheelers'.

If you want to update these sectors, please run them separately afterwards.

Updating: trucks: 100%[████████████████████] 9/9 [08:07<00:00, 54.18s/it]

Done!

Updating: cars: 100%[████████████████████] 1/1 [00:50<00:00, 50.17s/it]

Done!

Successfully updated cars

Updating: buses: 100%[████████████████████] 1/1 [00:41<00:00, 41.41s/it]

Done!

Successfully updated buses

Updating: two_wheelers: 0% | 0/1 [00:00<?, ?it/s]No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
Updating: two_wheelers: 100% | 1/1 [00:35<00:00, 35.86s/it]
Done!

Successfully updated two_wheelers

Write new database(s) to Brightway.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:49:06

Finished: 03/21/2024 16:49:33

Total time elapsed: 00:00:26

CPU %: 99.70

Memory %: 32.40

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2095

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:27

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:51:37

Finished: 03/21/2024 16:52:04

Total time elapsed: 00:00:27

CPU %: 99.80

Memory %: 32.40

Created database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2100

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:25

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:54:12

Finished: 03/21/2024 16:54:37

Total time elapsed: 00:00:25

CPU %: 99.80

Memory %: 32.41

Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:56:51

Finished: 03/21/2024 16:57:17

Total time elapsed: 00:00:26

CPU %: 99.80

Memory %: 32.43

Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:25

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 16:59:27

Finished: 03/21/2024 16:59:53

Total time elapsed: 00:00:25

CPU %: 99.90

Memory %: 32.50

Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030
Generate scenario report.
Report saved under /home/stew/code/gh/T-reX/data/premise/export/scenario_report.
Generate change report.
Report saved under /home/stew/code/gh/T-reX/data/premise.

**** Processing scenario set 5 of 7, batch size 5 ****

- Extracting source database
- Extracting inventories
- Fetching IAM data
Done!

***** Updating sectors... *****

`update()` will skip the following sectors: 'buses', 'cars', 'two_wheelers'.
If you want to update these sectors, please run them separately afterwards.
Updating: trucks: 100% [████████████████████] 9/9 [09:19<00:00, 62.11s/it]
Done!

Updating: cars: 100% [████████████████████] 1/1 [00:45<00:00, 45.04s/it]
Done!

Successfully updated cars

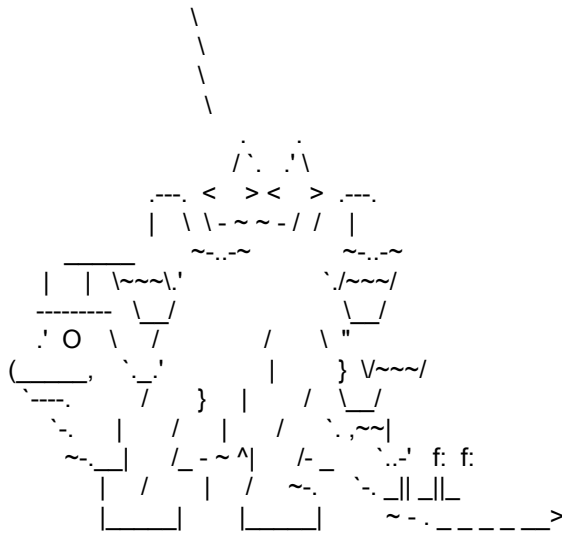
Updating: buses: 100% [████████████████████] 1/1 [02:21<00:00, 141.08s/it]
Done!

Successfully updated buses

Updating: two_wheelers: 0% [████████████████████] 0/1 [00:00<?, ?it/s] No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
Updating: two_wheelers: 100% [████████████████████] 1/1 [00:39<00:00, 39.36s/it]
Done!

Successfully updated two_wheelers

Write new database(s) to Brightway.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:00
Total time elapsed: 00:00:28
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 17:19:49
Finished: 03/21/2024 17:20:18
Total time elapsed: 00:00:28
CPU %: 99.00
Memory %: 33.54
Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035
Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:00
Total time elapsed: 00:00:36
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 17:23:01
Finished: 03/21/2024 17:23:37
Total time elapsed: 00:00:36
CPU %: 99.90



```

Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2020...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2025...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2030...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2035...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2040...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2045...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2050...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2055...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2060...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2065...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2070...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2075...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2080...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2085...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2090...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2095...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-Base_2100...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050...
Skipping existing ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055...

```

Creating 9 new future databases...

```

{'model': 'remind', 'pathway': 'SSP2-PkBudg500', 'year': 2060}
{'model': 'remind', 'pathway': 'SSP2-PkBudg500', 'year': 2065}
{'model': 'remind', 'pathway': 'SSP2-PkBudg500', 'year': 2070}
{'model': 'remind', 'pathway': 'SSP2-PkBudg500', 'year': 2075}
{'model': 'remind', 'pathway': 'SSP2-PkBudg500', 'year': 2080}
{'model': 'remind', 'pathway': 'SSP2-PkBudg500', 'year': 2085}
{'model': 'remind', 'pathway': 'SSP2-PkBudg500', 'year': 2090}
{'model': 'remind', 'pathway': 'SSP2-PkBudg500', 'year': 2095}
{'model': 'remind', 'pathway': 'SSP2-PkBudg500', 'year': 2100}

```

*** Starting FutureScenarios.py ***

Using premise version (2, 0, 2)

Project premise-SSP2-cutoff already exists, we will use it

** Using: ecoinvent-3.9.1-cutoff**

** Processing scenario set 1 of 3, batch size 3 **

- Extracting source database
- Extracting inventories
- Fetching IAM data

Done!

**** Updating sectors... ****

`update()` will skip the following sectors: 'buses', 'cars', 'two_wheelers'.

If you want to update these sectors, please run them separately afterwards.

Updating: trucks: 100% [████████████████████] 9/9 [06:00<00:00, 40.09s/it]

Done!

Updating: cars: 100% [████████████████████] 1/1 [00:37<00:00, 37.13s/it]

Done!

Successfully updated cars

Updating: buses: 100% [████████████████████] 1/1 [00:26<00:00, 26.09s/it]

Done!

Successfully updated buses

Updating: two_wheelers: 0% [] 0/1 [00:00<?, ?it/s] No markets found for two wheeler in IAM data. Skipping.

No markets found for two wheeler in IAM data. Skipping.

No markets found for two wheeler in IAM data. Skipping.

Updating: two_wheelers: 100% [████████████████████] 1/1 [00:22<00:00, 22.25s/it]

Done!

Successfully updated two_wheelers

Write new database(s) to Brightway.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 19:12:11

Finished: 03/21/2024 19:12:37

Total time elapsed: 00:00:26

CPU %: 99.40

Memory %: 13.61

Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 19:15:21

Finished: 03/21/2024 19:15:47

Total time elapsed: 00:00:26

CPU %: 99.80

Memory %: 13.73

Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 19:18:34

Finished: 03/21/2024 19:19:00

Total time elapsed: 00:00:26

CPU %: 99.80

Memory %: 13.75

Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070

Generate scenario report.

Report saved under /home/stew/code/gh/T-reX/data/premise/export/scenario_report.

Generate change report.

Report saved under /home/stew/code/gh/T-reX/data/premise.

** Processing scenario set 2 of 3, batch size 3 **

- Extracting source database
- Extracting inventories
- Fetching IAM data

Done!

**** Updating sectors... ****

`update()` will skip the following sectors: 'buses', 'cars', 'two_wheelers'.

If you want to update these sectors, please run them separately afterwards.

Updating: trucks: 100% [████████████████████] 9/9 [06:06<00:00, 40.71s/it]
Done!

Updating: cars: 100% [████████████████████] 1/1 [00:33<00:00, 33.07s/it]
Done!

Successfully updated cars

Updating: buses: 100% [████████████████████] 1/1 [00:25<00:00, 25.57s/it]
Done!

Successfully updated buses

Updating: two_wheelers: 0% [████████████████████] 0/1 [00:00<?, ?it/s] No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
Updating: two_wheelers: 100% [████████████████████] 1/1 [00:26<00:00, 26.39s/it]
Done!

Successfully updated two_wheelers

Write new database(s) to Brightway.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Running all checks...

Anomalies found: check the change report.

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:26

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 19:30:33

Finished: 03/21/2024 19:30:59

Total time elapsed: 00:00:26

CPU %: 100.00

Memory %: 16.76

Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:29

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 19:33:55

Finished: 03/21/2024 19:34:24

Total time elapsed: 00:00:29

CPU %: 99.80

Memory %: 16.79

Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080

Writing activities to SQLite3 database:

0% [#####] 100% | ETA: 00:00:00

Total time elapsed: 00:00:28

Title: Writing activities to SQLite3 database:

Started: 03/21/2024 19:37:20

Finished: 03/21/2024 19:37:49

Total time elapsed: 00:00:28

CPU %: 99.90

Memory %: 16.81

Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085

Generate scenario report.
Report saved under /home/stew/code/gh/T-reX/data/premise/export/scenario_report.
Generate change report.
Report saved under /home/stew/code/gh/T-reX/data/premise.

**** Processing scenario set 3 of 3, batch size 3 ****

- Extracting source database
- Extracting inventories
- Fetching IAM data
Done!

***** Updating sectors... *****

`update()` will skip the following sectors: 'buses', 'cars', 'two_wheelers'.
If you want to update these sectors, please run them separately afterwards.
Updating: trucks: 100%[██] 9/9 [06:18<00:00, 42.09s/it]
Done!

Updating: cars: 100%[██] 1/1 [00:33<00:00, 33.57s/it]
Done!

Successfully updated cars

Updating: buses: 100%[██] 1/1 [00:27<00:00, 27.27s/it]
Done!

Successfully updated buses

Updating: two_wheelers: 0%[██] 0/1 [00:00<?, ?it/s]No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
No markets found for two wheeler in IAM data. Skipping.
Updating: two_wheelers: 100%[██] 1/1 [00:22<00:00, 22.99s/it]
Done!

Successfully updated two_wheelers

Write new database(s) to Brightway.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Running all checks...
Anomalies found: check the change report.
Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:00
Total time elapsed: 00:00:27
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 19:50:08
Finished: 03/21/2024 19:50:36
Total time elapsed: 00:00:27
CPU %: 98.50
Memory %: 19.43
Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090
Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:00
Total time elapsed: 00:00:29
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 19:53:45
Finished: 03/21/2024 19:54:14
Total time elapsed: 00:00:29
CPU %: 99.90
Memory %: 19.43
Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095
Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:00
Total time elapsed: 00:00:26
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 19:57:27

```
Finished: 03/21/2024 19:57:54
Total time elapsed: 00:00:26
CPU %: 99.80
Memory %: 19.46
Created database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100
Generate scenario report.
Report saved under /home/stew/code/gh/T-reX/data/premise/export/scenario_report.
Generate change report.
Report saved under /home/stew/code/gh/T-reX/data/premise.
Adding ('IPCC 2021', 'climate change', 'GWP 100a, incl. H')
Applying strategy: csv_restore_tuples
Applying strategy: csv_numerize
Applying strategy: csv_drop_unknown
Applying strategy: set_biosphere_type
Applying strategy: drop_unspecified_subcategories
Applying strategy: link_iterable_by_fields
Applying strategy: drop_falsey_uncertainty_fields_but_keep_zeros
Applying strategy: convert_uncertainty_types_to_integers
Applied 8 strategies in 0.06 seconds
Wrote 1 LCIA methods with 248 characterization factors
Adding ('IPCC 2021', 'climate change', 'GWP 20a, incl. H and bio CO2')
Applying strategy: csv_restore_tuples
Applying strategy: csv_numerize
Applying strategy: csv_drop_unknown
Applying strategy: set_biosphere_type
Applying strategy: drop_unspecified_subcategories
Applying strategy: link_iterable_by_fields
Applying strategy: drop_falsey_uncertainty_fields_but_keep_zeros
Applying strategy: convert_uncertainty_types_to_integers
Applied 8 strategies in 0.07 seconds
Wrote 1 LCIA methods with 255 characterization factors
Adding ('IPCC 2021', 'climate change', 'GWP 20a, incl. H')
Applying strategy: csv_restore_tuples
Applying strategy: csv_numerize
Applying strategy: csv_drop_unknown
Applying strategy: set_biosphere_type
Applying strategy: drop_unspecified_subcategories
Applying strategy: link_iterable_by_fields
Applying strategy: drop_falsey_uncertainty_fields_but_keep_zeros
Applying strategy: convert_uncertainty_types_to_integers
Applied 8 strategies in 0.07 seconds
Wrote 1 LCIA methods with 248 characterization factors
Adding ('IPCC 2021', 'climate change', 'GWP 100a, incl. H and bio CO2')
Applying strategy: csv_restore_tuples
Applying strategy: csv_numerize
Applying strategy: csv_drop_unknown
Applying strategy: set_biosphere_type
Applying strategy: drop_unspecified_subcategories
Applying strategy: link_iterable_by_fields
Applying strategy: drop_falsey_uncertainty_fields_but_keep_zeros
Applying strategy: convert_uncertainty_types_to_integers
Applied 8 strategies in 0.06 seconds
Wrote 1 LCIA methods with 255 characterization factors
***** Done! *****
```

Starting T-reX for 35/35 databases in project premise-SSP2-cutoff

```
-----
ecoinvent-3.9.1-cutoff
ecoinvent_cutoff_3.9_remind_SSP2-Base_2020
ecoinvent_cutoff_3.9_remind_SSP2-Base_2025
ecoinvent_cutoff_3.9_remind_SSP2-Base_2030
ecoinvent_cutoff_3.9_remind_SSP2-Base_2035
ecoinvent_cutoff_3.9_remind_SSP2-Base_2040
ecoinvent_cutoff_3.9_remind_SSP2-Base_2045
ecoinvent_cutoff_3.9_remind_SSP2-Base_2050
ecoinvent_cutoff_3.9_remind_SSP2-Base_2055
ecoinvent_cutoff_3.9_remind_SSP2-Base_2060
ecoinvent_cutoff_3.9_remind_SSP2-Base_2065
ecoinvent_cutoff_3.9_remind_SSP2-Base_2070
ecoinvent_cutoff_3.9_remind_SSP2-Base_2075
ecoinvent_cutoff_3.9_remind_SSP2-Base_2080
```

```
ecoinvent_cutoff_3.9_remind_SSP2-Base_2085
ecoinvent_cutoff_3.9_remind_SSP2-Base_2090
ecoinvent_cutoff_3.9_remind_SSP2-Base_2095
ecoinvent_cutoff_3.9_remind_SSP2-Base_2100
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095
ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100
```

* Project premise-SSP2-cutoff will be copied to a new project: TreX-premise-SSP2-cutoff

**** Pre-processing database (1/35): ecoinvent-3.9.1-cutoff****

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent-3.9.1-cutoff', 'db_T_reX': 'TreX-premise-SSP2-cutoff'}
```

Starting T-reX for ecoinvent-3.9.1-cutoff

```
*** Starting ExplodeDatabase ***
```

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file '

** db: ecoinvent-3.9.1-cutoff, in project: TreX-premise-SSP2-cutoff will be processed

**** Opening the sausage...**

Getting activity data

100%

Adding exchange data to activities

100%

Filling out exchange data

100%

```
*** Extracting activities from db...
```

*** Exploding exchanges from activities...

```
*** Pickling...
```

Pickle is: 51 MB

*** The sausage <ecoinvent-3.9.1-cutoff> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

```
*** Loading pickle to dataframe ***
```

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	1687
WasteFootprint_recycling	kilogram	63
WasteFootprint_landfill	kilogram	1430
WasteFootprint_hazardous	kilogram	1498

** No results for WasteFootprint radioactive-kilogram

** No results for WasteFootprint_carbon dioxide-kilogram

WasteFootprint	total	kilogram	27830
----------------	-------	----------	-------

WasteFootprint_total	kilogram	27000	
WasteFootprint_digestion	cubic meter	6	

```
** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 295
WasteFootprint_radioactive | cubic meter | 295
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 3838
*** Finished searching for waste exchanges ***
```

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent-3.9.1-cutoff

in project: TreX-premise-SSP2-cutoff

```
** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
```

```

('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

```

* 1070 material markets were found:

	name	material_group	location
849	market for aluminium alloy, AlLi	aluminium	GLO
242	market for aluminium alloy, AlMg3	aluminium	GLO
37	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1003	market for aluminium around steel bi-metal str...	aluminium	GLO
1068	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
624	market for zinc slag	zinc	GLO
703	market for zinc sulfide	zinc	GLO
633	market for zirconium oxide	zirconium	GLO
489	market for zirconium sponge, nuclear-grade	zirconium	GLO
1001	market for zirconium tetrachloride	zirconium	GLO

[1070 rows x 3 columns]

* Extracting classifications...

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent-3.9.1-cutoff/material_activities.csv

*** Searching for material exchanges in ecoinvent-3.9.1-cutoff ***

*** Loading pickle to dataframe ***

There were 52480 matching exchanges found in ecoinvent-3.9.1-cutoff

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent-3.9.1-cutoff/material_exchanges.csv

*** Grouping material exchanges by material group

```

1822 : aluminium
26 : antimony
24 : bauxite
1 : beryllium
15 : borates
17 : cadmium
2575 : cement
2 : cerium
410 : chromium
1556 : coal(black)
499 : coal(brown)
166 : cobalt
68 : coke
915 : copper
1 : dysprosium
23823 : electricity
1 : erbium
1 : europium
22 : fluorspar
1 : gadolinium
3 : gallium
10 : gold
30 : graphite
43 : helium
1 : holmium
377 : hydrogen
13 : indium
49 : latex

```

184 : lead
 43 : lithium
 250 : magnesium
 5804 : natural gas
 342 : nickel
 22 : palladium
 503 : petroleum
 207 : phosphate rock
 164 : platinum
 37 : rare earth
 11 : rhodium
 553 : sand
 1 : scandium
 9 : selenium
 358 : silicon
 46 : silver
 27 : strontium
 3 : tantalum
 2 : tellurium
 103 : tin
 454 : titanium
 5 : tungsten
 136 : uranium
 34 : vegetable oil
 10145 : water
 557 : zinc
 9 : zirconium

** Pre-processing database (2/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2020**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2020

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2020, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 80 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2020> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84

```
WasteFootprint_landfill | kilogram | 1712
WasteFootprint_hazardous | kilogram | 1878
** No results for WasteFootprint_radioactive-kilogram
WasteFootprint_carbon dioxide | kilogram | 1135
WasteFootprint_total | kilogram | 30759
WasteFootprint_digestion | cubic meter | 6
** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 308
WasteFootprint_radioactive | cubic meter | 308
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 4695
*** Finished searching for waste exchanges ***
```

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2020
in project: TreX-premise-SSP2-cutoff

```
** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
```

```

('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

```

* 1646 material markets were found:

	name	material_group	location
1322	market for aluminium alloy, AlLi	aluminium	GLO
843	market for aluminium alloy, AlMg3	aluminium	GLO
224	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1228	market for aluminium around steel bi-metal str...	aluminium	GLO
462	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1150	market for zinc slag	zinc	GLO
831	market for zinc sulfide	zinc	GLO
57	market for zirconium oxide	zirconium	GLO
420	market for zirconium sponge, nuclear-grade	zirconium	GLO
784	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```

Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2020/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2020 ***

*** Loading pickle to dataframe ***

There were 48530 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2020

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2020/material_exchanges.cs

*** Grouping material exchanges by material group

```

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper

```


1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
686 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4105 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

** Pre-processing database (3/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2025**

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S
```

Starting T-reX for ecoinvent cutoff 3.9 remind SSP2-Base 2025

```
*** Starting ExplodeDatabase ***
```

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent cutoff 3.9 remind SSP2-Base 2025, in project: TreX-premise-SSP2-cutoff will be processed

**** Opening the sausage...**

Getting activity data

100%

Adding exchange data to activities

100%

Filling out exchange data

100%

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 83 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2025> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1135
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2025

in project: TreX-premise-SSP2-cuttoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
 ('market for antimony', 'antimony')
 ('market for bauxite', 'bauxite')
 ('market for beryllium', 'beryllium')
 ('market for bismuth', 'bismuth')
 ('market for cadmium', 'cadmium')
 ('market for calcium borates', 'borates')
 ('market for cement', 'cement')
 ('market for cerium', 'cerium')
 ('market for chromium', 'chromium')
 ('market for cobalt', 'cobalt')
 ('market for coke', 'coke')
 ('market for copper', 'copper')
 ('market for dysprosium', 'dysprosium')
 ('market for erbium', 'erbium')
 ('market for europium', 'europium')
 ('market for electricity', 'electricity')
 ('market for ferroniobium', 'niobium')
 ('market for fluorspar', 'fluorspar')
 ('market for gadolinium', 'gadolinium')
 ('market for gallium', 'gallium')
 ('market for gold', 'gold')
 ('market for graphite', 'graphite')
 ('market for hafnium', 'hafnium')
 ('market for hard coal', 'coal(black)')
 ('market for helium', 'helium')
 ('market for holmium', 'holmium')
 ('market for hydrogen', 'hydrogen')
 ('market for indium', 'indium')
 ('market for latex', 'latex')
 ('market for lead', 'lead')
 ('market for lignite', 'coal(brown)')

```
(market for lithium', 'lithium')
(market for magnesium', 'magnesium')
(market for natural gas,', 'natural gas')
(market for nickel', 'nickel')
(market for palladium', 'palladium')
(market for petroleum', 'petroleum')
(market for phosphate', 'phosphate rock')
(market for platinum', 'platinum')
(market for rare earth', 'rare earth')
(market for rhodium', 'rhodium')
(market for sand', 'sand')
(market for selenium', 'selenium')
(market for scandium', 'scandium')
(market for silicon', 'silicon')
(market for silver', 'silver')
(market for sodium borates', 'borates')
(market for strontium', 'strontium')
(market for tantalum', 'tantalum')
(market for tellurium', 'tellurium')
(market for tin', 'tin')
(market for titanium', 'titanium')
(market for uranium', 'uranium')
(market for tungsten', 'tungsten')
(market for vanadium', 'vanadium')
(market for vegetable oil,', 'vegetable oil')
(market for tap water', 'water')
(market for water,', 'water')
(market for zinc', 'zinc')
(market for zirconium', 'zirconium')
```

* 1646 material markets were found:

	name	material_group	location
725	market for aluminium alloy, ALi	aluminium	GLO
51	market for aluminium alloy, AlMg3	aluminium	GLO
717	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1610	market for aluminium around steel bi-metal str...	aluminium	GLO
482	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1587	market for zinc slag	zinc	GLO
1422	market for zinc sulfide	zinc	GLO
900	market for zirconium oxide	zirconium	GLO
809	market for zirconium sponge, nuclear-grade	zirconium	GLO
280	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2025/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2025 ***

*** Loading pickle to dataframe ***

There were 48726 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2025

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2025/material_exchanges.csv

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
952 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

** Pre-processing database (4/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2030**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====
Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2030
=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file '

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2030, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 82 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2030> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1135
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2030

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')

('market for fluorspar','fluorspar')
('market for gadolinium','gadolinium')
('market for gallium','gallium')
('market for gold','gold')
('market for graphite','graphite')
('market for hafnium','hafnium')
('market for hard coal','coal(black)')
('market for helium','helium')
('market for holmium','holmium')
('market for hydrogen','hydrogen')
('market for indium','indium')
('market for latex','latex')
('market for lead','lead')
('market for lignite','coal(brown)')
('market for lithium','lithium')
('market for magnesium','magnesium')
('market for natural gas','natural gas')
('market for nickel','nickel')
('market for palladium','palladium')
('market for petroleum','petroleum')
('market for phosphate','phosphate rock')
('market for platinum','platinum')
('market for rare earth','rare earth')
('market for rhodium','rhodium')
('market for sand','sand')
('market for selenium','selenium')
('market for scandium','scandium')
('market for silicon','silicon')
('market for silver','silver')
('market for sodium borates','borates')
('market for strontium','strontium')
('market for tantalum','tantalum')
('market for tellurium','tellurium')
('market for tin','tin')
('market for titanium','titanium')
('market for uranium','uranium')
('market for tungsten','tungsten')
('market for vanadium','vanadium')
('market for vegetable oil','vegetable oil')
('market for tap water','water')
('market for water','water')
('market for zinc','zinc')
('market for zirconium','zirconium')

* 1646 material markets were found:

	name	material_group	location
1150	market for aluminium alloy, AlLi	aluminium	GLO
815	market for aluminium alloy, AlMg3	aluminium	GLO
419	market for aluminium alloy, metal matrix compo...	aluminium	GLO
234	market for aluminium around steel bi-metal str...	aluminium	GLO
873	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
663	market for zinc slag	zinc	GLO
626	market for zinc sulfide	zinc	GLO
262	market for zirconium oxide	zirconium	GLO
32	market for zirconium sponge, nuclear-grade	zirconium	GLO
1082	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for graphite, battery grade, classification: nan
 Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for hard coal power plant, classification: nan
 Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium hydroxide, battery grade, classification: nan
 Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for lithium carbonate, battery grade, classification: nan
 Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2030/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2030 ***

*** Loading pickle to dataframe ***

There were 48964 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2030

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2030/material_exchanges.csv

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1204 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4021 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

** Pre-processing database (5/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2035**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2035

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2035, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 83 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2035> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion | kilogram | 4

WasteFootprint_composting | kilogram | 14

WasteFootprint_open burning | kilogram | 535

WasteFootprint_incineration | kilogram | 2637

WasteFootprint_recycling | kilogram | 84

WasteFootprint_landfill | kilogram | 1712

WasteFootprint_hazardous | kilogram | 1878

** No results for WasteFootprint_radioactive-kilogram

WasteFootprint_carbon dioxide | kilogram | 1135

WasteFootprint_total | kilogram | 30759

WasteFootprint_digestion | cubic meter | 6

** No results for WasteFootprint_composting-cubic meter

** No results for WasteFootprint_open burning-cubic meter

WasteFootprint_incineration | cubic meter | 2

** No results for WasteFootprint_recycling-cubic meter

WasteFootprint_landfill | cubic meter | 2

WasteFootprint_hazardous | cubic meter | 308

WasteFootprint_radioactive | cubic meter | 308

** No results for WasteFootprint_carbon dioxide-cubic meter

WasteFootprint_total | cubic meter | 4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2035

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')

('market for antimony', 'antimony')

('market for bauxite', 'bauxite')

('market for beryllium', 'beryllium')

('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
1083	market for aluminium alloy, AlLi	aluminium	GLO
876	market for aluminium alloy, AlMg3	aluminium	GLO
726	market for aluminium alloy, metal matrix compo...	aluminium	GLO
170	market for aluminium around steel bi-metal str...	aluminium	GLO
795	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
187	market for zinc slag	zinc	GLO
1049	market for zinc sulfide	zinc	GLO
194	market for zirconium oxide	zirconium	GLO
550	market for zirconium sponge, nuclear-grade	zirconium	GLO
533	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2035/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2035 ***

*** Loading pickle to dataframe ***

There were 49062 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2035

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2035/material_exchanges.cs

*** Grouping material exchanges by material group

2101 : aluminium

27 : antimony

28 : bauxite

1 : beryllium

15 : borates

17 : cadmium

1555 : cement

3 : cerium

473 : chromium

1738 : coal(black)

589 : coal(brown)

166 : cobalt

110 : coke

1244 : copper

1 : dysprosium

19360 : electricity

1 : erbium

1 : europium

29 : fluorspar

1 : gadolinium

4 : gallium

11 : gold

33 : graphite

46 : helium

1 : holmium

1302 : hydrogen

13 : indium

50 : latex

260 : lead

52 : lithium

312 : magnesium

4021 : natural gas

436 : nickel

35 : palladium

508 : petroleum

207 : phosphate rock

171 : platinum

37 : rare earth

11 : rhodium

611 : sand

1 : scandium

9 : selenium

375 : silicon

50 : silver
 28 : strontium
 3 : tantalum
 2 : tellurium
 124 : tin
 457 : titanium
 5 : tungsten
 140 : uranium
 37 : vegetable oil
 11569 : water
 670 : zinc
 11 : zirconium

 ** Pre-processing database (6/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2040**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2040

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2040, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 83 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2040> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878

** No results for WasteFootprint_radioactive-kilogram

WasteFootprint_carbon dioxide	kilogram	1135
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WasteFootprint_total	kilogram	30759
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WasteFootprint_digestion	cubic meter	6
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** No results for WasteFootprint_composting-cubic meter

** No results for WasteFootprint_open burning-cubic meter

WasteFootprint_incineration	cubic meter	2
-----------------------------	-------------	---

** No results for WasteFootprint_recycling-cubic meter

WasteFootprint_landfill	cubic meter	2
-------------------------	-------------	---

WasteFootprint_hazardous	cubic meter	308
--------------------------	-------------	-----

WasteFootprint_radioactive	cubic meter	308
----------------------------	-------------	-----

** No results for WasteFootprint_carbon dioxide-cubic meter

WasteFootprint_total	cubic meter	4695
----------------------	-------------	------

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2040

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
508	market for aluminium alloy, ALi	aluminium	GLO
830	market for aluminium alloy, AlMg3	aluminium	GLO
1476	market for aluminium alloy, metal matrix compo...	aluminium	GLO
819	market for aluminium around steel bi-metal str...	aluminium	GLO
1464	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1042	market for zinc slag	zinc	GLO
38	market for zinc sulfide	zinc	GLO
1167	market for zirconium oxide	zirconium	GLO
607	market for zirconium sponge, nuclear-grade	zirconium	GLO
1189	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2040/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2040 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2040

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2040/material_exchanges.cs

*** Grouping material exchanges by material group

2101 : aluminium
 27 : antimony
 28 : bauxite
 1 : beryllium
 15 : borates
 17 : cadmium
 1555 : cement
 3 : cerium
 473 : chromium
 1738 : coal(black)
 589 : coal(brown)
 166 : cobalt
 110 : coke
 1244 : copper
 1 : dysprosium
 19360 : electricity
 1 : erbium
 1 : europium
 29 : fluorspar
 1 : gadolinium
 4 : gallium
 11 : gold
 33 : graphite
 46 : helium
 1 : holmium
 1372 : hydrogen
 13 : indium
 50 : latex
 260 : lead

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2045

100%|

38/192

```

WasteFootprint_hazardous | kilogram | 1878
** No results for WasteFootprint_radioactive-kilogram
WasteFootprint_carbon dioxide | kilogram | 1135
WasteFootprint_total | kilogram | 30759
WasteFootprint_digestion | cubic meter | 6
** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 308
WasteFootprint_radioactive | cubic meter | 308
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 4695
*** Finished searching for waste exchanges ***

```

```

*** Starting SearchMaterial ***

```

```

*** Loading pickle to dataframe ***

```

```

*** Loading activities

```

```

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2045

```

```

in project: TreX-premise-SSP2-cutoff

```

```

** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')

```

```
(market for sodium borates', 'borates')
(market for strontium', 'strontium')
(market for tantalum', 'tantalum')
(market for tellurium', 'tellurium')
(market for tin', 'tin')
(market for titanium', 'titanium')
(market for uranium', 'uranium')
(market for tungsten', 'tungsten')
(market for vanadium', 'vanadium')
(market for vegetable oil', 'vegetable oil')
(market for tap water', 'water')
(market for water', 'water')
(market for zinc', 'zinc')
(market for zirconium', 'zirconium')
```

* 1646 material markets were found:

	name	material_group	location
380	market for aluminium alloy, ALi	aluminium	GLO
658	market for aluminium alloy, AlMg3	aluminium	GLO
456	market for aluminium alloy, metal matrix compo...	aluminium	GLO
870	market for aluminium around steel bi-metal str...	aluminium	GLO
394	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
787	market for zinc slag	zinc	GLO
864	market for zinc sulfide	zinc	GLO
1199	market for zirconium oxide	zirconium	GLO
453	market for zirconium sponge, nuclear-grade	zirconium	GLO
391	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2045/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2045 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2045

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2045/material_exchanges.cs

*** Grouping material exchanges by material group

```
2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
```


19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

** Pre-processing database (8/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2050**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====
Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2050
=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2050, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2050> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1135
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2050

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

(market for aluminium', 'aluminium')

(market for antimony', 'antimony')

(market for bauxite', 'bauxite')

(market for beryllium', 'beryllium')

(market for bismuth', 'bismuth')

(market for cadmium', 'cadmium')

(market for calcium borates', 'borates')

(market for cement', 'cement')

(market for cerium', 'cerium')

(market for chromium', 'chromium')

(market for cobalt', 'cobalt')

(market for coke', 'coke')

(market for copper', 'copper')

(market for dysprosium', 'dysprosium')

(market for erbium', 'erbium')

(market for europium', 'europium')

(market for electricity', 'electricity')

(market for ferroniobium', 'niobium')

(market for fluorspar', 'fluorspar')

(market for gadolinium', 'gadolinium')

(market for gallium', 'gallium')

(market for gold', 'gold')

(market for graphite', 'graphite')

(market for hafnium', 'hafnium')

(market for hard coal', 'coal(black)')

(market for helium', 'helium')

(market for holmium', 'holmium')

(market for hydrogen', 'hydrogen')

(market for indium', 'indium')

(market for latex', 'latex')

(market for lead', 'lead')

(market for lignite', 'coal(brown)')

(market for lithium', 'lithium')

```
22/03/2024, 11:31 T-reX_example_terminal_output.html
('market for magnesium', 'magnesium')
('market for natural gas,', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil,', 'vegetable oil')
('market for tap water', 'water')
('market for water,', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:
      name material_group location
1531 market for aluminium alloy, AlLi aluminium GLO
1072 market for aluminium alloy, AlMg3 aluminium GLO
194 market for aluminium alloy, metal matrix compo... aluminium GLO
1021 market for aluminium around steel bi-metal str... aluminium GLO
117 market for aluminium around steel bi-metal wir... aluminium GLO
...
78 market for zinc slag zinc GLO
725 market for zinc sulfide zinc GLO
951 market for zirconium oxide zirconium GLO
1269 market for zirconium sponge, nuclear-grade zirconium GLO
1606 market for zirconium tetrachloride zirconium GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Saved activities list to csv:
/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2050/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2050 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2050

Saved material exchanges to csv:
/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2050/material_exchanges.cs

*** Grouping material exchanges by material group

2101 : aluminium

file:///home/stew/code/gh/T-reX/examples/T-reX_example_terminal_output.html 43/192
```

27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

** Pre-processing database (9/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2055**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====
Starting TreX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2055
=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2055, in project: TreX-premise-SSP2-cutoff will be processed

('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen,', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas,', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil,', 'vegetable oil')
('market for tap water', 'water')
('market for water,', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

		name	material_group	location
797		market for aluminium alloy, ALi	aluminium	GLO
204		market for aluminium alloy, AlMg3	aluminium	GLO
518	market for aluminium alloy, metal matrix compo...		aluminium	GLO
281	market for aluminium around steel bi-metal str...		aluminium	GLO
633	market for aluminium around steel bi-metal wir...		aluminium	GLO
...
125		market for zinc slag	zinc	GLO
502		market for zinc sulfide	zinc	GLO
1236		market for zirconium oxide	zirconium	GLO
22	market for zirconium sponge, nuclear-grade		zirconium	GLO
489		market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for lithium carbonate, battery grade, classification: nan
 Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
 Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for hard coal power plant, classification: nan
 Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for graphite, battery grade, classification: nan
 Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2055/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2055 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2055

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2055/material_exchanges.csv

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

('market for cadmium', 'cadmium')
 ('market for calcium borates', 'borates')
 ('market for cement', 'cement')
 ('market for cerium', 'cerium')
 ('market for chromium', 'chromium')
 ('market for cobalt', 'cobalt')
 ('market for coke', 'coke')
 ('market for copper', 'copper')
 ('market for dysprosium', 'dysprosium')
 ('market for erbium', 'erbium')
 ('market for europium', 'europium')
 ('market for electricity', 'electricity')
 ('market for ferroniobium', 'niobium')
 ('market for fluorspar', 'fluorspar')
 ('market for gadolinium', 'gadolinium')
 ('market for gallium', 'gallium')
 ('market for gold', 'gold')
 ('market for graphite', 'graphite')
 ('market for hafnium', 'hafnium')
 ('market for hard coal', 'coal(black)')
 ('market for helium', 'helium')
 ('market for holmium', 'holmium')
 ('market for hydrogen', 'hydrogen')
 ('market for indium', 'indium')
 ('market for latex', 'latex')
 ('market for lead', 'lead')
 ('market for lignite', 'coal(brown)')
 ('market for lithium', 'lithium')
 ('market for magnesium', 'magnesium')
 ('market for natural gas', 'natural gas')
 ('market for nickel', 'nickel')
 ('market for palladium', 'palladium')
 ('market for petroleum', 'petroleum')
 ('market for phosphate', 'phosphate rock')
 ('market for platinum', 'platinum')
 ('market for rare earth', 'rare earth')
 ('market for rhodium', 'rhodium')
 ('market for sand', 'sand')
 ('market for selenium', 'selenium')
 ('market for scandium', 'scandium')
 ('market for silicon', 'silicon')
 ('market for silver', 'silver')
 ('market for sodium borates', 'borates')
 ('market for strontium', 'strontium')
 ('market for tantalum', 'tantalum')
 ('market for tellurium', 'tellurium')
 ('market for tin', 'tin')
 ('market for titanium', 'titanium')
 ('market for uranium', 'uranium')
 ('market for tungsten', 'tungsten')
 ('market for vanadium', 'vanadium')
 ('market for vegetable oil', 'vegetable oil')
 ('market for tap water', 'water')
 ('market for water', 'water')
 ('market for zinc', 'zinc')
 ('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
698	market for aluminium alloy, AlLi	aluminium	GLO
1313	market for aluminium alloy, AlMg3	aluminium	GLO
579	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1619	market for aluminium around steel bi-metal str...	aluminium	GLO
362	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
152	market for zinc slag	zinc	GLO
257	market for zinc sulfide	zinc	GLO
1389	market for zirconium oxide	zirconium	GLO
471	market for zirconium sponge, nuclear-grade	zirconium	GLO
1118	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2060/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2060 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2060

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2060/material_exchanges.csv

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver

28 : strontium
 3 : tantalum
 2 : tellurium
 124 : tin
 457 : titanium
 5 : tungsten
 140 : uranium
 37 : vegetable oil
 11569 : water
 670 : zinc
 11 : zirconium

** Pre-processing database (11/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2065**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2065

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2065, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2065> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1135
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2065

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
2	market for aluminium alloy, ALi	aluminium	GLO
961	market for aluminium alloy, AlMg3	aluminium	GLO
568	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1389	market for aluminium around steel bi-metal str...	aluminium	GLO
1208	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
823	market for zinc slag	zinc	GLO
519	market for zinc sulfide	zinc	GLO
542	market for zirconium oxide	zirconium	GLO
144	market for zirconium sponge, nuclear-grade	zirconium	GLO
152	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2065/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2065 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2065

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2065/material_exchanges.cs

*** Grouping material exchanges by material group

2101 : aluminium
 27 : antimony
 28 : bauxite
 1 : beryllium
 15 : borates
 17 : cadmium
 1555 : cement
 3 : cerium
 473 : chromium
 1738 : coal(black)
 589 : coal(brown)
 166 : cobalt
 110 : coke
 1244 : copper
 1 : dysprosium
 19360 : electricity
 1 : erbium
 1 : europium
 29 : fluorspar
 1 : gadolinium
 4 : gallium
 11 : gold
 33 : graphite
 46 : helium
 1 : holmium
 1372 : hydrogen
 13 : indium
 50 : latex
 260 : lead
 52 : lithium


```

** No results for WasteFootprint_radioactive-kilogram
WasteFootprint_carbon dioxide | kilogram | 1135
WasteFootprint_total | kilogram | 30759
WasteFootprint_digestion | cubic meter | 6
** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 308
WasteFootprint_radioactive | cubic meter | 308
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 4695
*** Finished searching for waste exchanges ***

```

```

*** Starting SearchMaterial ***

```

```

*** Loading pickle to dataframe ***

```

```

*** Loading activities

```

```

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2070
in project: TreX-premise-SSP2-cutoff

```

```

** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')

```

```
(market for strontium', 'strontium')
(market for tantalum', 'tantalum')
(market for tellurium', 'tellurium')
(market for tin', 'tin')
(market for titanium', 'titanium')
(market for uranium', 'uranium')
(market for tungsten', 'tungsten')
(market for vanadium', 'vanadium')
(market for vegetable oil', 'vegetable oil')
(market for tap water', 'water')
(market for water', 'water')
(market for zinc', 'zinc')
(market for zirconium', 'zirconium')
```

* 1646 material markets were found:

	name	material_group	location
624	market for aluminium alloy, AlLi	aluminium	GLO
1113	market for aluminium alloy, AlMg3	aluminium	GLO
349	market for aluminium alloy, metal matrix compo...	aluminium	GLO
148	market for aluminium around steel bi-metal str...	aluminium	GLO
630	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1313	market for zinc slag	zinc	GLO
134	market for zinc sulfide	zinc	GLO
370	market for zirconium oxide	zirconium	GLO
845	market for zirconium sponge, nuclear-grade	zirconium	GLO
1291	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2070/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2070 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2070

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2070/material_exchanges.cs

*** Grouping material exchanges by material group

```
2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
```


1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

** Pre-processing database (13/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2075**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====
Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2075
=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2075, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2075> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1135
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2075

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
 ('market for antimony', 'antimony')
 ('market for bauxite', 'bauxite')
 ('market for beryllium', 'beryllium')
 ('market for bismuth', 'bismuth')
 ('market for cadmium', 'cadmium')
 ('market for calcium borates', 'borates')
 ('market for cement', 'cement')
 ('market for cerium', 'cerium')
 ('market for chromium', 'chromium')
 ('market for cobalt', 'cobalt')
 ('market for coke', 'coke')
 ('market for copper', 'copper')
 ('market for dysprosium', 'dysprosium')
 ('market for erbium', 'erbium')
 ('market for europium', 'europium')
 ('market for electricity', 'electricity')
 ('market for ferroniobium', 'niobium')
 ('market for fluorspar', 'fluorspar')
 ('market for gadolinium', 'gadolinium')
 ('market for gallium', 'gallium')
 ('market for gold', 'gold')
 ('market for graphite', 'graphite')
 ('market for hafnium', 'hafnium')
 ('market for hard coal', 'coal(black)')
 ('market for helium', 'helium')
 ('market for holmium', 'holmium')
 ('market for hydrogen', 'hydrogen')
 ('market for indium', 'indium')
 ('market for latex', 'latex')
 ('market for lead', 'lead')
 ('market for lignite', 'coal(brown)')
 ('market for lithium', 'lithium')
 ('market for magnesium', 'magnesium')

```
('market for natural gas,', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil,', 'vegetable oil')
('market for tap water', 'water')
('market for water,', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')
```

* 1646 material markets were found:

	name	material_group	location
118	market for aluminium alloy, AlLi	aluminium	GLO
722	market for aluminium alloy, AlMg3	aluminium	GLO
895	market for aluminium alloy, metal matrix compo...	aluminium	GLO
674	market for aluminium around steel bi-metal str...	aluminium	GLO
93	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
185	market for zinc slag	zinc	GLO
1283	market for zinc sulfide	zinc	GLO
887	market for zirconium oxide	zirconium	GLO
693	market for zirconium sponge, nuclear-grade	zirconium	GLO
395	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2075/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2075 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2075

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2075/material_exchanges.cs

*** Grouping material exchanges by material group

```
2101 : aluminium
27 : antimony
```

28 : bauxite
 1 : beryllium
 15 : borates
 17 : cadmium
 1555 : cement
 3 : cerium
 473 : chromium
 1738 : coal(black)
 589 : coal(brown)
 166 : cobalt
 110 : coke
 1244 : copper
 1 : dysprosium
 19360 : electricity
 1 : erbium
 1 : europium
 29 : fluorspar
 1 : gadolinium
 4 : gallium
 11 : gold
 33 : graphite
 46 : helium
 1 : holmium
 1372 : hydrogen
 13 : indium
 50 : latex
 260 : lead
 52 : lithium
 312 : magnesium
 4035 : natural gas
 436 : nickel
 35 : palladium
 508 : petroleum
 207 : phosphate rock
 171 : platinum
 37 : rare earth
 11 : rhodium
 611 : sand
 1 : scandium
 9 : selenium
 375 : silicon
 50 : silver
 28 : strontium
 3 : tantalum
 2 : tellurium
 124 : tin
 457 : titanium
 5 : tungsten
 140 : uranium
 37 : vegetable oil
 11569 : water
 670 : zinc
 11 : zirconium

**** Pre-processing database (14/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2080****

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2080

=====

***** Starting ExplodeDatabase *****

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

**** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2080, in project: TreX-premise-SSP2-cutoff will be processed**

('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
99	market for aluminium alloy, AlLi	aluminium	GLO
1037	market for aluminium alloy, AlMg3	aluminium	GLO
259	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1539	market for aluminium around steel bi-metal str...	aluminium	GLO
1577	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
757	market for zinc slag	zinc	GLO
573	market for zinc sulfide	zinc	GLO
813	market for zirconium oxide	zirconium	GLO
601	market for zirconium sponge, nuclear-grade	zirconium	GLO
919	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for hard coal power plant, classification: nan
 Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium carbonate, battery grade, classification: nan
 Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
 Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
 Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Saved activities list to csv:
/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2080/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2080 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2080

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2080/material_exchanges.csv

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

** Pre-processing database (15/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2085**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2085

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2085, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%

Adding exchange data to activities

100%

Filling out exchange data

100%

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2085> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1135
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2085

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
 ('market for antimony', 'antimony')
 ('market for bauxite', 'bauxite')
 ('market for beryllium', 'beryllium')
 ('market for bismuth', 'bismuth')
 ('market for cadmium', 'cadmium')

('market for calcium borates', 'borates')
 ('market for cement', 'cement')
 ('market for cerium', 'cerium')
 ('market for chromium', 'chromium')
 ('market for cobalt', 'cobalt')
 ('market for coke', 'coke')
 ('market for copper', 'copper')
 ('market for dysprosium', 'dysprosium')
 ('market for erbium', 'erbium')
 ('market for europium', 'europium')
 ('market for electricity', 'electricity')
 ('market for ferroniobium', 'niobium')
 ('market for fluorspar', 'fluorspar')
 ('market for gadolinium', 'gadolinium')
 ('market for gallium', 'gallium')
 ('market for gold', 'gold')
 ('market for graphite', 'graphite')
 ('market for hafnium', 'hafnium')
 ('market for hard coal', 'coal(black)')
 ('market for helium', 'helium')
 ('market for holmium', 'holmium')
 ('market for hydrogen', 'hydrogen')
 ('market for indium', 'indium')
 ('market for latex', 'latex')
 ('market for lead', 'lead')
 ('market for lignite', 'coal(brown)')
 ('market for lithium', 'lithium')
 ('market for magnesium', 'magnesium')
 ('market for natural gas', 'natural gas')
 ('market for nickel', 'nickel')
 ('market for palladium', 'palladium')
 ('market for petroleum', 'petroleum')
 ('market for phosphate', 'phosphate rock')
 ('market for platinum', 'platinum')
 ('market for rare earth', 'rare earth')
 ('market for rhodium', 'rhodium')
 ('market for sand', 'sand')
 ('market for selenium', 'selenium')
 ('market for scandium', 'scandium')
 ('market for silicon', 'silicon')
 ('market for silver', 'silver')
 ('market for sodium borates', 'borates')
 ('market for strontium', 'strontium')
 ('market for tantalum', 'tantalum')
 ('market for tellurium', 'tellurium')
 ('market for tin', 'tin')
 ('market for titanium', 'titanium')
 ('market for uranium', 'uranium')
 ('market for tungsten', 'tungsten')
 ('market for vanadium', 'vanadium')
 ('market for vegetable oil', 'vegetable oil')
 ('market for tap water', 'water')
 ('market for water', 'water')
 ('market for zinc', 'zinc')
 ('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
476	market for aluminium alloy, AlLi	aluminium	GLO
343	market for aluminium alloy, AlMg3	aluminium	GLO
447	market for aluminium alloy, metal matrix compo...	aluminium	GLO
487	market for aluminium around steel bi-metal str...	aluminium	GLO
1437	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
212	market for zinc slag	zinc	GLO
839	market for zinc sulfide	zinc	GLO
1271	market for zirconium oxide	zirconium	GLO
1235	market for zirconium sponge, nuclear-grade	zirconium	GLO
1523	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2085/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2085 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2085

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2085/material_exchanges.csv

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium

3 : tantalum
 2 : tellurium
 124 : tin
 457 : titanium
 5 : tungsten
 140 : uranium
 37 : vegetable oil
 11569 : water
 670 : zinc
 11 : zirconium

 ** Pre-processing database (16/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2090**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2090

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2090, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2090> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1135
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2090

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
1096	market for aluminium alloy, AlLi	aluminium	GLO
1135	market for aluminium alloy, AlMg3	aluminium	GLO
715	market for aluminium alloy, metal matrix compo...	aluminium	GLO
170	market for aluminium around steel bi-metal str...	aluminium	GLO
186	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
284	market for zinc slag	zinc	GLO
518	market for zinc sulfide	zinc	GLO
605	market for zirconium oxide	zirconium	GLO
722	market for zirconium sponge, nuclear-grade	zirconium	GLO
1050	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2090/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2090 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2090

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2090/material_exchanges.cs

*** Grouping material exchanges by material group

2101 : aluminium
 27 : antimony
 28 : bauxite
 1 : beryllium
 15 : borates
 17 : cadmium
 1555 : cement
 3 : cerium
 473 : chromium
 1738 : coal(black)
 589 : coal(brown)
 166 : cobalt
 110 : coke
 1244 : copper
 1 : dysprosium
 19360 : electricity
 1 : erbium
 1 : europium
 29 : fluorspar
 1 : gadolinium
 4 : gallium
 11 : gold
 33 : graphite
 46 : helium
 1 : holmium
 1372 : hydrogen
 13 : indium
 50 : latex
 260 : lead
 52 : lithium
 312 : magnesium

4035 : natural gas
 436 : nickel
 35 : palladium
 508 : petroleum
 207 : phosphate rock
 171 : platinum
 37 : rare earth
 11 : rhodium
 611 : sand
 1 : scandium
 9 : selenium
 375 : silicon
 50 : silver
 28 : strontium
 3 : tantalum
 2 : tellurium
 124 : tin
 457 : titanium
 5 : tungsten
 140 : uranium
 37 : vegetable oil
 11569 : water
 670 : zinc
 11 : zirconium

** Pre-processing database (17/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2095**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2095

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-Base_2095, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2095> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878

** No results for WasteFootprint_radioactive-kilogram

```
WasteFootprint_carbon dioxide | kilogram | 1135
WasteFootprint_total | kilogram | 30759
WasteFootprint_digestion | cubic meter | 6
** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 308
WasteFootprint_radioactive | cubic meter | 308
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 4695
*** Finished searching for waste exchanges ***
```

```
*** Starting SearchMaterial ***
```

```
*** Loading pickle to dataframe ***
```

```
*** Loading activities
```

```
from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2095
```

```
in project: TreX-premise-SSP2-cutoff
```

```
** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
```

```

('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

```

* 1646 material markets were found:

	name	material_group	location
1032	market for aluminium alloy, AlLi	aluminium	GLO
974	market for aluminium alloy, AlMg3	aluminium	GLO
1149	market for aluminium alloy, metal matrix compo...	aluminium	GLO
824	market for aluminium around steel bi-metal str...	aluminium	GLO
645	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1453	market for zinc slag	zinc	GLO
141	market for zinc sulfide	zinc	GLO
52	market for zirconium oxide	zirconium	GLO
1243	market for zirconium sponge, nuclear-grade	zirconium	GLO
1406	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```

Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2095/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2095 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2095

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2095/material_exchanges.cs

*** Grouping material exchanges by material group

```

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium

```


1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

**** Pre-processing database (18/35): ecoinvent cutoff 3.9 remind SSP2-Base 2100****

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff 3.9 remind_S
```

Starting T-reX for ecoinvent_cutoff 3.9 remind SSP2-Base 2100

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent cutoff 3.9 remind SSP2-Base 2100, in project: TreX-premise-SSP2-cutoff will be processed

**** Opening the sausage...**

Getting activity data

100%

Adding exchange data to activities

100%

Filling out exchange data

100%

```
*** Extracting activities from db...
```

*** Exploding exchanges from activities...

```
*** Pickling...
```

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-Base_2100> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1135
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2100

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
 ('market for antimony', 'antimony')
 ('market for bauxite', 'bauxite')
 ('market for beryllium', 'beryllium')
 ('market for bismuth', 'bismuth')
 ('market for cadmium', 'cadmium')
 ('market for calcium borates', 'borates')
 ('market for cement', 'cement')
 ('market for cerium', 'cerium')
 ('market for chromium', 'chromium')
 ('market for cobalt', 'cobalt')
 ('market for coke', 'coke')
 ('market for copper', 'copper')
 ('market for dysprosium', 'dysprosium')
 ('market for erbium', 'erbium')
 ('market for europium', 'europium')
 ('market for electricity', 'electricity')
 ('market for ferroniobium', 'niobium')
 ('market for fluorspar', 'fluorspar')
 ('market for gadolinium', 'gadolinium')
 ('market for gallium', 'gallium')
 ('market for gold', 'gold')
 ('market for graphite', 'graphite')
 ('market for hafnium', 'hafnium')
 ('market for hard coal', 'coal(black)')
 ('market for helium', 'helium')
 ('market for holmium', 'holmium')
 ('market for hydrogen', 'hydrogen')
 ('market for indium', 'indium')
 ('market for latex', 'latex')
 ('market for lead', 'lead')
 ('market for lignite', 'coal(brown)')
 ('market for lithium', 'lithium')
 ('market for magnesium', 'magnesium')
 ('market for natural gas', 'natural gas')

```

('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

```

* 1646 material markets were found:

	name	material_group	location
1129	market for aluminium alloy, AlLi	aluminium	GLO
54	market for aluminium alloy, AlMg3	aluminium	GLO
561	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1316	market for aluminium around steel bi-metal str...	aluminium	GLO
1089	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
790	market for zinc slag	zinc	GLO
1424	market for zinc sulfide	zinc	GLO
579	market for zirconium oxide	zirconium	GLO
99	market for zirconium sponge, nuclear-grade	zirconium	GLO
146	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```

Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2100/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-Base_2100 ***

*** Loading pickle to dataframe ***

There were 49146 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-Base_2100

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-Base_2100/material_exchanges.cs

*** Grouping material exchanges by material group

```

2101 : aluminium
27 : antimony
28 : bauxite

```

1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

** Pre-processing database (19/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====
Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020
=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

100%|

Pickle is: 80 MB

('market for gallium', 'gallium')

('market for gold', 'gold')
 ('market for graphite', 'graphite')
 ('market for hafnium', 'hafnium')
 ('market for hard coal', 'coal(black)')
 ('market for helium', 'helium')
 ('market for holmium', 'holmium')
 ('market for hydrogen', 'hydrogen')
 ('market for indium', 'indium')
 ('market for latex', 'latex')
 ('market for lead', 'lead')
 ('market for lignite', 'coal(brown)')
 ('market for lithium', 'lithium')
 ('market for magnesium', 'magnesium')
 ('market for natural gas', 'natural gas')
 ('market for nickel', 'nickel')
 ('market for palladium', 'palladium')
 ('market for petroleum', 'petroleum')
 ('market for phosphate', 'phosphate rock')
 ('market for platinum', 'platinum')
 ('market for rare earth', 'rare earth')
 ('market for rhodium', 'rhodium')
 ('market for sand', 'sand')
 ('market for selenium', 'selenium')
 ('market for scandium', 'scandium')
 ('market for silicon', 'silicon')
 ('market for silver', 'silver')
 ('market for sodium borates', 'borates')
 ('market for strontium', 'strontium')
 ('market for tantalum', 'tantalum')
 ('market for tellurium', 'tellurium')
 ('market for tin', 'tin')
 ('market for titanium', 'titanium')
 ('market for uranium', 'uranium')
 ('market for tungsten', 'tungsten')
 ('market for vanadium', 'vanadium')
 ('market for vegetable oil', 'vegetable oil')
 ('market for tap water', 'water')
 ('market for water', 'water')
 ('market for zinc', 'zinc')
 ('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
939	market for aluminium alloy, AlLi	aluminium	GLO
336	market for aluminium alloy, AlMg3	aluminium	GLO
13	market for aluminium alloy, metal matrix compo...	aluminium	GLO
869	market for aluminium around steel bi-metal str...	aluminium	GLO
617	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
553	market for zinc slag	zinc	GLO
455	market for zinc sulfide	zinc	GLO
1155	market for zirconium oxide	zirconium	GLO
606	market for zirconium sponge, nuclear-grade	zirconium	GLO
470	market for zirconium tetrachloride	zirconium	GLO

```
[1646 rows x 3 columns]
```

* Extracting classifications...

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent cutoff 3.9 remind SSP2-PkBudg500 2020/material activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020 ***

*** Loading pickle to dataframe ***

There were 48530 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020/material_exchan

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
686 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4105 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11569 : water
670 : zinc
11 : zirconium

** Pre-processing database (20/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%

Adding exchange data to activities

100%

Filling out exchange data

100%

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 83 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1181
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
 ('market for antimony', 'antimony')
 ('market for bauxite', 'bauxite')
 ('market for beryllium', 'beryllium')
 ('market for bismuth', 'bismuth')
 ('market for cadmium', 'cadmium')
 ('market for calcium borates', 'borates')

('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity,', 'electricity')
('market for ferroniobium,', 'niobium')
('market for fluorspar,', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen,', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas,', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil,', 'vegetable oil')
('market for tap water', 'water')
('market for water,', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
461	market for aluminium alloy, AlLi	aluminium	GLO
5	market for aluminium alloy, AlMg3	aluminium	GLO
1593	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1598	market for aluminium around steel bi-metal str...	aluminium	GLO
1431	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
123	market for zinc slag	zinc	GLO
494	market for zinc sulfide	zinc	GLO
116	market for zirconium oxide	zirconium	GLO
454	market for zirconium sponge, nuclear-grade	zirconium	GLO
437	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025 ***

*** Loading pickle to dataframe ***

There were 48738 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025/material_exchan

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
952 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
 ('market for antimony', 'antimony')
 ('market for bauxite', 'bauxite')
 ('market for beryllium', 'beryllium')
 ('market for bismuth', 'bismuth')
 ('market for cadmium', 'cadmium')
 ('market for calcium borates', 'borates')
 ('market for cement', 'cement')
 ('market for cerium', 'cerium')
 ('market for chromium', 'chromium')
 ('market for cobalt', 'cobalt')
 ('market for coke', 'coke')
 ('market for copper', 'copper')
 ('market for dysprosium', 'dysprosium')
 ('market for erbium', 'erbium')
 ('market for europium', 'europium')
 ('market for electricity', 'electricity')
 ('market for ferroniobium', 'niobium')
 ('market for fluorspar', 'fluorspar')
 ('market for gadolinium', 'gadolinium')
 ('market for gallium', 'gallium')
 ('market for gold', 'gold')
 ('market for graphite', 'graphite')
 ('market for hafnium', 'hafnium')
 ('market for hard coal', 'coal(black)')
 ('market for helium', 'helium')
 ('market for holmium', 'holmium')
 ('market for hydrogen', 'hydrogen')
 ('market for indium', 'indium')
 ('market for latex', 'latex')
 ('market for lead', 'lead')
 ('market for lignite', 'coal(brown)')
 ('market for lithium', 'lithium')
 ('market for magnesium', 'magnesium')
 ('market for natural gas', 'natural gas')
 ('market for nickel', 'nickel')
 ('market for palladium', 'palladium')
 ('market for petroleum', 'petroleum')
 ('market for phosphate', 'phosphate rock')
 ('market for platinum', 'platinum')
 ('market for rare earth', 'rare earth')
 ('market for rhodium', 'rhodium')
 ('market for sand', 'sand')
 ('market for selenium', 'selenium')
 ('market for scandium', 'scandium')
 ('market for silicon', 'silicon')
 ('market for silver', 'silver')
 ('market for sodium borates', 'borates')
 ('market for strontium', 'strontium')
 ('market for tantalum', 'tantalum')
 ('market for tellurium', 'tellurium')
 ('market for tin', 'tin')
 ('market for titanium', 'titanium')
 ('market for uranium', 'uranium')
 ('market for tungsten', 'tungsten')
 ('market for vanadium', 'vanadium')
 ('market for vegetable oil', 'vegetable oil')
 ('market for tap water', 'water')
 ('market for water', 'water')
 ('market for zinc', 'zinc')
 ('market for zirconium', 'zirconium')

* 1646 material markets were found:

name material_group location

```

435      market for aluminium alloy, ALi      aluminium      GLO
1619      market for aluminium alloy, AlMg3    aluminium      GLO
1121 market for aluminium alloy, metal matrix compo... aluminium      GLO
573  market for aluminium around steel bi-metal str... aluminium      GLO
1433 market for aluminium around steel bi-metal wir... aluminium      GLO
...
65      market for zinc slag      zinc      GLO
569      market for zinc sulfide      zinc      GLO
689      market for zirconium oxide      zirconium      GLO
1269      market for zirconium sponge, nuclear-grade      zirconium      GLO
1012      market for zirconium tetrachloride      zirconium      GLO

```

[1646 rows x 3 columns]

* Extracting classifications...

```

Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal pulverised power plant 500MW"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030 ***

*** Loading pickle to dataframe ***

There were 48992 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030/material_exchanges.csv

*** Grouping material exchanges by material group

```

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1204 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4021 : natural gas

```

436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11597 : water
670 : zinc
11 : zirconium

** Pre-processing database (22/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 83 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1268

```
WasteFootprint_total | kilogram | 30759
WasteFootprint_digestion | cubic meter | 6
** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 308
WasteFootprint_radioactive | cubic meter | 308
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 4695
*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***
*** Loading pickle to dataframe ***

*** Loading activities
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035
in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
```

```
(market for tellurium', 'tellurium')
(market for tin', 'tin')
(market for titanium', 'titanium')
(market for uranium', 'uranium')
(market for tungsten', 'tungsten')
(market for vanadium', 'vanadium')
(market for vegetable oil', 'vegetable oil')
(market for tap water', 'water')
(market for water', 'water')
(market for zinc', 'zinc')
(market for zirconium', 'zirconium')
```

* 1646 material markets were found:

	name	material_group	location
491	market for aluminium alloy, ALi	aluminium	GLO
619	market for aluminium alloy, AlMg3	aluminium	GLO
647	market for aluminium alloy, metal matrix compo...	aluminium	GLO
114	market for aluminium around steel bi-metal str...	aluminium	GLO
160	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
117	market for zinc slag	zinc	GLO
1185	market for zinc sulfide	zinc	GLO
1512	market for zirconium oxide	zirconium	GLO
119	market for zirconium sponge, nuclear-grade	zirconium	GLO
407	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035 ***

*** Loading pickle to dataframe ***

There were 49102 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035/material_exchan

*** Grouping material exchanges by material group

```
2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
```


29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1302 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4021 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11609 : water
670 : zinc
11 : zirconium

**** Pre-processing database (23/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040****

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent cutoff 3.9 remind_S
```

Starting T-reX for ecoinvent_cutoff 3.9 remind SSP2-PkBudg500 2040

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file '

** db: ecoinvent cutoff 3.9 remind SSP2-PkBudg500 2040, in project: TreX-premise-SSP2-cutoff will be processed

**** Opening the sausage...**

Getting activity data

100%

Adding exchange data to activities

100%

Filling out exchange data

100%

```
*** Extracting activities from db...
```

*** Exploding exchanges from activities...

```
*** Pickling...
```

Pickle is: 83 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1274
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040

in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
 ('market for antimony', 'antimony')
 ('market for bauxite', 'bauxite')
 ('market for beryllium', 'beryllium')
 ('market for bismuth', 'bismuth')
 ('market for cadmium', 'cadmium')
 ('market for calcium borates', 'borates')
 ('market for cement', 'cement')
 ('market for cerium', 'cerium')
 ('market for chromium', 'chromium')
 ('market for cobalt', 'cobalt')
 ('market for coke', 'coke')
 ('market for copper', 'copper')
 ('market for dysprosium', 'dysprosium')
 ('market for erbium', 'erbium')
 ('market for europium', 'europium')
 ('market for electricity', 'electricity')
 ('market for ferroniobium', 'niobium')
 ('market for fluorspar', 'fluorspar')
 ('market for gadolinium', 'gadolinium')
 ('market for gallium', 'gallium')
 ('market for gold', 'gold')
 ('market for graphite', 'graphite')
 ('market for hafnium', 'hafnium')
 ('market for hard coal', 'coal(black)')
 ('market for helium', 'helium')
 ('market for holmium', 'holmium')
 ('market for hydrogen', 'hydrogen')
 ('market for indium', 'indium')
 ('market for latex', 'latex')
 ('market for lead', 'lead')
 ('market for lignite', 'coal(brown)')
 ('market for lithium', 'lithium')
 ('market for magnesium', 'magnesium')
 ('market for natural gas', 'natural gas')
 ('market for nickel', 'nickel')

```
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')
```

* 1646 material markets were found:

	name	material_group	location
65	market for aluminium alloy, AlLi	aluminium	GLO
1134	market for aluminium alloy, AlMg3	aluminium	GLO
242	market for aluminium alloy, metal matrix compo...	aluminium	GLO
639	market for aluminium around steel bi-metal str...	aluminium	GLO
843	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1390	market for zinc slag	zinc	GLO
85	market for zinc sulfide	zinc	GLO
1340	market for zirconium oxide	zirconium	GLO
1048	market for zirconium sponge, nuclear-grade	zirconium	GLO
1089	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040 ***

*** Loading pickle to dataframe ***

There were 49188 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040/material_exchan

*** Grouping material exchanges by material group

```
2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
```

15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11611 : water
670 : zinc
11 : zirconium

** Pre-processing database (24/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====
Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045
=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

```
*** Extracting activities from db...
*** Exploding exchanges from activities...
*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045> was exploded and pickled. Rejoice!
```

```
*** Starting SearchMaterial ***
*** Loading pickle to dataframe ***

*** Loading activities
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045
in project: TreX-premise-SSP2-cutoff
```

```

** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')

```

('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen,', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas,', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil,', 'vegetable oil')
('market for tap water', 'water')
('market for water,', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
988	market for aluminium alloy, ALi	aluminium	GLO
522	market for aluminium alloy, AlMg3	aluminium	GLO
803	market for aluminium alloy, metal matrix compo...	aluminium	GLO
635	market for aluminium around steel bi-metal str...	aluminium	GLO
1269	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
764	market for zinc slag	zinc	GLO
1552	market for zinc sulfide	zinc	GLO
459	market for zirconium oxide	zirconium	GLO
155	market for zirconium sponge, nuclear-grade	zirconium	GLO
465	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for hard coal power plant, classification: nan
 Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium hydroxide, battery grade, classification: nan
 Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for lithium carbonate, battery grade, classification: nan
 Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
 Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Saved activities list to csv:
/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045 ***

*** Loading pickle to dataframe ***

There were 49188 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045/material_exchan

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11611 : water
670 : zinc
11 : zirconium

** Pre-processing database (25/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050**

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S
```

```
=====
Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050
=====
```

```
*** Starting ExplodeDatabase ***
```

```
ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file
```

```
** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050, in project: TreX-premise-SSP2-cutoff will be processed
```

```
** Opening the sausage...
```

```
Getting activity data
```

```
100%|
```

```
Adding exchange data to activities
```

```
100%|
```

```
Filling out exchange data
```

```
100%|
```

```
*** Extracting activities from db...
```

```
*** Exploding exchanges from activities...
```

```
*** Pickling...
```

```
Pickle is: 84 MB
```

```
*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050> was exploded and pickled. Rejoice!
```

```
*** Starting SearchWaste ***
```

```
*** Loading pickle to dataframe ***
```

```
*** Searching for waste exchanges ***
```

```
WasteFootprint_digestion | kilogram | 4
```

```
WasteFootprint_composting | kilogram | 14
```

```
WasteFootprint_open burning | kilogram | 535
```

```
WasteFootprint_incineration | kilogram | 2637
```

```
WasteFootprint_recycling | kilogram | 84
```

```
WasteFootprint_landfill | kilogram | 1712
```

```
WasteFootprint_hazardous | kilogram | 1878
```

```
** No results for WasteFootprint_radioactive-kilogram
```

```
WasteFootprint_carbon dioxide | kilogram | 1274
```

```
WasteFootprint_total | kilogram | 30759
```

```
WasteFootprint_digestion | cubic meter | 6
```

```
** No results for WasteFootprint_composting-cubic meter
```

```
** No results for WasteFootprint_open burning-cubic meter
```

```
WasteFootprint_incineration | cubic meter | 2
```

```
** No results for WasteFootprint_recycling-cubic meter
```

```
WasteFootprint_landfill | cubic meter | 2
```

```
WasteFootprint_hazardous | cubic meter | 308
```

```
WasteFootprint_radioactive | cubic meter | 308
```

```
** No results for WasteFootprint_carbon dioxide-cubic meter
```

```
WasteFootprint_total | cubic meter | 4695
```

```
*** Finished searching for waste exchanges ***
```

```
*** Starting SearchMaterial ***
```

```
*** Loading pickle to dataframe ***
```

```
*** Loading activities
```

```
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050
```

```
in project: TreX-premise-SSP2-cutoff
```

```
** Materials (61) | (activity, group)
```

```
('market for aluminium', 'aluminium')
```

```
('market for antimony', 'antimony')
```

```
('market for bauxite', 'bauxite')
```

```
('market for beryllium', 'beryllium')
```

```
('market for bismuth', 'bismuth')
```

```
('market for cadmium', 'cadmium')
```

```
('market for calcium borates', 'borates')
```

```
('market for cement', 'cement')
```


('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

		name	material_group	location
629		market for aluminium alloy, ALi	aluminium	GLO
1475		market for aluminium alloy, AlMg3	aluminium	GLO
1620	market for aluminium alloy, metal matrix compo...		aluminium	GLO
882	market for aluminium around steel bi-metal str...		aluminium	GLO
501	market for aluminium around steel bi-metal wir...		aluminium	GLO
...
84		market for zinc slag	zinc	GLO
54		market for zinc sulfide	zinc	GLO
438		market for zirconium oxide	zirconium	GLO
1503	market for zirconium sponge, nuclear-grade		zirconium	GLO
395	market for zirconium tetrachloride		zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050 ***

*** Loading pickle to dataframe ***

There were 49188 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050/material_exchan

*** Grouping material exchanges by material group

```
2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
```

124 : tin
 457 : titanium
 5 : tungsten
 140 : uranium
 37 : vegetable oil
 11611 : water
 670 : zinc
 11 : zirconium

 ** Pre-processing database (26/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1274
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055
in project: TreX-premise-SSP2-cutoff

- ** Materials (61) | (activity, group)
- ('market for aluminium', 'aluminium')
 - ('market for antimony', 'antimony')
 - ('market for bauxite', 'bauxite')
 - ('market for beryllium', 'beryllium')
 - ('market for bismuth', 'bismuth')
 - ('market for cadmium', 'cadmium')
 - ('market for calcium borates', 'borates')
 - ('market for cement', 'cement')
 - ('market for cerium', 'cerium')
 - ('market for chromium', 'chromium')
 - ('market for cobalt', 'cobalt')
 - ('market for coke', 'coke')
 - ('market for copper', 'copper')
 - ('market for dysprosium', 'dysprosium')
 - ('market for erbium', 'erbium')
 - ('market for europium', 'europium')
 - ('market for electricity', 'electricity')
 - ('market for ferroniobium', 'niobium')
 - ('market for fluorspar', 'fluorspar')
 - ('market for gadolinium', 'gadolinium')
 - ('market for gallium', 'gallium')
 - ('market for gold', 'gold')
 - ('market for graphite', 'graphite')
 - ('market for hafnium', 'hafnium')
 - ('market for hard coal', 'coal(black)')
 - ('market for helium', 'helium')
 - ('market for holmium', 'holmium')
 - ('market for hydrogen', 'hydrogen')
 - ('market for indium', 'indium')
 - ('market for latex', 'latex')
 - ('market for lead', 'lead')
 - ('market for lignite', 'coal(brown)')
 - ('market for lithium', 'lithium')
 - ('market for magnesium', 'magnesium')
 - ('market for natural gas', 'natural gas')
 - ('market for nickel', 'nickel')
 - ('market for palladium', 'palladium')
 - ('market for petroleum', 'petroleum')
 - ('market for phosphate', 'phosphate rock')
 - ('market for platinum', 'platinum')
 - ('market for rare earth', 'rare earth')
 - ('market for rhodium', 'rhodium')
 - ('market for sand', 'sand')
 - ('market for selenium', 'selenium')
 - ('market for scandium', 'scandium')
 - ('market for silicon', 'silicon')
 - ('market for silver', 'silver')
 - ('market for sodium borates', 'borates')
 - ('market for strontium', 'strontium')
 - ('market for tantalum', 'tantalum')
 - ('market for tellurium', 'tellurium')
 - ('market for tin', 'tin')
 - ('market for titanium', 'titanium')
 - ('market for uranium', 'uranium')
 - ('market for tungsten', 'tungsten')
 - ('market for vanadium', 'vanadium')
 - ('market for vegetable oil', 'vegetable oil')
 - ('market for tap water', 'water')
 - ('market for water', 'water')
 - ('market for zinc', 'zinc')
 - ('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
261	market for aluminium alloy, AlLi	aluminium	GLO

872	market for aluminium alloy, AlMg3	aluminium	GLO
645	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1192	market for aluminium around steel bi-metal str...	aluminium	GLO
1106	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
937	market for zinc slag	zinc	GLO
1018	market for zinc sulfide	zinc	GLO
655	market for zirconium oxide	zirconium	GLO
314	market for zirconium sponge, nuclear-grade	zirconium	GLO
227	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055 ***

*** Loading pickle to dataframe ***

There were 49188 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055/material_exchan

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1555 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel


```
WasteFootprint_digestion | cubic meter | 6
** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 308
WasteFootprint_radioactive | cubic meter | 308
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 4695
*** Finished searching for waste exchanges ***
```

```
*** Starting SearchMaterial ***
```

```
*** Loading pickle to dataframe ***
```

```
*** Loading activities
```

```
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060
```

```
in project: TreX-premise-SSP2-cutoff
```

```
** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
```

```

('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

```

* 1646 material markets were found:

	name	material_group	location
945	market for aluminium alloy, ALi	aluminium	GLO
1532	market for aluminium alloy, AlMg3	aluminium	GLO
272	market for aluminium alloy, metal matrix compo...	aluminium	GLO
121	market for aluminium around steel bi-metal str...	aluminium	GLO
713	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1511	market for zinc slag	zinc	GLO
1065	market for zinc sulfide	zinc	GLO
1430	market for zirconium oxide	zirconium	GLO
1632	market for zirconium sponge, nuclear-grade	zirconium	GLO
656	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```

Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060 ***

*** Loading pickle to dataframe ***

There were 49224 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060/material_exchan

*** Grouping material exchanges by material group

```

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1591 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar

```


1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11611 : water
670 : zinc
11 : zirconium

** Pre-processing database (28/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065**

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent cutoff 3.9 remind_S
```

Starting T-reX for ecoinvent_cutoff 3.9 remind SSP2-PkBudg500 2065

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file'

** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065, in project: TreX-premise-SSP2-cutoff will be processed

**** Opening the sausage...**

Getting activity data

100%

Adding exchange data to activities

100%

Filling out exchange data

100%

```
*** Extracting activities from db...
```

*** Exploding exchanges from activities...

```
*** Pickling...
```

Pickle is: 84 MB

*** The sausage <ecoinvent cutoff 3.9 remind SSP2-PkBudg500 2065> was exploded and pickled. Rejoice!

```

*** Starting SearchWaste ***
*** Loading pickle to dataframe ***
*** Searching for waste exchanges ***
WasteFootprint_digestion | kilogram | 4
WasteFootprint_composting | kilogram | 14
WasteFootprint_open burning | kilogram | 535
WasteFootprint_incineration | kilogram | 2637
WasteFootprint_recycling | kilogram | 84
WasteFootprint_landfill | kilogram | 1712
WasteFootprint_hazardous | kilogram | 1878
** No results for WasteFootprint_radioactive-kilogram
WasteFootprint_carbon dioxide | kilogram | 1274
WasteFootprint_total | kilogram | 30759
WasteFootprint_digestion | cubic meter | 6
** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 308
WasteFootprint_radioactive | cubic meter | 308
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 4695
*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***
*** Loading pickle to dataframe ***

*** Loading activities
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065
in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')

```

```
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')
```

* 1646 material markets were found:

	name	material_group	location
1420	market for aluminium alloy, ALi	aluminium	GLO
1354	market for aluminium alloy, AlMg3	aluminium	GLO
529	market for aluminium alloy, metal matrix compo...	aluminium	GLO
882	market for aluminium around steel bi-metal str...	aluminium	GLO
898	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1103	market for zinc slag	zinc	GLO
769	market for zinc sulfide	zinc	GLO
1255	market for zirconium oxide	zirconium	GLO
379	market for zirconium sponge, nuclear-grade	zirconium	GLO
378	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065 ***

*** Loading pickle to dataframe ***

There were 49224 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065/material_exchan

*** Grouping material exchanges by material group

```
2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
```

17 : cadmium
1591 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11611 : water
670 : zinc
11 : zirconium

** Pre-processing database (29/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====
Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070
=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%

Adding exchange data to activities

100%

Filling out exchange data

100%

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1274
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities

from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070
in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')

('market for hafnium', 'hafnium')
 ('market for hard coal', 'coal(black)')
 ('market for helium', 'helium')
 ('market for holmium', 'holmium')
 ('market for hydrogen', 'hydrogen')
 ('market for indium', 'indium')
 ('market for latex', 'latex')
 ('market for lead', 'lead')
 ('market for lignite', 'coal(brown)')
 ('market for lithium', 'lithium')
 ('market for magnesium', 'magnesium')
 ('market for natural gas', 'natural gas')
 ('market for nickel', 'nickel')
 ('market for palladium', 'palladium')
 ('market for petroleum', 'petroleum')
 ('market for phosphate', 'phosphate rock')
 ('market for platinum', 'platinum')
 ('market for rare earth', 'rare earth')
 ('market for rhodium', 'rhodium')
 ('market for sand', 'sand')
 ('market for selenium', 'selenium')
 ('market for scandium', 'scandium')
 ('market for silicon', 'silicon')
 ('market for silver', 'silver')
 ('market for sodium borates', 'borates')
 ('market for strontium', 'strontium')
 ('market for tantalum', 'tantalum')
 ('market for tellurium', 'tellurium')
 ('market for tin', 'tin')
 ('market for titanium', 'titanium')
 ('market for uranium', 'uranium')
 ('market for tungsten', 'tungsten')
 ('market for vanadium', 'vanadium')
 ('market for vegetable oil', 'vegetable oil')
 ('market for tap water', 'water')
 ('market for water', 'water')
 ('market for zinc', 'zinc')
 ('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
1000	market for aluminium alloy, AlLi	aluminium	GLO
417	market for aluminium alloy, AlMg3	aluminium	GLO
1455	market for aluminium alloy, metal matrix compo...	aluminium	GLO
655	market for aluminium around steel bi-metal str...	aluminium	GLO
239	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1411	market for zinc slag	zinc	GLO
961	market for zinc sulfide	zinc	GLO
15	market for zirconium oxide	zirconium	GLO
1260	market for zirconium sponge, nuclear-grade	zirconium	GLO
1199	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070 ***

*** Loading pickle to dataframe ***

There were 49224 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070/material_exchan

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1591 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11611 : water
670 : zinc
11 : zirconium

** Pre-processing database (30/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075**

('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
29	market for aluminium alloy, AlLi	aluminium	GLO
1489	market for aluminium alloy, AlMg3	aluminium	GLO
1366	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1044	market for aluminium around steel bi-metal str...	aluminium	GLO
296	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
622	market for zinc slag	zinc	GLO
806	market for zinc sulfide	zinc	GLO
931	market for zirconium oxide	zirconium	GLO
1407	market for zirconium sponge, nuclear-grade	zirconium	GLO
606	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal pulverised power plant 500MW"

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075/material_activities.csv

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075 ***

*** Loading pickle to dataframe ***

There were 49224 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075/material_exchanges.csv

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1591 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin

457 : titanium
 5 : tungsten
 140 : uranium
 37 : vegetable oil
 11611 : water
 670 : zinc
 11 : zirconium

 ** Pre-processing database (31/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080> was exploded and pickled. Rejoice!

*** Starting SearchWaste ***

*** Loading pickle to dataframe ***

*** Searching for waste exchanges ***

WasteFootprint_digestion	kilogram	4
WasteFootprint_composting	kilogram	14
WasteFootprint_open burning	kilogram	535
WasteFootprint_incineration	kilogram	2637
WasteFootprint_recycling	kilogram	84
WasteFootprint_landfill	kilogram	1712
WasteFootprint_hazardous	kilogram	1878
** No results for WasteFootprint_radioactive-kilogram		
WasteFootprint_carbon dioxide	kilogram	1274
WasteFootprint_total	kilogram	30759
WasteFootprint_digestion	cubic meter	6
** No results for WasteFootprint_composting-cubic meter		
** No results for WasteFootprint_open burning-cubic meter		
WasteFootprint_incineration	cubic meter	2
** No results for WasteFootprint_recycling-cubic meter		
WasteFootprint_landfill	cubic meter	2
WasteFootprint_hazardous	cubic meter	308
WasteFootprint_radioactive	cubic meter	308
** No results for WasteFootprint_carbon dioxide-cubic meter		
WasteFootprint_total	cubic meter	4695

*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***

*** Loading pickle to dataframe ***

*** Loading activities
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080
in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)

- ('market for aluminium', 'aluminium')
- ('market for antimony', 'antimony')
- ('market for bauxite', 'bauxite')
- ('market for beryllium', 'beryllium')
- ('market for bismuth', 'bismuth')
- ('market for cadmium', 'cadmium')
- ('market for calcium borates', 'borates')
- ('market for cement', 'cement')
- ('market for cerium', 'cerium')
- ('market for chromium', 'chromium')
- ('market for cobalt', 'cobalt')
- ('market for coke', 'coke')
- ('market for copper', 'copper')
- ('market for dysprosium', 'dysprosium')
- ('market for erbium', 'erbium')
- ('market for europium', 'europium')
- ('market for electricity', 'electricity')
- ('market for ferroniobium', 'niobium')
- ('market for fluorspar', 'fluorspar')
- ('market for gadolinium', 'gadolinium')
- ('market for gallium', 'gallium')
- ('market for gold', 'gold')
- ('market for graphite', 'graphite')
- ('market for hafnium', 'hafnium')
- ('market for hard coal', 'coal(black)')
- ('market for helium', 'helium')
- ('market for holmium', 'holmium')
- ('market for hydrogen', 'hydrogen')
- ('market for indium', 'indium')
- ('market for latex', 'latex')
- ('market for lead', 'lead')
- ('market for lignite', 'coal(brown)')
- ('market for lithium', 'lithium')
- ('market for magnesium', 'magnesium')
- ('market for natural gas', 'natural gas')
- ('market for nickel', 'nickel')
- ('market for palladium', 'palladium')
- ('market for petroleum', 'petroleum')
- ('market for phosphate', 'phosphate rock')
- ('market for platinum', 'platinum')
- ('market for rare earth', 'rare earth')
- ('market for rhodium', 'rhodium')
- ('market for sand', 'sand')
- ('market for selenium', 'selenium')
- ('market for scandium', 'scandium')
- ('market for silicon', 'silicon')
- ('market for silver', 'silver')
- ('market for sodium borates', 'borates')
- ('market for strontium', 'strontium')
- ('market for tantalum', 'tantalum')
- ('market for tellurium', 'tellurium')
- ('market for tin', 'tin')
- ('market for titanium', 'titanium')
- ('market for uranium', 'uranium')
- ('market for tungsten', 'tungsten')
- ('market for vanadium', 'vanadium')
- ('market for vegetable oil', 'vegetable oil')
- ('market for tap water', 'water')
- ('market for water', 'water')
- ('market for zinc', 'zinc')
- ('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
1337	market for aluminium alloy, AlLi	aluminium	GLO
651	market for aluminium alloy, AlMg3	aluminium	GLO

1381	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1056	market for aluminium around steel bi-metal str...	aluminium	GLO
276	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
888	market for zinc slag	zinc	GLO
1082	market for zinc sulfide	zinc	GLO
793	market for zirconium oxide	zirconium	GLO
931	market for zirconium sponge, nuclear-grade	zirconium	GLO
1449	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for lithium carbonate, battery grade, classification: nan

Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"

Error for activity: market for graphite, battery grade, classification: nan

Inferring from reference product base: "graphite", from reference product "graphite, battery grade"

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

Error for activity: market for lithium hydroxide, battery grade, classification: nan

Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080 ***

*** Loading pickle to dataframe ***

There were 49224 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080/material_exchan

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1591 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085

118/192

```

** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 308
WasteFootprint_radioactive | cubic meter | 308
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 4695
*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***
*** Loading pickle to dataframe ***

*** Loading activities
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085
in project: TreX-premise-SSP2-cutoff

```

```

** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')

```

```

('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

```

* 1646 material markets were found:

	name	material_group	location
52	market for aluminium alloy, AlLi	aluminium	GLO
1561	market for aluminium alloy, AlMg3	aluminium	GLO
1255	market for aluminium alloy, metal matrix compo...	aluminium	GLO
355	market for aluminium around steel bi-metal str...	aluminium	GLO
1576	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
496	market for zinc slag	zinc	GLO
243	market for zinc sulfide	zinc	GLO
975	market for zirconium oxide	zirconium	GLO
1016	market for zirconium sponge, nuclear-grade	zirconium	GLO
1457	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```

Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p

```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085 ***

*** Loading pickle to dataframe ***

There were 49224 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085/material_exchan

*** Grouping material exchanges by material group

```

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1591 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium

```


4 : gallium
 11 : gold
 33 : graphite
 46 : helium
 1 : holmium
 1372 : hydrogen
 13 : indium
 50 : latex
 260 : lead
 52 : lithium
 312 : magnesium
 4035 : natural gas
 436 : nickel
 35 : palladium
 508 : petroleum
 207 : phosphate rock
 171 : platinum
 37 : rare earth
 11 : rhodium
 611 : sand
 1 : scandium
 9 : selenium
 375 : silicon
 50 : silver
 28 : strontium
 3 : tantalum
 2 : tellurium
 124 : tin
 457 : titanium
 5 : tungsten
 140 : uranium
 37 : vegetable oil
 11611 : water
 670 : zinc
 11 : zirconium

** Pre-processing database (33/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

=====

Starting T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090

=====

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file

** db: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090, in project: TreX-premise-SSP2-cutoff will be processed

** Opening the sausage...

Getting activity data

100%|

Adding exchange data to activities

100%|

Filling out exchange data

100%|

*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090> was exploded and pickled. Rejoice!

```

*** Starting SearchWaste ***
*** Loading pickle to dataframe ***
*** Searching for waste exchanges ***
WasteFootprint_digestion | kilogram | 4
WasteFootprint_composting | kilogram | 14
WasteFootprint_open burning | kilogram | 535
WasteFootprint_incineration | kilogram | 2637
WasteFootprint_recycling | kilogram | 84
WasteFootprint_landfill | kilogram | 1712
WasteFootprint_hazardous | kilogram | 1878
** No results for WasteFootprint_radioactive-kilogram
WasteFootprint_carbon dioxide | kilogram | 1274
WasteFootprint_total | kilogram | 30759
WasteFootprint_digestion | cubic meter | 6
** No results for WasteFootprint_composting-cubic meter
** No results for WasteFootprint_open burning-cubic meter
WasteFootprint_incineration | cubic meter | 2
** No results for WasteFootprint_recycling-cubic meter
WasteFootprint_landfill | cubic meter | 2
WasteFootprint_hazardous | cubic meter | 308
WasteFootprint_radioactive | cubic meter | 308
** No results for WasteFootprint_carbon dioxide-cubic meter
WasteFootprint_total | cubic meter | 4695
*** Finished searching for waste exchanges ***

*** Starting SearchMaterial ***
*** Loading pickle to dataframe ***

*** Loading activities
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090
in project: TreX-premise-SSP2-cutoff

** Materials (61) | (activity, group)
('market for aluminium', 'aluminium')
('market for antimony', 'antimony')
('market for bauxite', 'bauxite')
('market for beryllium', 'beryllium')
('market for bismuth', 'bismuth')
('market for cadmium', 'cadmium')
('market for calcium borates', 'borates')
('market for cement', 'cement')
('market for cerium', 'cerium')
('market for chromium', 'chromium')
('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')

```

```
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')
```

* 1646 material markets were found:

	name	material_group	location
356	market for aluminium alloy, ALi	aluminium	GLO
1074	market for aluminium alloy, AlMg3	aluminium	GLO
415	market for aluminium alloy, metal matrix compo...	aluminium	GLO
838	market for aluminium around steel bi-metal str...	aluminium	GLO
45	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
179	market for zinc slag	zinc	GLO
587	market for zinc sulfide	zinc	GLO
1103	market for zirconium oxide	zirconium	GLO
628	market for zirconium sponge, nuclear-grade	zirconium	GLO
1549	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090 ***

*** Loading pickle to dataframe ***

There were 49224 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090/material_exchan

*** Grouping material exchanges by material group

```
2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
```

1591 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11611 : water
670 : zinc
11 : zirconium

** Pre-processing database (34/35): ecoinvent cutoff 3.9 remind SSP2-PkBudg500 2095**

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S
```

Starting T-reX for ecoinvent cutoff 3.9 remind SSP2-PkBudg500 2095

*** Starting ExplodeDatabase ***

ExplodeDatabase uses wurst to open a bw2 database, explodes the exchanges for each process, and then returns a pickle file '

** db: ecoinvent cutoff 3.9 remind SSP2-PkBudq500 2095, in project: TreX-premise-SSP2-cutoff will be processed

**** Opening the sausage...**

Getting activity data

100%

Adding exchange data to activities

```
*** Extracting activities from db...

*** Exploding exchanges from activities...

*** Pickling...

Pickle is: 84 MB

*** The sausage <ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095> was exploded and pickled. Rejoice!
```

```
*** Starting SearchMaterial ***
*** Loading pickle to dataframe ***

*** Loading activities
from database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095
in project: TreX-premise-SSP2-cutoff
```

**** Materials (61) | (activity, group)**
 ('market for aluminium', 'aluminium')
 ('market for antimony', 'antimony')
 ('market for bauxite', 'bauxite')
 ('market for beryllium', 'beryllium')
 ('market for bismuth', 'bismuth')
 ('market for cadmium', 'cadmium')
 ('market for calcium borates', 'borates')
 ('market for cement', 'cement')
 ('market for cerium', 'cerium')
 ('market for chromium', 'chromium')
 ('market for cobalt', 'cobalt')
 ('market for coke', 'coke')
 ('market for copper', 'copper')
 ('market for dysprosium', 'dysprosium')
 ('market for erbium', 'erbium')
 ('market for europium', 'europium')
 ('market for electricity', 'electricity')
 ('market for ferroniobium', 'niobium')
 ('market for fluorspar', 'fluorspar')
 ('market for gadolinium', 'gadolinium')
 ('market for gallium', 'gallium')
 ('market for gold', 'gold')
 ('market for graphite', 'graphite')
 ('market for hafnium', 'hafnium')

```

('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

```

* 1646 material markets were found:

	name	material_group	location
21	market for aluminium alloy, AlLi	aluminium	GLO
1579	market for aluminium alloy, AlMg3	aluminium	GLO
269	market for aluminium alloy, metal matrix compo...	aluminium	GLO
1593	market for aluminium around steel bi-metal str...	aluminium	GLO
447	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
658	market for zinc slag	zinc	GLO
387	market for zinc sulfide	zinc	GLO
1165	market for zirconium oxide	zirconium	GLO
649	market for zirconium sponge, nuclear-grade	zirconium	GLO
1242	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

```

Error for activity: market for hard coal power plant, classification: nan
  Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for lithium carbonate, battery grade, classification: nan
  Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for graphite, battery grade, classification: nan
  Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
  Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

```

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095 ***

*** Loading pickle to dataframe ***

There were 49224 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095/material_exchan

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1591 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium
5 : tungsten
140 : uranium
37 : vegetable oil
11611 : water
670 : zinc
11 : zirconium

** Pre-processing database (35/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100**

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

('market for cobalt', 'cobalt')
('market for coke', 'coke')
('market for copper', 'copper')
('market for dysprosium', 'dysprosium')
('market for erbium', 'erbium')
('market for europium', 'europium')
('market for electricity', 'electricity')
('market for ferroniobium', 'niobium')
('market for fluorspar', 'fluorspar')
('market for gadolinium', 'gadolinium')
('market for gallium', 'gallium')
('market for gold', 'gold')
('market for graphite', 'graphite')
('market for hafnium', 'hafnium')
('market for hard coal', 'coal(black)')
('market for helium', 'helium')
('market for holmium', 'holmium')
('market for hydrogen', 'hydrogen')
('market for indium', 'indium')
('market for latex', 'latex')
('market for lead', 'lead')
('market for lignite', 'coal(brown)')
('market for lithium', 'lithium')
('market for magnesium', 'magnesium')
('market for natural gas', 'natural gas')
('market for nickel', 'nickel')
('market for palladium', 'palladium')
('market for petroleum', 'petroleum')
('market for phosphate', 'phosphate rock')
('market for platinum', 'platinum')
('market for rare earth', 'rare earth')
('market for rhodium', 'rhodium')
('market for sand', 'sand')
('market for selenium', 'selenium')
('market for scandium', 'scandium')
('market for silicon', 'silicon')
('market for silver', 'silver')
('market for sodium borates', 'borates')
('market for strontium', 'strontium')
('market for tantalum', 'tantalum')
('market for tellurium', 'tellurium')
('market for tin', 'tin')
('market for titanium', 'titanium')
('market for uranium', 'uranium')
('market for tungsten', 'tungsten')
('market for vanadium', 'vanadium')
('market for vegetable oil', 'vegetable oil')
('market for tap water', 'water')
('market for water', 'water')
('market for zinc', 'zinc')
('market for zirconium', 'zirconium')

* 1646 material markets were found:

	name	material_group	location
1558	market for aluminium alloy, AlLi	aluminium	GLO
843	market for aluminium alloy, AlMg3	aluminium	GLO
1257	market for aluminium alloy, metal matrix compo...	aluminium	GLO
25	market for aluminium around steel bi-metal str...	aluminium	GLO
1287	market for aluminium around steel bi-metal wir...	aluminium	GLO
...
1110	market for zinc slag	zinc	GLO
386	market for zinc sulfide	zinc	GLO
153	market for zirconium oxide	zirconium	GLO
1372	market for zirconium sponge, nuclear-grade	zirconium	GLO
1158	market for zirconium tetrachloride	zirconium	GLO

[1646 rows x 3 columns]

* Extracting classifications...

Error for activity: market for hard coal power plant, classification: nan

Inferring from reference product base: "hard coal pulverised power plant 500MW", from reference product "hard coal p
Error for activity: market for graphite, battery grade, classification: nan
Inferring from reference product base: "graphite", from reference product "graphite, battery grade"
Error for activity: market for lithium carbonate, battery grade, classification: nan
Inferring from reference product base: "lithium carbonate", from reference product "lithium carbonate, battery grade"
Error for activity: market for lithium hydroxide, battery grade, classification: nan
Inferring from reference product base: "lithium hydroxide", from reference product "lithium hydroxide, battery grade"

Saved activities list to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100/material_activitie

*** Searching for material exchanges in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100 ***

*** Loading pickle to dataframe ***

There were 49224 matching exchanges found in ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100

Saved material exchanges to csv:

/home/stew/code/gh/T-reX/data/SearchMaterialResults/ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100/material_exchan

*** Grouping material exchanges by material group

2101 : aluminium
27 : antimony
28 : bauxite
1 : beryllium
15 : borates
17 : cadmium
1591 : cement
3 : cerium
473 : chromium
1738 : coal(black)
589 : coal(brown)
166 : cobalt
110 : coke
1244 : copper
1 : dysprosium
19360 : electricity
1 : erbium
1 : europium
29 : fluorspar
1 : gadolinium
4 : gallium
11 : gold
33 : graphite
46 : helium
1 : holmium
1372 : hydrogen
13 : indium
50 : latex
260 : lead
52 : lithium
312 : magnesium
4035 : natural gas
436 : nickel
35 : palladium
508 : petroleum
207 : phosphate rock
171 : platinum
37 : rare earth
11 : rhodium
611 : sand
1 : scandium
9 : selenium
375 : silicon
50 : silver
28 : strontium
3 : tantalum
2 : tellurium
124 : tin
457 : titanium

5 : tungsten
140 : uranium
37 : vegetable oil
11611 : water
670 : zinc
11 : zirconium

*** Writing custom database file: biosphere_T-reX

*** Appending to existing custom database file: biosphere_T-reX

Appending: MaterialFootprint_aluminium
Appending: MaterialFootprint_antimony
Appending: MaterialFootprint_bauxite
Appending: MaterialFootprint_beryllium
Appending: MaterialFootprint_borates
Appending: MaterialFootprint_cadmium
Appending: MaterialFootprint_cement
Appending: MaterialFootprint_cerium
Appending: MaterialFootprint_chromium
Appending: MaterialFootprint_coal(black)
Appending: MaterialFootprint_coal(brown)
Appending: MaterialFootprint_cobalt
Appending: MaterialFootprint_coke
Appending: MaterialFootprint_copper
Appending: MaterialFootprint_dysprosium
Appending: MaterialFootprint_electricity
Appending: MaterialFootprint_erbium
Appending: MaterialFootprint_europium
Appending: MaterialFootprint_fluorspar
Appending: MaterialFootprint_gadolinium
Appending: MaterialFootprint_gallium
Appending: MaterialFootprint_gold
Appending: MaterialFootprint_graphite
Appending: MaterialFootprint_helium
Appending: MaterialFootprint_holmium
Appending: MaterialFootprint_hydrogen
Appending: MaterialFootprint_indium
Appending: MaterialFootprint_latex
Appending: MaterialFootprint_lead
Appending: MaterialFootprint_lithium
Appending: MaterialFootprint_magnesium
Appending: MaterialFootprint_natural gas
Appending: MaterialFootprint_nickel
Appending: MaterialFootprint_palladium
Appending: MaterialFootprint_petroleum
Appending: MaterialFootprint_phosphate rock
Appending: MaterialFootprint_platinum
Appending: MaterialFootprint_rare earth
Appending: MaterialFootprint_rhodium
Appending: MaterialFootprint_sand
Appending: MaterialFootprint_scandium
Appending: MaterialFootprint_selenium
Appending: MaterialFootprint_silicon
Appending: MaterialFootprint_silver
Appending: MaterialFootprint_strontium
Appending: MaterialFootprint_tantalum
Appending: MaterialFootprint_tellurium
Appending: MaterialFootprint_tin
Appending: MaterialFootprint_titanium
Appending: MaterialFootprint_tungsten
Appending: MaterialFootprint_uranium
Appending: MaterialFootprint_vegetable oil
Appending: MaterialFootprint_water
Appending: MaterialFootprint_zinc
Appending: MaterialFootprint_zirconium

Appending: WasteFootprint_carbondioxide-kilogram
Appending: WasteFootprint_composting-kilogram
Appending: WasteFootprint_digestion-cubicmeter
Appending: WasteFootprint_digestion-kilogram
Appending: WasteFootprint_hazardous-cubicmeter
Appending: WasteFootprint_hazardous-kilogram
Appending: WasteFootprint_incineration-cubicmeter
Appending: WasteFootprint_incineration-kilogram
Appending: WasteFootprint_landfill-cubicmeter
Appending: WasteFootprint_landfill-kilogram
Appending: WasteFootprint_openburning-kilogram
Appending: WasteFootprint_radioactive-cubicmeter
Appending: WasteFootprint_recycling-kilogram
Appending: WasteFootprint_total-cubicmeter
Appending: WasteFootprint_total-kilogram

** Added 70 entries to the xlsx for the custom waste and material database:
biosphere_T-reX

** Importing the custom database biosphere_T-reX**
to the brightway2 project: TreX-premise-SSP2-cutoff

** Running BW2io ExcellImporter **

Extracted 1 worksheets in 0.01 seconds
Applying strategy: csv_restore_tuples
Applying strategy: csv_restore_booleans
Applying strategy: csv_numerize
Applying strategy: csv_drop_unknown
Applying strategy: csv_add_missing_exchanges_section
Applying strategy: normalize_units
Applying strategy: normalize_biosphere_categories
Applying strategy: normalize_biosphere_names
Applying strategy: strip_biosphere_exc_locations
Applying strategy: set_code_by_activity_hash
Applying strategy: link_iterable_by_fields
Applying strategy: assign_only_product_as_production
Applying strategy: link_technosphere_by_activity_hash
Applying strategy: drop_falsey_uncertainty_fields_but_keep_zeros
Applying strategy: convert_uncertainty_types_to_integers
Applying strategy: convert_activity_parameters_to_list
Applied 16 strategies in 3.21 seconds
70 datasets
0 exchanges
0 unlinked exchanges

Writing activities to SQLite3 database:
0% [#####] 100% | ETA: 00:00:01
Total time elapsed: 00:00:00
Title: Writing activities to SQLite3 database:
Started: 03/21/2024 20:35:06
Finished: 03/21/2024 20:35:06
Total time elapsed: 00:00:00
CPU %: 0.00
Memory %: 4.46
Created database: biosphere_T-reX

** Database metadata **

format: Excel
depends: []
backend: sqlite
number: 70
modified: 2024-03-21T20:35:06.420556
searchable: True
processed: 2024-03-21T20:35:07.025325

*** Great success! ***

*** Running AddMethods() ***

('T-reX', 'Demand: Aluminium', 'Aluminium')

('T-reX', 'Demand: Antimony', 'Antimony')
('T-reX', 'Demand: Bauxite', 'Bauxite')
('T-reX', 'Demand: Beryllium', 'Beryllium')
('T-reX', 'Demand: Borates', 'Borates')
('T-reX', 'Demand: Cadmium', 'Cadmium')
('T-reX', 'Demand: Cement', 'Cement')
('T-reX', 'Demand: Cerium', 'Cerium')
('T-reX', 'Demand: Chromium', 'Chromium')
('T-reX', 'Demand: Coal(black)', 'Coal(black)')
('T-reX', 'Demand: Coal(brown)', 'Coal(brown)')
('T-reX', 'Demand: Cobalt', 'Cobalt')
('T-reX', 'Demand: Coke', 'Coke')
('T-reX', 'Demand: Copper', 'Copper')
('T-reX', 'Demand: Dysprosium', 'Dysprosium')
('T-reX', 'Demand: Electricity', 'Electricity')
('T-reX', 'Demand: Erbium', 'Erbium')
('T-reX', 'Demand: Europium', 'Europium')
('T-reX', 'Demand: Fluorspar', 'Fluorspar')
('T-reX', 'Demand: Gadolinium', 'Gadolinium')
('T-reX', 'Demand: Gallium', 'Gallium')
('T-reX', 'Demand: Gold', 'Gold')
('T-reX', 'Demand: Graphite', 'Graphite')
('T-reX', 'Demand: Helium', 'Helium')
('T-reX', 'Demand: Holmium', 'Holmium')
('T-reX', 'Demand: Hydrogen', 'Hydrogen')
('T-reX', 'Demand: Indium', 'Indium')
('T-reX', 'Demand: Latex', 'Latex')
('T-reX', 'Demand: Lead', 'Lead')
('T-reX', 'Demand: Lithium', 'Lithium')
('T-reX', 'Demand: Magnesium', 'Magnesium')
('T-reX', 'Demand: Natural gas', 'Natural gas')
('T-reX', 'Demand: Nickel', 'Nickel')
('T-reX', 'Demand: Palladium', 'Palladium')
('T-reX', 'Demand: Petroleum', 'Petroleum')
('T-reX', 'Demand: Phosphate rock', 'Phosphate rock')
('T-reX', 'Demand: Platinum', 'Platinum')
('T-reX', 'Demand: Rare earth', 'Rare earth')
('T-reX', 'Demand: Rhodium', 'Rhodium')
('T-reX', 'Demand: Sand', 'Sand')
('T-reX', 'Demand: Scandium', 'Scandium')
('T-reX', 'Demand: Selenium', 'Selenium')
('T-reX', 'Demand: Silicon', 'Silicon')
('T-reX', 'Demand: Silver', 'Silver')
('T-reX', 'Demand: Strontium', 'Strontium')
('T-reX', 'Demand: Tantalum', 'Tantalum')
('T-reX', 'Demand: Tellurium', 'Tellurium')
('T-reX', 'Demand: Tin', 'Tin')
('T-reX', 'Demand: Titanium', 'Titanium')
('T-reX', 'Demand: Tungsten', 'Tungsten')
('T-reX', 'Demand: Uranium', 'Uranium')
('T-reX', 'Demand: Vegetable oil', 'Vegetable oil')
('T-reX', 'Demand: Water', 'Water')
('T-reX', 'Demand: Zinc', 'Zinc')
('T-reX', 'Demand: Zirconium', 'Zirconium')
('T-reX', 'Waste: Carbondioxide combined', 'Carbondioxide (kg)')
('T-reX', 'Waste: Composting combined', 'Composting (kg)')
('T-reX', 'Waste: Digestion combined', 'Digestion (m3)')
('T-reX', 'Waste: Digestion combined', 'Digestion (kg)')
('T-reX', 'Waste: Hazardous combined', 'Hazardous (m3)')
('T-reX', 'Waste: Hazardous combined', 'Hazardous (kg)')
('T-reX', 'Waste: Incineration combined', 'Incineration (m3)')
('T-reX', 'Waste: Incineration combined', 'Incineration (kg)')
('T-reX', 'Waste: Landfill combined', 'Landfill (m3)')
('T-reX', 'Waste: Landfill combined', 'Landfill (kg)')
('T-reX', 'Waste: Openburning combined', 'Openburning (kg)')
('T-reX', 'Waste: Radioactive combined', 'Radioactive (m3)')
('T-reX', 'Waste: Recycling combined', 'Recycling (kg)')
('T-reX', 'Waste: Total combined', 'Total (m3)')
('T-reX', 'Waste: Total combined', 'Total (kg)')

*** Added 70 new methods ***

*** Preprocessing completed ***

Total databases: 35
Successfully processed: 35
Duration: 0:34:26 (h:m:s)

** Processing database (1/35): ecoinvent-3.9.1-cutoff**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent-3.9.1-cutoff', 'db_T_reX': 'ecoinvent-3.9.1-cutoff'}

*** ExchangeEditor() is running for ecoinvent-3.9.1-cutoff ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/69 : MaterialFootprint_aluminium		100.0% Progress: 1822 of 1822
- 2/69 : MaterialFootprint_antimony		100.0% Progress: 26 of 26
- 3/69 : MaterialFootprint_bauxite		100.0% Progress: 24 of 24
- 4/69 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/69 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/69 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/69 : MaterialFootprint_cement		100.0% Progress: 2575 of 2575
- 8/69 : MaterialFootprint_cerium		100.0% Progress: 2 of 2
- 9/69 : MaterialFootprint_chromium		100.0% Progress: 410 of 410
- 10/69 : MaterialFootprint_coal(black)		100.0% Progress: 1556 of 1556
- 11/69 : MaterialFootprint_coal(brown)		100.0% Progress: 499 of 499
- 12/69 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/69 : MaterialFootprint_coke		100.0% Progress: 68 of 68
- 14/69 : MaterialFootprint_copper		100.0% Progress: 915 of 915
- 15/69 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/69 : MaterialFootprint_electricity		100.0% Progress: 23823 of 23823
- 17/69 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/69 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/69 : MaterialFootprint_fluorspar		100.0% Progress: 22 of 22
- 20/69 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/69 : MaterialFootprint_gallium		100.0% Progress: 3 of 3
- 22/69 : MaterialFootprint_gold		100.0% Progress: 10 of 10
- 23/69 : MaterialFootprint_graphite		100.0% Progress: 30 of 30
- 24/69 : MaterialFootprint_helium		100.0% Progress: 43 of 43
- 25/69 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/69 : MaterialFootprint_hydrogen		100.0% Progress: 377 of 377
- 27/69 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/69 : MaterialFootprint_latex		100.0% Progress: 49 of 49
- 29/69 : MaterialFootprint_lead		100.0% Progress: 184 of 184
- 30/69 : MaterialFootprint_lithium		100.0% Progress: 43 of 43
- 31/69 : MaterialFootprint_magnesium		100.0% Progress: 250 of 250
- 32/69 : MaterialFootprint_natural gas		100.0% Progress: 5804 of 5804
- 33/69 : MaterialFootprint_nickel		100.0% Progress: 342 of 342
- 34/69 : MaterialFootprint_palladium		100.0% Progress: 22 of 22
- 35/69 : MaterialFootprint_petroleum		100.0% Progress: 503 of 503
- 36/69 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/69 : MaterialFootprint_platinum		100.0% Progress: 164 of 164
- 38/69 : MaterialFootprint_rare earth		100.0% Progress: 37 of 37
- 39/69 : MaterialFootprint_rhodium		100.0% Progress: 11 of 11
- 40/69 : MaterialFootprint_sand		100.0% Progress: 553 of 553
- 41/69 : MaterialFootprint_scandium		100.0% Progress: 1 of 1
- 42/69 : MaterialFootprint_selenium		100.0% Progress: 9 of 9
- 43/69 : MaterialFootprint_silicon		100.0% Progress: 358 of 358
- 44/69 : MaterialFootprint_silver		100.0% Progress: 46 of 46
- 45/69 : MaterialFootprint_strontium		100.0% Progress: 27 of 27
- 46/69 : MaterialFootprint_tantalum		100.0% Progress: 3 of 3
- 47/69 : MaterialFootprint_tellurium		100.0% Progress: 2 of 2
- 48/69 : MaterialFootprint_tin		100.0% Progress: 103 of 103
- 49/69 : MaterialFootprint_titanium		100.0% Progress: 454 of 454

```
- 50/69 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/69 : MaterialFootprint_uranium | 100.0% | Progress: 136 of 1
- 52/69 : MaterialFootprint_vegetable oil | 100.0% | Progress: 34 of 3
- 53/69 : MaterialFootprint_water | 100.0% | Progress: 10145 of 1
- 54/69 : MaterialFootprint_zinc | 100.0% | Progress: 557 of 557
- 55/69 : MaterialFootprint_zirconium | 100.0% | Progress: 9 of 9
- 56/69 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 57/69 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 58/69 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 o
- 59/69 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 29
- 60/69 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 149
- 61/69 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 62/69 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 1687
- 63/69 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 64/69 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1430 o
- 65/69 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 66/69 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 29
- 67/69 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 63 c
- 68/69 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 3838 c
- 69/69 : WasteFootprint_total-kilogram | 100.0% | Progress: 27830 o
*****
```

*** ExchangeEditor() completed for ecoinvent-3.9.1-cutoff in 0:24:13 (h:m:s) ***

** Verifying database ecoinvent-3.9.1-cutoff in project TreX-premise-SSP2-cutoff **

Score: 0.00e+00
Method: Europium
Activity: market for phosphorus oxychloride
Database: ecoinvent-3.9.1-cutoff

Score: 9.80e-02
Method: Composting (kg)
Activity: market for mandarin, fresh grade
Database: ecoinvent-3.9.1-cutoff

** Database verified successfully! **

=====

*** Finished T-reX for ecoinvent-3.9.1-cutoff ***

Duration: 0:24:27 (h:m:s)

*** Woah woah wee waa, great success!! ***

=====

** Processing database (2/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2020**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2020 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of :
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 1
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 4
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 16
```

```
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 686 of 686
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4105 of 4105
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11 of 11
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2 of 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637 of 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of 1712
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53 of 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30 of 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of 84
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of 4695
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of 30759
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2020 in 0:25:16 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2020 in project TreX-premise-SSP2-cutoff **

Score: -3.13e-21

Method: Holmium

Activity: transport, freight, lorry, diesel, 7.5t gross weight, 2020, EURO-VI, regional delivery

Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2020

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2020 ***

Duration: 0:25:29 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (3/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2025**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2025 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium	17.1% Progress: 360 of 2101	- 1/70 : MaterialFootprint_aluminium
- 2/70 : MaterialFootprint_antimony	100.0% Progress: 27 of 27	- 2/70 : MaterialFootprint_antimony
- 3/70 : MaterialFootprint_bauxite	100.0% Progress: 28 of 28	- 3/70 : MaterialFootprint_bauxite
- 4/70 : MaterialFootprint_beryllium	100.0% Progress: 1 of 1	- 4/70 : MaterialFootprint_beryllium
- 5/70 : MaterialFootprint_borates	100.0% Progress: 15 of 15	- 5/70 : MaterialFootprint_borates
- 6/70 : MaterialFootprint_cadmium	100.0% Progress: 17 of 17	- 6/70 : MaterialFootprint_cadmium
- 7/70 : MaterialFootprint_cement	100.0% Progress: 1555 of 1555	- 7/70 : MaterialFootprint_cement
- 8/70 : MaterialFootprint_cerium	100.0% Progress: 3 of 3	- 8/70 : MaterialFootprint_cerium
- 9/70 : MaterialFootprint_chromium	100.0% Progress: 473 of 473	- 9/70 : MaterialFootprint_chromium
- 10/70 : MaterialFootprint_coal(black)	100.0% Progress: 1738 of 1738	- 10/70 : MaterialFootprint_coal(black)
- 11/70 : MaterialFootprint_coal(brown)	100.0% Progress: 589 of 589	- 11/70 : MaterialFootprint_coal(brown)
- 12/70 : MaterialFootprint_cobalt	100.0% Progress: 166 of 166	- 12/70 : MaterialFootprint_cobalt
- 13/70 : MaterialFootprint_coke	100.0% Progress: 110 of 110	- 13/70 : MaterialFootprint_coke
- 14/70 : MaterialFootprint_copper	100.0% Progress: 1244 of 1244	- 14/70 : MaterialFootprint_copper
- 15/70 : MaterialFootprint_dysprosium	100.0% Progress: 1 of 1	- 15/70 : MaterialFootprint_dysprosium
- 16/70 : MaterialFootprint_electricity	100.0% Progress: 19360 of 19360	- 16/70 : MaterialFootprint_electricity
- 17/70 : MaterialFootprint_erbium	100.0% Progress: 1 of 1	- 17/70 : MaterialFootprint_erbium
- 18/70 : MaterialFootprint_europium	100.0% Progress: 1 of 1	- 18/70 : MaterialFootprint_europium
- 19/70 : MaterialFootprint_fluorspar	100.0% Progress: 29 of 29	- 19/70 : MaterialFootprint_fluorspar
- 20/70 : MaterialFootprint_gadolinium	100.0% Progress: 1 of 1	- 20/70 : MaterialFootprint_gadolinium
- 21/70 : MaterialFootprint_gallium	100.0% Progress: 4 of 4	- 21/70 : MaterialFootprint_gallium
- 22/70 : MaterialFootprint_gold	100.0% Progress: 11 of 11	- 22/70 : MaterialFootprint_gold
- 23/70 : MaterialFootprint_graphite	100.0% Progress: 33 of 33	- 23/70 : MaterialFootprint_graphite
- 24/70 : MaterialFootprint_helium	100.0% Progress: 46 of 46	- 24/70 : MaterialFootprint_helium
- 25/70 : MaterialFootprint_holmium	100.0% Progress: 1 of 1	- 25/70 : MaterialFootprint_holmium
- 26/70 : MaterialFootprint_hydrogen	100.0% Progress: 952 of 952	- 26/70 : MaterialFootprint_hydrogen
- 27/70 : MaterialFootprint_indium	100.0% Progress: 13 of 13	- 27/70 : MaterialFootprint_indium
- 28/70 : MaterialFootprint_latex	100.0% Progress: 50 of 50	- 28/70 : MaterialFootprint_latex
- 29/70 : MaterialFootprint_lead	100.0% Progress: 260 of 260	- 29/70 : MaterialFootprint_lead
- 30/70 : MaterialFootprint_lithium	100.0% Progress: 52 of 52	- 30/70 : MaterialFootprint_lithium
- 31/70 : MaterialFootprint_magnesium	100.0% Progress: 312 of 312	- 31/70 : MaterialFootprint_magnesium
- 32/70 : MaterialFootprint_natural gas	100.0% Progress: 4035 of 4035	- 32/70 : MaterialFootprint_natural gas
- 33/70 : MaterialFootprint_nickel	100.0% Progress: 436 of 436	- 33/70 : MaterialFootprint_nickel
- 34/70 : MaterialFootprint_palladium	100.0% Progress: 35 of 35	- 34/70 : MaterialFootprint_palladium
- 35/70 : MaterialFootprint_petroleum	100.0% Progress: 508 of 508	- 35/70 : MaterialFootprint_petroleum
- 36/70 : MaterialFootprint_phosphate rock	100.0% Progress: 207 of 207	- 36/70 : MaterialFootprint_phosphate rock
- 37/70 : MaterialFootprint_platinum	100.0% Progress: 171 of 171	- 37/70 : MaterialFootprint_platinum
- 38/70 : MaterialFootprint_rare earth	100.0% Progress: 37 of 37	- 38/70 : MaterialFootprint_rare earth
- 39/70 : MaterialFootprint_rhodium	100.0% Progress: 11 of 11	- 39/70 : MaterialFootprint_rhodium
- 40/70 : MaterialFootprint_sand	100.0% Progress: 611 of 611	- 40/70 : MaterialFootprint_sand
- 41/70 : MaterialFootprint_scandium	100.0% Progress: 1 of 1	- 41/70 : MaterialFootprint_scandium
- 42/70 : MaterialFootprint_selenium	100.0% Progress: 9 of 9	- 42/70 : MaterialFootprint_selenium
- 43/70 : MaterialFootprint_silicon	100.0% Progress: 375 of 375	- 43/70 : MaterialFootprint_silicon
- 44/70 : MaterialFootprint_silver	100.0% Progress: 50 of 50	- 44/70 : MaterialFootprint_silver
- 45/70 : MaterialFootprint_strontium	100.0% Progress: 28 of 28	- 45/70 : MaterialFootprint_strontium
- 46/70 : MaterialFootprint_tantalum	100.0% Progress: 3 of 3	- 46/70 : MaterialFootprint_tantalum
- 47/70 : MaterialFootprint_tellurium	100.0% Progress: 2 of 2	- 47/70 : MaterialFootprint_tellurium
- 48/70 : MaterialFootprint_tin	100.0% Progress: 124 of 124	- 48/70 : MaterialFootprint_tin
- 49/70 : MaterialFootprint_titanium	100.0% Progress: 457 of 457	- 49/70 : MaterialFootprint_titanium
- 50/70 : MaterialFootprint_tungsten	100.0% Progress: 5 of 5	- 50/70 : MaterialFootprint_tungsten

```
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 1
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 3
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 1
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 1
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11:
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 o
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2025 in 0:24:17 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2025 in project TreX-premise-SSP2-cutoff **

Score: 0.00e+00

Method: Openburning (kg)

Activity: market for sulfidic tailings, from nickel mine operation

Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2025

Score: 5.44e-09

Method: Hazardous (m3)

Activity: transport, freight, lorry, compressed gas, 18t gross weight, 2020, EURO-VI, regional delivery

Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2025

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2025 ***

Duration: 0:24:36 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (4/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2030**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2030 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of :
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 1
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 4
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 16
```

```
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1204 of 1204
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4021 of 4021
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11 of 11
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2 of 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637 of 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of 1712
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53 of 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30 of 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of 84
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of 4695
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of 30759
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2030 in 0:24:21 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2030 in project TreX-premise-SSP2-cutoff **

Score: 6.41e-01

Method: Landfill (kg)

Activity: diesel production, from methanol, hydrogen from coal gasification, with CCS, economic allocation

Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2030

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2030 ***

Duration: 0:24:36 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (5/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2035**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2035 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0% Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium		100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0% Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0% Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0% Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0% Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0% Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0% Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0% Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0% Progress: 1302 of 1302
- 27/70 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0% Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0% Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0% Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0% Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0% Progress: 4021 of 4021
- 33/70 : MaterialFootprint_nickel		100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0% Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0% Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0% Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0% Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0% Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0% Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon		100.0% Progress: 375 of 375
- 44/70 : MaterialFootprint_silver		100.0% Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium		100.0% Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum		100.0% Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium		100.0% Progress: 2 of 2
- 48/70 : MaterialFootprint_tin		100.0% Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium		100.0% Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten		100.0% Progress: 5 of 5


```
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11 of
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2040 in 0:24:24 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2040 in project TreX-premise-SSP2-cutoff **

Score: 6.77e-04
Method: Openburning (kg)
Activity: market for methyl ethyl ketone
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2040

** Database verified successfully! **

=====

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2040 ***

Duration: 0:24:40 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (7/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2045**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2045 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0% Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium		100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0% Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0% Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0% Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0% Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0% Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0% Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0% Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0% Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0% Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0% Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0% Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0% Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0% Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0% Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0% Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0% Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0% Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0% Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0% Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon		100.0% Progress: 375 of 375
- 44/70 : MaterialFootprint_silver		100.0% Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium		100.0% Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum		100.0% Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium		100.0% Progress: 2 of 2
- 48/70 : MaterialFootprint_tin		100.0% Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium		100.0% Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten		100.0% Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium		100.0% Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil		100.0% Progress: 37 of 37
- 53/70 : MaterialFootprint_water		100.0% Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc		100.0% Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium		100.0% Progress: 11 of 11

```
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11:
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 o
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2045 in 0:24:23 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2045 in project TreX-premise-SSP2-cutoff **

Score: 1.26e-08
Method: Rare earth
Activity: heat production, mixed logs, at furnace 100kW
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2045

** Database verified successfully! **

=====

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2045 ***

Duration: 0:24:40 (h:m:s)

*** Woah woah wee waa, great success!! ***

=====

** Processing database (8/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2050**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2050 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 1
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 4
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 16
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 1
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
```



```
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11 of
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2050 in 0:24:28 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2050 in project TreX-premise-SSP2-cutoff **

Score: 7.56e+04

Method: Coke

Activity: Medium duty truck, diesel, 18t gross weight, 2005, EURO-IV, long haul

Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2050

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2050 ***

Duration: 0:24:44 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (9/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2055**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2055 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0%	Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0%	Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0%	Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0%	Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0%	Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0%	Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0%	Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium		100.0%	Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0%	Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0%	Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0%	Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0%	Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0%	Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0%	Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0%	Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0%	Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0%	Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0%	Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0%	Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0%	Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0%	Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0%	Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0%	Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0%	Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0%	Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0%	Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0%	Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0%	Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0%	Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0%	Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0%	Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0%	Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0%	Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0%	Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0%	Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0%	Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0%	Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0%	Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0%	Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0%	Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0%	Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0%	Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon		100.0%	Progress: 375 of 375
- 44/70 : MaterialFootprint_silver		100.0%	Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium		100.0%	Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum		100.0%	Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium		100.0%	Progress: 2 of 2
- 48/70 : MaterialFootprint_tin		100.0%	Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium		100.0%	Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten		100.0%	Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium		100.0%	Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil		100.0%	Progress: 37 of 37
- 53/70 : MaterialFootprint_water		100.0%	Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc		100.0%	Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium		100.0%	Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram		100.0%	Progress: 11 of 11
- 57/70 : WasteFootprint_composting-kilogram		100.0%	Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter		100.0%	Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram		100.0%	Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter		100.0%	Progress: 3 of 3

```
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2055 in 0:24:21 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2055 in project TreX-premise-SSP2-cutoff **

Score: 1.15e-01
Method: Electricity
Activity: chloroacetic acid production
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2055

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2055 ***

Duration: 0:24:39 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (10/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2060**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2060 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of 2
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 17
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 166
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
```

```
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11 of 11
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2 of 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637 of 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of 1712
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53 of 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30 of 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of 84
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of 4695
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of 30759
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2060 in 0:24:30 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2060 in project TreX-premise-SSP2-cutoff **

Score: 2.30e-10
Method: Gallium
Activity: barley grain to generic market for energy feed
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2060

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2060 ***

Duration: 0:24:48 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (11/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2065**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2065 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0% Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium		100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0% Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0% Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0% Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0% Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0% Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0% Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0% Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0% Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0% Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0% Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0% Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0% Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0% Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0% Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0% Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0% Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0% Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0% Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0% Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon		100.0% Progress: 375 of 375
- 44/70 : MaterialFootprint_silver		100.0% Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium		100.0% Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum		100.0% Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium		100.0% Progress: 2 of 2
- 48/70 : MaterialFootprint_tin		100.0% Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium		100.0% Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten		100.0% Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium		100.0% Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil		100.0% Progress: 37 of 37
- 53/70 : MaterialFootprint_water		100.0% Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc		100.0% Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium		100.0% Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram		100.0% Progress: 11 of 11
- 57/70 : WasteFootprint_composting-kilogram		100.0% Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter		100.0% Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram		100.0% Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter		100.0% Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram		100.0% Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter		100.0% Progress: 2 of 2
- 63/70 : WasteFootprint_incineration-kilogram		100.0% Progress: 2637 of 2637
- 64/70 : WasteFootprint_landfill-cubicmeter		100.0% Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram		100.0% Progress: 1712 of 1712

```
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2065 in 0:24:25 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2065 in project TreX-premise-SSP2-cutoff **

Score: 1.02e-03

Method: Hazardous (kg)

Activity: transport, passenger car, plugin diesel hybrid, Lower medium, 2040, EURO-6d

Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2065

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2065 ***

Duration: 0:24:45 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (12/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2070**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2070 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 17
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 166
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of 4035
```

- 33/70 : MaterialFootprint_nickel	<div><div></div></div>	100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium	<div><div></div></div>	100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum	<div><div></div></div>	100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock	<div><div></div></div>	100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum	<div><div></div></div>	100.0% Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth	<div><div></div></div>	100.0% Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium	<div><div></div></div>	100.0% Progress: 11 of 11
- 40/70 : MaterialFootprint_sand	<div><div></div></div>	100.0% Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium	<div><div></div></div>	100.0% Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium	<div><div></div></div>	100.0% Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon	<div><div></div></div>	100.0% Progress: 375 of 375
- 44/70 : MaterialFootprint_silver	<div><div></div></div>	100.0% Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium	<div><div></div></div>	100.0% Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum	<div><div></div></div>	100.0% Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium	<div><div></div></div>	100.0% Progress: 2 of 2
- 48/70 : MaterialFootprint_tin	<div><div></div></div>	100.0% Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium	<div><div></div></div>	100.0% Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten	<div><div></div></div>	100.0% Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium	<div><div></div></div>	100.0% Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil	<div><div></div></div>	100.0% Progress: 37 of 37
- 53/70 : MaterialFootprint_water	<div><div></div></div>	100.0% Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc	<div><div></div></div>	100.0% Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium	<div><div></div></div>	100.0% Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram	<div><div></div></div>	100.0% Progress: 11 of 11
- 57/70 : WasteFootprint_composting-kilogram	<div><div></div></div>	100.0% Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter	<div><div></div></div>	100.0% Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram	<div><div></div></div>	100.0% Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter	<div><div></div></div>	100.0% Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram	<div><div></div></div>	100.0% Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter	<div><div></div></div>	100.0% Progress: 2 of 2
- 63/70 : WasteFootprint_incineration-kilogram	<div><div></div></div>	100.0% Progress: 2637 of 2637
- 64/70 : WasteFootprint_landfill-cubicmeter	<div><div></div></div>	100.0% Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram	<div><div></div></div>	100.0% Progress: 1712 of 1712
- 66/70 : WasteFootprint_openburning-kilogram	<div><div></div></div>	100.0% Progress: 53 of 53
- 67/70 : WasteFootprint_radioactive-cubicmeter	<div><div></div></div>	100.0% Progress: 30 of 30
- 68/70 : WasteFootprint_recycling-kilogram	<div><div></div></div>	100.0% Progress: 84 of 84
- 69/70 : WasteFootprint_total-cubicmeter	<div><div></div></div>	100.0% Progress: 4695 of 4695
- 70/70 : WasteFootprint_total-kilogram	<div><div></div></div>	100.0% Progress: 30759 of 30759

*** ExchangeEditor() completed for ecoinvent cutoff 3.9 remind SSP2-Base 2070 in 0:24:29 (h:m:s) ***

**** Verifying database ecoinvent cutoff 3.9 remind SSP2-Base 2070 in project TreX-premise-SSP2-cutoff ****

Score: 5.00e+01
Method: Coal(black)
Activity: market for concrete, 35MPa
Database: ecoinvent cutoff 3.9 remind SSP2-Base 2070

```
** Database verified successfully! **
```

```
*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2070 ***
      Duration: 0:24:45 (h:m:s)
*** Woah woah wee waa. great success!! ***
```

** Processing database (13/35): ecoinvent cutoff 3.9 remind SSP2-Base 2075**

Arguments:

```
{'project base': 'premise-SSP2-cutoff', 'project T reX': 'TreX-premise-SSP2-cutoff', 'db name': 'ecoinvent cutoff 3.9 remind S
```

*** ExchangeEditor() is running for ecoinvent cutoff 3.9 remind SSP2-Base 2075 ***

* Appending waste and material exchanges in biosphere T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 17
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 166
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11 of 11
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2 of 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637 of 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of 1712
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53 of 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30 of 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of 84
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of 4695
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of 30759
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2075 in 0:24:26 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2075 in project TreX-premise-SSP2-cutoff **

Score: 4.84e+03

Method: Aluminium

Activity: Medium duty truck, compressed gas, 18t gross weight, 2020, EURO-VI, urban delivery

Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2075

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2075 ***

Duration: 0:24:42 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (14/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2080**

Arguments:

{ 'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2080 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0% Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium		100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0% Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0% Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0% Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0% Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0% Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0% Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0% Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0% Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0% Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0% Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0% Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0% Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0% Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0% Progress: 171 of 171

```
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11:
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 o
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2080 in 0:24:25 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2080 in project TreX-premise-SSP2-cutoff **

Score: 3.82e-03
Method: Digestion (kg)
Activity: market for sawnwood, lath, softwood, dried (u=20%), planed
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2080

** Database verified successfully! **

```
*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2080 ***
Duration: 0:24:40 (h:m:s)
*** Woah woah wee waa, great success!! ***
```

** Processing database (15/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2085**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2085 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of :
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
```

```
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 1
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 4
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 16
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 1
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 o
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 3
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of !
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 c
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 1
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 61
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 45
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 1
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 3
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 1
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 1
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11:
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 o
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2085 in 0:24:23 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2085 in project TreX-premise-SSP2-cutoff **

Score: 5.94e-01
Method: Landfill (kg)
Activity: market for sodium nitrate
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2085

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2085 ***

Duration: 0:24:37 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (16/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2090**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2090 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0% Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium		100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0% Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0% Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0% Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0% Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0% Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0% Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0% Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0% Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0% Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0% Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0% Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0% Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0% Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0% Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0% Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0% Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0% Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0% Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0% Progress: 9 of 9

Score: 6.44e-22
Method: Holmium
Activity: market for diesel, burned in building machine
Database: ecoinvent cutoff 3.9 remind SSP2-Base 2090

=====

Duration: 0:24:55 (h:m:s)

=====

```
{'project base': 'premise-SSP2-cutoff', 'project TreX': 'TreX-premise-SSP2-cutoff', 'db name': 'ecoinvent cutoff 3.9 remind S
```

- 1/70 : MaterialFootprint_aluminium			100.0%	Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony			100.0%	Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite			100.0%	Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium			100.0%	Progress: 1 of 1
- 5/70 : MaterialFootprint_borates			100.0%	Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium			100.0%	Progress: 17 of 17
- 7/70 : MaterialFootprint_cement			100.0%	Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium			100.0%	Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium			100.0%	Progress: 473 of 473


```
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 16
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 1
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-Base_2095 in 0:24:47 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2095 in project TreX-premise-SSP2-cutoff **

Score: 1.13e-06

Method: Uranium

Activity: chromium oxide production, flakes

Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2095

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-Base_2095 ***

Duration: 0:25:04 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (18/35): ecoinvent_cutoff_3.9_remind_SSP2-Base_2100**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-Base_2100 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0% Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium		100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0% Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0% Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0% Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0% Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0% Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0% Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0% Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0% Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0% Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0% Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0% Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0% Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0% Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0% Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0% Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0% Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0% Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0% Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0% Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon		100.0% Progress: 375 of 375
- 44/70 : MaterialFootprint_silver		100.0% Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium		100.0% Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum		100.0% Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium		100.0% Progress: 2 of 2

Database: ecoinvent cutoff 3.9 remind SSP2-Base 2100

```
{'project base': 'premise-SSP2-cutoff', 'project T reX': 'TreX-premise-SSP2-cutoff', 'db name': 'ecoinvent cutoff 3.9 remind S
```

- 1/70 : MaterialFootprint_aluminium	██████████	100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony	██████████	100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite	██████████	100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium	██████████	100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates	██████████	100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium	██████████	100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement	██████████	100.0% Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium	██████████	100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium	██████████	100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)	██████████	100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)	██████████	100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt	██████████	100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke	██████████	100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper	██████████	100.0% Progress: 1244 of 1244


```
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 1
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 686 of 686
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4105 of 4105
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11569 of 11569
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 11 of 11
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2 of 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637 of 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of 1712
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53 of 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30 of 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of 84
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of 4695
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of 30759
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020 in 0:24:46 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020 in project TreX-premise-SSP2-cutoff **

Score: 5.20e-07

Method: Fluorspar

Activity: heat production, softwood chips from forest, at furnace 300kW, state-of-the-art 2014

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020

** Database verified successfully! **

```
*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020 ***
```

```
Duration: 0:25:00 (h:m:s)
```

```
*** Woah woah wee waa, great success!! ***
```

```
** Processing database (20/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025**
```

```
Arguments:
```

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S
```

```
*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025 ***
```

```
* Appending waste and material exchanges in biosphere_T-reX
```

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 17
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 166
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 952 of 952
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
```

163/192

```
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1204 of
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4021 of
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11597 of 11597
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 12
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030 in 0:25:03 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030 in project TreX-premise-SSP2-cutoff **

Score: 0.00e+00
Method: Borates
Activity: treatment of waste polyvinylchloride, open dump, hyperarid infiltration class (-250mm)
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030

Score: -2.52e-12
Method: Palladium
Activity: market for waste polystyrene
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030

** Database verified successfully! **


```
*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030 ***
```

```
Duration: 0:25:21 (h:m:s)
```

```
*** Woah woah wee waa, great success!! ***
```

```
** Processing database (22/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035**
```

```
Arguments:
```

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S
```

```
*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035 ***
```

```
* Appending waste and material exchanges in biosphere_T-reX
```

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 17
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 166
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1302 of 1302
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4021 of 4021
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
```



```
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 1
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11611 of 11611
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 12
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040 in 0:24:54 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040 in project TreX-premise-SSP2-cutoff **

Score: 1.88e+00

Method: Sand

Activity: tillage, hoeing and earthing-up, potatoes

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040

** Database verified successfully! **

```
*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040 ***
```

```
Duration: 0:25:09 (h:m:s)
```

```
*** Woah woah wee waa, great success!! ***
```

```
** Processing database (24/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045**
```

```
Arguments:
```

```
{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S
```

```
*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045 ***
```

```
* Appending waste and material exchanges in biosphere_T-reX
```

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 17
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 166
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
```



```
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11611 of 11611
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 12
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050 in 0:24:59 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050 in project TreX-premise-SSP2-cutoff **

Score: 4.63e-02
Method: Coal(black)
Activity: market for cement, type IP
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050 ***
Duration: 0:25:14 (h:m:s)
*** Woah woah wee waa, great success!! ***

** Processing database (26/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0% Progress: 1555 of 1555
- 8/70 : MaterialFootprint_cerium		100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0% Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0% Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0% Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0% Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0% Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0% Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0% Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0% Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0% Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0% Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0% Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0% Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0% Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0% Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0% Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0% Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0% Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0% Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0% Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon		100.0% Progress: 375 of 375
- 44/70 : MaterialFootprint_silver		100.0% Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium		100.0% Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum		100.0% Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium		100.0% Progress: 2 of 2
- 48/70 : MaterialFootprint_tin		100.0% Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium		100.0% Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten		100.0% Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium		100.0% Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil		100.0% Progress: 37 of 37
- 53/70 : MaterialFootprint_water		100.0% Progress: 11611 of 11611
- 54/70 : MaterialFootprint_zinc		100.0% Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium		100.0% Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram		100.0% Progress: 12 of 12
- 57/70 : WasteFootprint_composting-kilogram		100.0% Progress: 14 of 14

```
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 o
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055 in 0:24:59 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055 in project TreX-premise-SSP2-cutoff **

Score: 1.31e-04

Method: Magnesium

Activity: transport, freight, lorry, battery electric, NMC-622 battery, 7.5t gross weight, 2045, regional delivery

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055 ***

Duration: 0:25:15 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (27/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of :
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 1
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1591 of 1
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 4
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 16
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 1
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
```



```
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11611 of 11611
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 12 of 12
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2 of 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637 of 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of 1712
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53 of 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30 of 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of 84
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of 4695
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of 30759
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060 in 0:24:59 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060 in project TreX-premise-SSP2-cutoff **

Score: 8.02e-05
Method: Titanium
Activity: market group for light fuel oil
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060 ***

Duration: 0:25:20 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (28/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0%	Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0%	Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0%	Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0%	Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0%	Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0%	Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0%	Progress: 1591 of 1591
- 8/70 : MaterialFootprint_cerium		100.0%	Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0%	Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0%	Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0%	Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0%	Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0%	Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0%	Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0%	Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0%	Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0%	Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0%	Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0%	Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0%	Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0%	Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0%	Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0%	Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0%	Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0%	Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0%	Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0%	Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0%	Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0%	Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0%	Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0%	Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0%	Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0%	Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0%	Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0%	Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0%	Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0%	Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0%	Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0%	Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0%	Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0%	Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0%	Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon		100.0%	Progress: 375 of 375
- 44/70 : MaterialFootprint_silver		100.0%	Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium		100.0%	Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum		100.0%	Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium		100.0%	Progress: 2 of 2
- 48/70 : MaterialFootprint_tin		100.0%	Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium		100.0%	Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten		100.0%	Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium		100.0%	Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil		100.0%	Progress: 37 of 37
- 53/70 : MaterialFootprint_water		100.0%	Progress: 11611 of 11611
- 54/70 : MaterialFootprint_zinc		100.0%	Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium		100.0%	Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram		100.0%	Progress: 12 of 12
- 57/70 : WasteFootprint_composting-kilogram		100.0%	Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter		100.0%	Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram		100.0%	Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter		100.0%	Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram		100.0%	Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter		100.0%	Progress: 2 of 2

```
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065 in 0:24:58 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065 in project TreX-premise-SSP2-cutoff **

Score: 4.94e-01
Method: Total (kg)
Activity: transport, freight, lorry, fuel cell electric, 26t gross weight, 2040, long haul
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065 ***

Duration: 0:25:20 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (29/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of :
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 17
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1591 of 1591
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 166
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
```


*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0%	Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0%	Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0%	Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0%	Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0%	Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0%	Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0%	Progress: 1591 of 1591
- 8/70 : MaterialFootprint_cerium		100.0%	Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0%	Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0%	Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0%	Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0%	Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0%	Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0%	Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0%	Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0%	Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0%	Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0%	Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0%	Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0%	Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0%	Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0%	Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0%	Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0%	Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0%	Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0%	Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0%	Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0%	Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0%	Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0%	Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0%	Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0%	Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0%	Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0%	Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0%	Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0%	Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0%	Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0%	Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0%	Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0%	Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0%	Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0%	Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon		100.0%	Progress: 375 of 375
- 44/70 : MaterialFootprint_silver		100.0%	Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium		100.0%	Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum		100.0%	Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium		100.0%	Progress: 2 of 2
- 48/70 : MaterialFootprint_tin		100.0%	Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium		100.0%	Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten		100.0%	Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium		100.0%	Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil		100.0%	Progress: 37 of 37
- 53/70 : MaterialFootprint_water		100.0%	Progress: 11611 of 11611
- 54/70 : MaterialFootprint_zinc		100.0%	Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium		100.0%	Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram		100.0%	Progress: 12 of 12
- 57/70 : WasteFootprint_composting-kilogram		100.0%	Progress: 14 of 14
- 58/70 : WasteFootprint_digestion-cubicmeter		100.0%	Progress: 6 of 6
- 59/70 : WasteFootprint_digestion-kilogram		100.0%	Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter		100.0%	Progress: 30 of 30
- 61/70 : WasteFootprint_hazardous-kilogram		100.0%	Progress: 187 of 187
- 62/70 : WasteFootprint_incineration-cubicmeter		100.0%	Progress: 2 of 2
- 63/70 : WasteFootprint_incineration-kilogram		100.0%	Progress: 2637 of 2637
- 64/70 : WasteFootprint_landfill-cubicmeter		100.0%	Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram		100.0%	Progress: 1712 of 1712
- 66/70 : WasteFootprint_openburning-kilogram		100.0%	Progress: 53 of 53
- 67/70 : WasteFootprint_radioactive-cubicmeter		100.0%	Progress: 30 of 30

```
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075 in 0:25:23 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075 in project TreX-premise-SSP2-cutoff **

Score: 3.20e-06
Method: Indium
Activity: cement production, type S
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075 ***

Duration: 0:25:42 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (31/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 17
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1591 of 1591
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 166
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 35
```

```
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 1
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 c
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 1
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 61
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11611 of 11611
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 12
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 o
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
*****
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080 in 0:24:56 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080 in project TreX-premise-SSP2-cutoff **

Score: 3.35e-05
Method: Copper
Activity: operation, computer, laptop, off mode
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080 ***

Duration: 0:25:12 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (32/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085 ***

* Appending waste and material exchanges in biosphere_T-reX

```
- 1/70 : MaterialFootprint_aluminium | 100.0% | Progress: 2101 of :
```

```
- 2/70 : MaterialFootprint_antimony | 100.0% | Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite | 100.0% | Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium | 100.0% | Progress: 1 of 1
- 5/70 : MaterialFootprint_borates | 100.0% | Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium | 100.0% | Progress: 17 of 1
- 7/70 : MaterialFootprint_cement | 100.0% | Progress: 1591 of 1
- 8/70 : MaterialFootprint_cerium | 100.0% | Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium | 100.0% | Progress: 473 of 4
- 10/70 : MaterialFootprint_coal(black) | 100.0% | Progress: 1738 of
- 11/70 : MaterialFootprint_coal(brown) | 100.0% | Progress: 589 of
- 12/70 : MaterialFootprint_cobalt | 100.0% | Progress: 166 of 16
- 13/70 : MaterialFootprint_coke | 100.0% | Progress: 110 of 110
- 14/70 : MaterialFootprint_copper | 100.0% | Progress: 1244 of 1
- 15/70 : MaterialFootprint_dysprosium | 100.0% | Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity | 100.0% | Progress: 19360 of 1
- 17/70 : MaterialFootprint_erbium | 100.0% | Progress: 1 of 1
- 18/70 : MaterialFootprint_europium | 100.0% | Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar | 100.0% | Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium | 100.0% | Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium | 100.0% | Progress: 4 of 4
- 22/70 : MaterialFootprint_gold | 100.0% | Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite | 100.0% | Progress: 33 of 33
- 24/70 : MaterialFootprint_helium | 100.0% | Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium | 100.0% | Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen | 100.0% | Progress: 1372 of
- 27/70 : MaterialFootprint_indium | 100.0% | Progress: 13 of 13
- 28/70 : MaterialFootprint_latex | 100.0% | Progress: 50 of 50
- 29/70 : MaterialFootprint_lead | 100.0% | Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium | 100.0% | Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium | 100.0% | Progress: 312 o
- 32/70 : MaterialFootprint_natural gas | 100.0% | Progress: 4035 of
- 33/70 : MaterialFootprint_nickel | 100.0% | Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium | 100.0% | Progress: 35 of 3
- 35/70 : MaterialFootprint_petroleum | 100.0% | Progress: 508 of 5
- 36/70 : MaterialFootprint_phosphate rock | 100.0% | Progress: 207 c
- 37/70 : MaterialFootprint_platinum | 100.0% | Progress: 171 of 1
- 38/70 : MaterialFootprint_rare earth | 100.0% | Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium | 100.0% | Progress: 11 of 11
- 40/70 : MaterialFootprint_sand | 100.0% | Progress: 611 of 61
- 41/70 : MaterialFootprint_scandium | 100.0% | Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium | 100.0% | Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon | 100.0% | Progress: 375 of 375
- 44/70 : MaterialFootprint_silver | 100.0% | Progress: 50 of 50
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 45
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 1
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 3
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11611 of 1
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 1
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 12
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 o
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 o
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 c
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 c
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 o
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085 in 0:24:57 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085 in project TreX-premise-SSP2-cutoff **

Score: -1.96e-08

Method: Uranium

Activity: market for sewage sludge, 75% water, WWT, WW from soft fibreboard production

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085 ***

Duration: 0:25:15 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (33/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2090 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0% Progress: 1591 of 1591
- 8/70 : MaterialFootprint_cerium		100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0% Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0% Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0% Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0% Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0% Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0% Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0% Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0% Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0% Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0% Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0% Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0% Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0% Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0% Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0% Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0% Progress: 11 of 11

le:///home/stew/code/qh/T-reX/examples/T-reX_example_terminal_output.html

Score: 1.49e-04
Method: Hazardous (m3)
Activity: Light duty truck, diesel, 3.5t gross weight, 2035, EURO-VI, regional delivery
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2095 ***

Duration: 0:25:26 (h:m:s)

*** Woah woah wee waa, great success!! ***

** Processing database (35/35): ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100**

Arguments:

{'project_base': 'premise-SSP2-cutoff', 'project_T_reX': 'TreX-premise-SSP2-cutoff', 'db_name': 'ecoinvent_cutoff_3.9_remind_S

*** ExchangeEditor() is running for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100 ***

* Appending waste and material exchanges in biosphere_T-reX

- 1/70 : MaterialFootprint_aluminium		100.0% Progress: 2101 of 2101
- 2/70 : MaterialFootprint_antimony		100.0% Progress: 27 of 27
- 3/70 : MaterialFootprint_bauxite		100.0% Progress: 28 of 28
- 4/70 : MaterialFootprint_beryllium		100.0% Progress: 1 of 1
- 5/70 : MaterialFootprint_borates		100.0% Progress: 15 of 15
- 6/70 : MaterialFootprint_cadmium		100.0% Progress: 17 of 17
- 7/70 : MaterialFootprint_cement		100.0% Progress: 1591 of 1591
- 8/70 : MaterialFootprint_cerium		100.0% Progress: 3 of 3
- 9/70 : MaterialFootprint_chromium		100.0% Progress: 473 of 473
- 10/70 : MaterialFootprint_coal(black)		100.0% Progress: 1738 of 1738
- 11/70 : MaterialFootprint_coal(brown)		100.0% Progress: 589 of 589
- 12/70 : MaterialFootprint_cobalt		100.0% Progress: 166 of 166
- 13/70 : MaterialFootprint_coke		100.0% Progress: 110 of 110
- 14/70 : MaterialFootprint_copper		100.0% Progress: 1244 of 1244
- 15/70 : MaterialFootprint_dysprosium		100.0% Progress: 1 of 1
- 16/70 : MaterialFootprint_electricity		100.0% Progress: 19360 of 19360
- 17/70 : MaterialFootprint_erbium		100.0% Progress: 1 of 1
- 18/70 : MaterialFootprint_europium		100.0% Progress: 1 of 1
- 19/70 : MaterialFootprint_fluorspar		100.0% Progress: 29 of 29
- 20/70 : MaterialFootprint_gadolinium		100.0% Progress: 1 of 1
- 21/70 : MaterialFootprint_gallium		100.0% Progress: 4 of 4
- 22/70 : MaterialFootprint_gold		100.0% Progress: 11 of 11
- 23/70 : MaterialFootprint_graphite		100.0% Progress: 33 of 33
- 24/70 : MaterialFootprint_helium		100.0% Progress: 46 of 46
- 25/70 : MaterialFootprint_holmium		100.0% Progress: 1 of 1
- 26/70 : MaterialFootprint_hydrogen		100.0% Progress: 1372 of 1372
- 27/70 : MaterialFootprint_indium		100.0% Progress: 13 of 13
- 28/70 : MaterialFootprint_latex		100.0% Progress: 50 of 50
- 29/70 : MaterialFootprint_lead		100.0% Progress: 260 of 260
- 30/70 : MaterialFootprint_lithium		100.0% Progress: 52 of 52
- 31/70 : MaterialFootprint_magnesium		100.0% Progress: 312 of 312
- 32/70 : MaterialFootprint_natural gas		100.0% Progress: 4035 of 4035
- 33/70 : MaterialFootprint_nickel		100.0% Progress: 436 of 436
- 34/70 : MaterialFootprint_palladium		100.0% Progress: 35 of 35
- 35/70 : MaterialFootprint_petroleum		100.0% Progress: 508 of 508
- 36/70 : MaterialFootprint_phosphate rock		100.0% Progress: 207 of 207
- 37/70 : MaterialFootprint_platinum		100.0% Progress: 171 of 171
- 38/70 : MaterialFootprint_rare earth		100.0% Progress: 37 of 37
- 39/70 : MaterialFootprint_rhodium		100.0% Progress: 11 of 11
- 40/70 : MaterialFootprint_sand		100.0% Progress: 611 of 611
- 41/70 : MaterialFootprint_scandium		100.0% Progress: 1 of 1
- 42/70 : MaterialFootprint_selenium		100.0% Progress: 9 of 9
- 43/70 : MaterialFootprint_silicon		100.0% Progress: 375 of 375
- 44/70 : MaterialFootprint_silver		100.0% Progress: 50 of 50


```
- 45/70 : MaterialFootprint_strontium | 100.0% | Progress: 28 of 28
- 46/70 : MaterialFootprint_tantalum | 100.0% | Progress: 3 of 3
- 47/70 : MaterialFootprint_tellurium | 100.0% | Progress: 2 of 2
- 48/70 : MaterialFootprint_tin | 100.0% | Progress: 124 of 124
- 49/70 : MaterialFootprint_titanium | 100.0% | Progress: 457 of 457
- 50/70 : MaterialFootprint_tungsten | 100.0% | Progress: 5 of 5
- 51/70 : MaterialFootprint_uranium | 100.0% | Progress: 140 of 140
- 52/70 : MaterialFootprint_vegetable oil | 100.0% | Progress: 37 of 37
- 53/70 : MaterialFootprint_water | 100.0% | Progress: 11611 of 11611
- 54/70 : MaterialFootprint_zinc | 100.0% | Progress: 670 of 670
- 55/70 : MaterialFootprint_zirconium | 100.0% | Progress: 11 of 11
- 56/70 : WasteFootprint_carbondioxide-kilogram | 100.0% | Progress: 12
- 57/70 : WasteFootprint_composting-kilogram | 100.0% | Progress: 14
- 58/70 : WasteFootprint_digestion-cubicmeter | 100.0% | Progress: 6
- 59/70 : WasteFootprint_digestion-kilogram | 100.0% | Progress: 4 of 4
- 60/70 : WasteFootprint_hazardous-cubicmeter | 100.0% | Progress: 30
- 61/70 : WasteFootprint_hazardous-kilogram | 100.0% | Progress: 187
- 62/70 : WasteFootprint_incineration-cubicmeter | 100.0% | Progress: 2
- 63/70 : WasteFootprint_incineration-kilogram | 100.0% | Progress: 2637
- 64/70 : WasteFootprint_landfill-cubicmeter | 100.0% | Progress: 2 of 2
- 65/70 : WasteFootprint_landfill-kilogram | 100.0% | Progress: 1712 of 1712
- 66/70 : WasteFootprint_openburning-kilogram | 100.0% | Progress: 53
- 67/70 : WasteFootprint_radioactive-cubicmeter | 100.0% | Progress: 30
- 68/70 : WasteFootprint_recycling-kilogram | 100.0% | Progress: 84 of 84
- 69/70 : WasteFootprint_total-cubicmeter | 100.0% | Progress: 4695 of 4695
- 70/70 : WasteFootprint_total-kilogram | 100.0% | Progress: 30759 of 30759
```

*** ExchangeEditor() completed for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100 in 0:25:00 (h:m:s) ***

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100 in project TreX-premise-SSP2-cutoff **

Score: 8.09e-05

Method: Gallium

Activity: Heavy duty truck, compressed gas, 40t gross weight, 2045, EURO-VI, regional delivery

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100

** Database verified successfully! **

*** Finished T-reX for ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2100 ***

Duration: 0:25:21 (h:m:s)

*** Woah woah wee waa, great success!! ***

*** Verifying all databases in the project **

** Verifying database ecoinvent-3.9.1-cutoff in project TreX-premise-SSP2-cutoff **

Score: 1.50e-09

Method: Gallium

Activity: photovoltaic slanted-roof installation, 3kWp, multi-Si, panel, mounted, on roof

Database: ecoinvent-3.9.1-cutoff

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2020 in project TreX-premise-SSP2-cutoff **

Score: 7.75e-09

Method: Hazardous (m3)

Activity: market for sodium chloride, brine solution

Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2020

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2025 in project TreX-premise-SSP2-cutoff **

Score: 3.19e-10
Method: Gallium
Activity: electricity voltage transformation from medium to low voltage
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2025

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2030 in project TreX-premise-SSP2-cutoff **

Score: 3.34e+03
Method: Electricity
Activity: Passenger car, gasoline, Lower medium, 2020, EURO-6d
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2030

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2035 in project TreX-premise-SSP2-cutoff **

Score: 4.17e+07
Method: Coke
Activity: mine construction, gold
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2035

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2040 in project TreX-premise-SSP2-cutoff **

Score: 2.36e-06
Method: Platinum
Activity: electricity, high voltage, production mix
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2040

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2045 in project TreX-premise-SSP2-cutoff **

Score: 3.81e-03
Method: Recycling (kg)
Activity: transport, passenger car, fuel cell electric, Van, 2040
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2045

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2050 in project TreX-premise-SSP2-cutoff **

Score: 6.99e-06
Method: Titanium
Activity: market for electricity, low voltage
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2050

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2055 in project TreX-premise-SSP2-cutoff **

Score: 2.34e-08
Method: Chromium
Activity: nitric acid production, product in 50% solution state
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2055

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2060 in project TreX-premise-SSP2-cutoff **

Score: 4.37e-07
Method: Vegetable oil
Activity: transport, passenger car, compressed gas, Medium SUV, 2045, EURO-6d
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2060

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2065 in project TreX-premise-SSP2-cutoff **

Score: 0.00e+00
Method: Digestion (m3)
Activity: market for wood chips, dry, measured as dry mass
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2065

Score: -4.98e-17
Method: Europium
Activity: blower and heat exchange unit production, KWL 250
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2065

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2070 in project TreX-premise-SSP2-cutoff **

Score: 0.00e+00
Method: Beryllium
Activity: heat production, hardwood chips from forest, at furnace 300kW, state-of-the-art 2014
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2070

Score: 2.25e-11
Method: Selenium
Activity: transport, passenger car, gasoline, Large, 2040, EURO-6d
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2070

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2075 in project TreX-premise-SSP2-cutoff **

Score: 2.32e-21
Method: Holmium
Activity: electricity production, oil
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2075

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2080 in project TreX-premise-SSP2-cutoff **

Score: 4.91e-05
Method: Total (m3)
Activity: market for cement, ZN/D, new alternative constituents 36-50%, in conformity with SIA 2049
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2080

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2085 in project TreX-premise-SSP2-cutoff **

Score: 2.93e-02
Method: Carbondioxide (kg)
Activity: transport, passenger car, EURO 5
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2085

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2090 in project TreX-premise-SSP2-cutoff **

Score: 2.61e-05
Method: Lead
Activity: petroleum and gas production, offshore
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2090

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2095 in project TreX-premise-SSP2-cutoff **

Score: 2.94e-12
Method: Cobalt
Activity: water production, decarbonised
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2095

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-Base_2100 in project TreX-premise-SSP2-cutoff **

Score: 1.43e-15
Method: Landfill (m3)
Activity: gypsum quarry operation
Database: ecoinvent_cutoff_3.9_remind_SSP2-Base_2100

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020 in project TreX-premise-SSP2-cutoff **

Score: 1.99e-05
Method: Fluorspar
Activity: transport, freight, lorry, diesel, 7.5t gross weight, 2010, EURO-V, regional delivery
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2020

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025 in project TreX-premise-SSP2-cutoff **

Score: 0.00e+00
Method: Digestion (m3)
Activity: heat and power co-generation, natural gas, conventional power plant, 100MW electrical
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025

Score: -2.76e-21
Method: Erbium
Activity: transport, passenger car, plugin diesel hybrid, Medium, 2025, EURO-6d
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2025

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030 in project TreX-premise-SSP2-cutoff **

Score: 0.00e+00
Method: Indium
Activity: cement production, CEM II/A-V
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030

Score: 5.56e-03
Method: Bauxite
Activity: transport, passenger car, plugin gasoline hybrid, Van, 2015, EURO-6ab
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2030

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035 in project TreX-premise-SSP2-cutoff **

Score: 1.30e-01
Method: Total (kg)
Activity: market for electricity, high voltage
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2035

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040 in project TreX-premise-SSP2-cutoff **

Score: -1.97e-06
Method: Nickel
Activity: treatment of blast furnace gas, in power plant
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2040

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045 in project TreX-premise-SSP2-cutoff **

Score: 1.72e-11
Method: Landfill (m3)
Activity: hydrogen production, steam methane reforming, from biomethane, high and low temperature, 26 bar
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2045

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050 in project TreX-premise-SSP2-cutoff **

Score: 0.00e+00
Method: Tungsten
Activity: ethanol, from forest residue, system expansion, at fuelling station
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050

Score: 9.27e-05
Method: Lithium
Activity: market for cocamide diethanolamine
Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2050

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055 in project TreX-premise-SSP2-cutoff **

Score: 2.54e-06

Method: Platinum

Activity: heat production, hardwood chips from forest, at furnace 50kW, state-of-the-art 2014

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2055

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060 in project TreX-premise-SSP2-cutoff **

Score: 2.70e-02

Method: Tantalum

Activity: Light duty truck, diesel hybrid, 3.5t gross weight, 2045, EURO-VI, regional delivery

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2060

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065 in project TreX-premise-SSP2-cutoff **

Score: 0.00e+00

Method: Digestion (m3)

Activity: unreinforced concrete production, 15MPa, with cement, CEM II/B

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065

Score: -7.56e-03

Method: Nickel

Activity: market for petrol, unleaded

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2065

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070 in project TreX-premise-SSP2-cutoff **

Score: 1.06e+00

Method: Electricity

Activity: silicon production, multi-Si, casted

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2070

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075 in project TreX-premise-SSP2-cutoff **

Score: 7.02e-08

Method: Strontium

Activity: cement production, Pozzolana Portland

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2075

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080 in project TreX-premise-SSP2-cutoff **

Score: 3.68e-09

Method: Incineration (m3)

Activity: land use change, perennial crop

Database: ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2080

** Verifying database ecoinvent_cutoff_3.9_remind_SSP2-PkBudg500_2085 in project TreX-premise-SSP2-cutoff **

Score: 3.59e-02

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