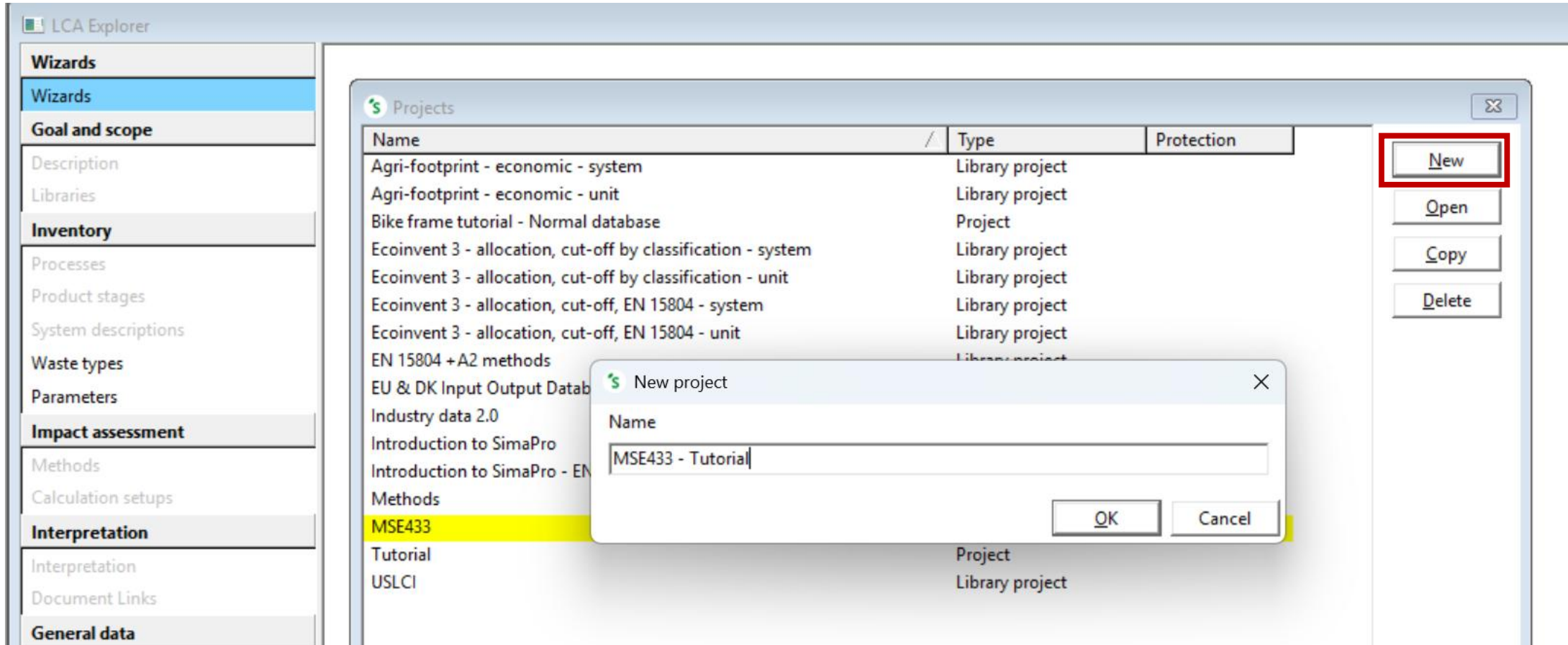


MSE 433 - SimaPro tutorial

Open SimaPro and create a new project



Select the libraries to use in the project

LCA Explorer

Wizards

Wizards

Goal and scope

Description

Libraries

Inventory

Processes

Product stages

System descriptions

Waste types

Selected	Name	Protection
<input type="checkbox"/>	Agri-footprint - economic - system	
<input type="checkbox"/>	Agri-footprint - economic - unit	
<input checked="" type="checkbox"/>	Ecoinvent 3 - allocation, cut-off by classification - system	
<input checked="" type="checkbox"/>	Ecoinvent 3 - allocation, cut-off by classification - unit	
<input type="checkbox"/>	Ecoinvent 3 - allocation, cut-off, EN 15804 - system	
<input type="checkbox"/>	Ecoinvent 3 - allocation, cut-off, EN 15804 - unit	
<input type="checkbox"/>	EN 15804 + A2 methods	
<input type="checkbox"/>	EU & DK Input Output Database	
<input checked="" type="checkbox"/>	Industry data 2.0	
<input checked="" type="checkbox"/>	Methods	
<input type="checkbox"/>	USLCI	

These 2 are the basic libraries

Make sure to always include **Methods** to avoid problems when modelling the impacts!

Create a new product and give it a name

The screenshot shows the LCA Explorer software interface. On the left, a sidebar contains a list of categories: Wizards, Goal and scope, Description, Libraries, Inventory, Processes, Product stages (highlighted with a blue bar and a blue arrow), System descriptions, Waste types, Parameters, Impact assessment, Methods, Calculation setups, Interpretation, Document Links, General data, Literature references, Substances, and Units. The 'Product stages' section is expanded, showing 'Assembly' and 'Others' (highlighted with a blue box). The main window displays the 'New assembly' dialog box. The 'Name' field is highlighted with a red box and contains the text 'MSE 433 Tutorial'. The 'Status' field is set to 'None'. The 'Materials/Assemblies' and 'Processes' sections are highlighted with a green box. The 'Processes' section has an 'Add line' button highlighted with a green arrow. A text box with a green arrow pointing to the 'Add line' button contains the text: 'This is where you indicate the material and process inputs for that specific product'. On the right side of the dialog box, there is a 'New' button highlighted with a red box, and other buttons: Edit, View, Copy, Delete, and Used by. A checkbox labeled 'Show as list' is also present.

We now add 1.7 kg of Aluminium alloy

Double click on **Add line** underneath the **Materials/Assemblies** box and find the Aluminium we need for this tutorial

Select a material process or an assembly

Assemblies and material

- Assembly
- Material
 - Agricultural
 - Appliances
 - Chemicals
 - Construction
 - Electronics
 - Electronics waste
 - Fuels
 - Glass
 - Metals
 - Alloys
 - Market
 - Transform**
 - Infrast
 - Extraction
 - Ferro

Name	Un
Aluminium alloy, ALi {CA-QC} aluminium alloy production, ALi Cut-off, S	kg
Aluminium alloy, ALi {CA-QC} aluminium alloy production, ALi Cut-off, U	kg
Aluminium alloy, ALi {RoW} aluminium alloy production, ALi Cut-off, S	kg
Aluminium alloy, ALi {RoW} aluminium alloy production, ALi Cut-off, U	kg
Aluminium alloy, AlMg3 {RER} aluminium alloy production, AlMg3 Cut-off, S	kg
Aluminium alloy, AlMg3 {RER} aluminium alloy production, AlMg3 Cut-off, U	kg
Aluminium alloy, AlMg3 {RoW} aluminium alloy production, AlMg3 Cut-off, S	kg
Aluminium alloy, AlMg3 {RoW} aluminium alloy production, AlMg3 Cut-off, U	kg
Aluminium alloy, metal matrix composite {CA-QC} aluminium alloy production, Metallic Matrix Composite Cu	kg
Aluminium alloy, metal matrix composite {CA-QC} aluminium alloy production, Metallic Matrix Composite Cu	kg
Aluminium alloy, metal matrix composite {RoW} aluminium alloy production, Metallic Matrix Composite Cut-off	kg
Aluminium alloy, metal matrix composite {RoW} aluminium alloy production, Metallic Matrix Composite Cut-off	kg
Aluminium around steel bi-metal stranded cable, 3x3.67mm external diameter wire {CA-QC} aluminium around	m
Aluminium around steel bi-metal stranded cable, 3x3.67mm external diameter wire {CA-QC} aluminium around	m
Aluminium around steel bi-metal stranded cable, 3x3.67mm external diameter wire {RoW} aluminium around	m

S: System, U: Unit
Pick U when selecting the materials, it can be changed when calculating the impact

This dataset represents the manufacturing of aluminium alloyed billets and ingots. Aluminum scrap of the same alloy is used as the main aluminium bearing input. Aluminium scrap from external source accounts for 60% of secondary aluminium in final product, while 40% of secondary aluminium is from internal sources (remelting of internal scrap in closed loop - accounted in the primary aluminium input). Primary aluminium slab is used as aluminium input up to 30%. Aluminium losses, through blast furnace slag, are accounted for. Aluminum based alloys, metal powder and pure metals are added to obtain desired alloy composition. Final product is cast by direct chilled vertical casting. This alloy is mainly used in the aeronautic sector. This dataset is based on data from the one facility in Quebec region.

Filter on and ☐ or ☐ Clear 68

22745 items 1 item selected

Market: Includes transport from producers to consumers

Transformation: Excludes transport from producers to consumers

Add the amount of Aluminium needed

Name	Status	Comment			
MSE 433 Tutorial	None				

Materials/Assemblies	Amount	Unit	Distribution	SD2 or 2SD	Min
Aluminium alloy, ALi {RoW} aluminium alloy production, ALi Cut-off, U	1.7	kg	Undefined		
Add line					

We want to add Processes, Transportation, Energy...

■ MSE 433 - SimaPro tutorial

- Processing:** Metal working, average for aluminium product manufacturing {GLO}| market for metal working, average for aluminium product manufacturing | Cut-off, U
- Transportation:** Transport, freight, lorry >32 metric ton, EURO6 {RER}| market for transport, freight, lorry >32 metric ton, EURO6 | Cut-off, U
- Electricity:** Electricity, medium voltage {CH}| market for electricity, medium voltage | Cut-off, U
- Heat:** Heat, central or small-scale, other than natural gas {CH}| heat production, light fuel oil, at boiler 10kW condensing, non-modulating | Cut-off, U

Selecting the processing of the aluminium

Select a process

- Processes
 - Energy
 - Transport
 - Processing
 - Agricultural
 - Cardboard
 - Compressed air
 - Electronics
 - Energy reduction
 - Ferro
 - Glass
 - Land transformation
 - Metals
 - Chipless shaping
 - Chipping
 - Coating
 - Metal working
 - Market**
 - Infrastruc
 - Transformati
 - Welding
 - Non ferro
 - Others
 - Paper
 - Plastics
 - Power plants
 - Textiles
 - Ventilation
 - Waste
 - Wood
 - Use

Name	Un
Degreasing, metal part in alkaline bath {GLO} market for degreasing, metal part in alkaline bath Cut-off, S	m ²
Degreasing, metal part in alkaline bath {GLO} market for degreasing, metal part in alkaline bath Cut-off, U	m ²
Energy and auxilliary inputs, metal working factory {RER} market for energy and auxilliary inputs, metal working	kg
Energy and auxilliary inputs, metal working factory {RER} market for energy and auxilliary inputs, metal working	kg
Energy and auxilliary inputs, metal working factory {RoW} market for energy and auxilliary inputs, metal working	kg
Energy and auxilliary inputs, metal working factory {RoW} market for energy and auxilliary inputs, metal working	kg
Energy and auxilliary inputs, metal working machine {RER} market for energy and auxilliary inputs, metal workin	kg
Energy and auxilliary inputs, metal working machine {RER} market for energy and auxilliary inputs, metal workin	kg
Energy and auxilliary inputs, metal working machine {RoW} market for energy and auxilliary inputs, metal workir	kg
Energy and auxilliary inputs, metal working machine {RoW} market for energy and auxilliary inputs, metal workir	kg
Metal working, average for aluminium product manufacturing {GLO} market for metal working, average for alu	kg
Metal working, average for aluminium product manufacturing {GLO} market for metal working, average for alu	kg
Metal working, average for chromium steel product manufacturing {GLO} market for metal working, average fo	kg
Metal working, average for chromium steel product manufacturing {GLO} market for metal working, average fo	kg
Metal working, average for copper product manufacturing {GLO} market for metal working, average for copper	kg
Metal working, average for copper product manufacturing {GLO} market for metal working, average for copper	kg
Metal working, average for metal product manufacturing {GLO} market for metal working, average for metal pr	kg
Metal working, average for metal product manufacturing {GLO} market for metal working, average for metal pr	kg
Metal working, average for metal product manufacturing {GLO} market for metal working, average for metal pr	kg
Metal working, average for steel product manufacturing {GLO} market for metal working, average for steel prod	kg
Metal working, average for steel product manufacturing {GLO} market for metal working, average for steel prod	kg

This is a market activity. Each market represents the consumption mix of a product in a given geography, connecting suppliers with consumers of the same product in the same geographical area. Markets group the producers and also the imports of the product (if relevant) within the same geographical area. They also account for transport to the consumer and for the losses during that process, when relevant.

This is the market for 'metal working, average for aluminium product manufacturing', in the Global geography.

Transport from producers to consumers of this product in the geography covered by the market is included.

Filter on and ☐ or ☐ Clear 20

20931 items 1 item selected

Select New View Find Cancel Show as list

Selecting the transportation

Select a process

Processes

- Energy
- Transport
- Air
- Building equipment
- Electricity
- Intermodal
- Others
- Pipeline
- Rail
- Road
- Market
- Infrastructure
- Transformation
- Water
- Processing
- Use

Name	Un
Transport, freight, lorry > 32 metric ton, EURO2 {ZA} market for transport, freight, lorry > 32 metric ton, EURO2	tkr
Transport, freight, lorry > 32 metric ton, EURO2 {ZA} market for transport, freight, lorry > 32 metric ton, EURO2	tkr
Transport, freight, lorry > 32 metric ton, EURO3 {BR} market for transport, freight, lorry > 32 metric ton, EURO3	tkr
Transport, freight, lorry > 32 metric ton, EURO3 {BR} market for transport, freight, lorry > 32 metric ton, EURO3	tkr
Transport, freight, lorry > 32 metric ton, EURO3 {RER} market for transport, freight, lorry > 32 metric ton, EURO3	tkr
Transport, freight, lorry > 32 metric ton, EURO3 {RER} market for transport, freight, lorry > 32 metric ton, EURO3	tkr
Transport, freight, lorry > 32 metric ton, EURO3 {RoW} market for transport, freight, lorry > 32 metric ton, EURO3	tkr
Transport, freight, lorry > 32 metric ton, EURO3 {RoW} market for transport, freight, lorry > 32 metric ton, EURO3	tkr
Transport, freight, lorry > 32 metric ton, EURO4 {RER} market for transport, freight, lorry > 32 metric ton, EURO4	tkr
Transport, freight, lorry > 32 metric ton, EURO4 {RER} market for transport, freight, lorry > 32 metric ton, EURO4	tkr
Transport, freight, lorry > 32 metric ton, EURO4 {RoW} market for transport, freight, lorry > 32 metric ton, EURO4	tkr
Transport, freight, lorry > 32 metric ton, EURO4 {RoW} market for transport, freight, lorry > 32 metric ton, EURO4	tkr
Transport, freight, lorry > 32 metric ton, EURO5 {BR} market for transport, freight, lorry > 32 metric ton, EURO5	tkr
Transport, freight, lorry > 32 metric ton, EURO5 {BR} market for transport, freight, lorry > 32 metric ton, EURO5	tkr
Transport, freight, lorry > 32 metric ton, EURO5 {RER} market for transport, freight, lorry > 32 metric ton, EURO5	tkr
Transport, freight, lorry > 32 metric ton, EURO5 {RER} market for transport, freight, lorry > 32 metric ton, EURO5	tkr
Transport, freight, lorry > 32 metric ton, EURO5 {RoW} market for transport, freight, lorry > 32 metric ton, EURO5	tkr
Transport, freight, lorry > 32 metric ton, EURO5 {RoW} market for transport, freight, lorry > 32 metric ton, EURO5	tkr
Transport, freight, lorry > 32 metric ton, EURO6 {RER} market for transport, freight, lorry > 32 metric ton, EURO6	tkr
Transport, freight, lorry > 32 metric ton, EURO6 {RER} market for transport, freight, lorry > 32 metric ton, EURO6	tkr

Select

New

View

Find

Cancel

☒ Show as list

This is a market activity. Each market represents the consumption mix of a product in a given geography, connecting suppliers with consumers of the same product in the same geographical area. Markets group the producers and also the imports of the product (if relevant) within the same geographical area. They also account for transport to the consumer and for the losses during that process, when relevant.

This is the market for 'transport, freight, lorry > 32 metric ton, EURO6', in the geography of Europe.

This market contains no transport or losses, as they are irrelevant for the delivered product.

Filter on and ☐ or ☐ Clear 406

20931 items 1 item selected

You can use the **filter on** option to help

Select a process

Processes

- Energy
 - Cogeneration
 - Electricity by fuel
 - Electricity country market
 - High Voltage
 - Low Voltage
 - Low Voltage + interconnector
 - Medium Voltage
 - Market
 - Transformation
 - Heat
 - Mechanical
 - Others
- Transport
- Processing
- Use

Name

Electricity, medium voltage (CH) electricity, medium voltage, municipal waste incineration, import from Germany
Electricity, medium voltage (CH) electricity, medium voltage, municipal waste incineration, import from Germany
Electricity, medium voltage (CH) market for electricity, medium voltage Cut-off, S
Electricity, medium voltage (CH) market for electricity, medium voltage Cut-off, U
Electricity, medium voltage, aluminium industry (IAI Area, Asia, without China and GCC) market for electricity
Electricity, medium voltage, aluminium industry (IAI Area, Asia, without China and GCC) market for electricity
Electricity, medium voltage, renewable energy products (CH) market for electricity, medium voltage, renewable
Electricity, medium voltage, renewable energy products (CH) market for electricity, medium voltage, renewable

Select

New

View

Find

Cancel

☐ Show as list

This dataset represents the amount of imported electricity generated from wastes, from DE to CH. The import volume is defined directly in the Swiss market mix, this is in the dataset market for electricity, medium voltage, CH. It is therefore set to zero in this dataset.

For a discussion of different ways of modeling electricity trade in LCI, please refer to (Itten & Frischknecht 2012).

Production volume: 0 kWh

Filter on ☒ and ☐ or Clear Filtered 8 of 410

20931 items 1 item selected

Select a process

Processes

- Energy
 - Cogeneration
 - Electricity by fuel
 - Electricity country n
 - Heat
 - Coal
 - Gas
 - Heat pump
 - Lignite
 - Oil
 - Market
 - Transformati
 - Others
 - Solar
 - Steam
 - Waste
 - Wood
 - Mechanical
 - Others
 - Transport
 - Processing
 - Use

Name

Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 100kW co
Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 100kW co
Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 100kW, nc
Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 100kW, nc
Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 10kW con
Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 10kW con
Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 10kW, nor
Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 10kW, nor
Heat, central or small-scale, other than natural gas {Europe without Switzerland} heat production, light fue
Heat, central or small-scale, other than natural gas {Europe without Switzerland} heat production, light fue
Heat, central or small-scale, other than natural gas {Europe without Switzerland} heat production, light fue
Heat, central or small-scale, other than natural gas {Europe without Switzerland} heat production, light fue
Heat, central or small-scale, other than natural gas {Europe without Switzerland} heat production, light fue
Heat, central or small-scale, other than natural gas {Europe without Switzerland} heat production, light fue
Heat, central or small-scale, other than natural gas {Europe without Switzerland} heat production, light fue
Heat, central or small-scale, other than natural gas {Europe without Switzerland} heat production, light fue
Heat, central or small-scale, other than natural gas {RoW} heat production, light fuel oil, at boiler 100kW c
Heat, central or small-scale, other than natural gas {RoW} heat production, light fuel oil, at boiler 100kW c
Heat, central or small-scale, other than natural gas {RoW} heat production, light fuel oil, at boiler 100kW, r
Heat, central or small-scale, other than natural gas {RoW} heat production, light fuel oil, at boiler 100kW, r

Select **New** **View** **Find** **Cancel**

☐ Show as list

Inventory for the operation of a light fuel oil boiler. Data related to input.

[This dataset was already contained in the ecoinvent database version 2. It was not individually updated during the transfer to ecoinvent version 3. Life Cycle Impact Assessment results may still have changed, as they are affected by changes in the supply chain, i.e. in other datasets. This dataset was generated following the ecoinvent quality guidelines for version 2. It may have been subject to central changes described in the ecoinvent version 3 change report (<http://www.ecoinvent.org/database/ecoinvent-version-3/reports-of-changes/>), and the results of the central updates were reviewed extensively. The

Filter on and ☐ or ☐ **Clear** 130

20931 items 1 item selected

Now we are ready to calculate the impacts

Name	Status	Comment
MSE 433 Tutorial	None	

Materials/Assemblies	Amount	Unit	Distribution	SD2 or 2SD	Min	Max	Comment
Aluminium alloy, AILi {RoW} aluminium alloy production, AILi Cut-off, U	1.7	kg	Undefined				
Add line							

Processes	Amount	Unit	Distribution	SD2 or 2SD	Min	Max	Comment
Metal working, average for aluminium product manufacturing {GLO} market for metal working, average for aluminium pro	1.7	kg	Undefined				We assume no waste produced
Transport, freight, lorry >32 metric ton, EURO6 {RER} market for transport, freight, lorry >32 metric ton, EURO6 Cut-off, U	$1.7/1000*10000 = 17$	tkm					
Electricity, medium voltage {CH} market for electricity, medium voltage Cut-off, U	30	kWh	Undefined				Assuming production in Switzerland
Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 10kW condensing, non-mor	15	MJ	Undefined				
Add line							

Image

It can be helpful to add comments

It is possible to add the amount using formulas

Remember to **save** to avoid losing your work!!

A+B
=

D+A
42

Input/output

Parameters

Name

MSE 433 Tutorial

Status

None

Comment

Materials/Assemblies

	Amount	Unit	Distribution	SD2 or 2SD	Min	Max	Comment
Aluminium alloy, AILi {RoW} aluminium alloy production, AILi Cut-off, U	1.7	kg	Undefined				
Add line							

Processes

	Amount	Unit	Distribution	SD2 or 2SD	Min	Max	Comment
Metal working, average for aluminium product manufacturing {GLO} market for metal working, average for aluminium pro	1.7	kg	Undefined				We assume no waste produced
Transport, freight, lorry >32 metric ton, EURO6 {RER} market for transport, freight, lorry >32 metric ton, EURO6 Cut-off, U	1.7/1000*10000 = 17	tkm					
Electricity, medium voltage {CH} market for electricity, medium voltage Cut-off, U	30	kWh	Undefined				Assuming production in Switzerland
Heat, central or small-scale, other than natural gas {CH} heat production, light fuel oil, at boiler 10kW condensing, non-mo	15	MJ	Undefined				
Add line							

Image

Give it a name, select the method, switch to system (if needed) and start the calculation

Name
MSE 433 - Tutorial

Comment

Calculation function

☐ Network
☒ Tree
☐ Analyse
☐ Compare
☐ Uncertainty analysis

Method
ReCiPe 2016 Endpoint (H) V1.09 / World (2010) H/A

Product	Amount	Unit	Project	Comment
MSE 433 Tutorial	1	p	MSE433 - Tutorial	

Current library

	Suffix
Ecoinvent 3 - allocation, cut-off by classification - unit	Cut-off, U
Replacing library	Suffix
Ecoinvent 3 - allocation, cut-off by classification - system	Cut-off, S

Switches

☐ Inventory per sub-compartment
☐ Exclude infrastructure processes
☐ Exclude long-term emissions

Monte Carlo stop criterion

☒ Fixed number of runs 1000
☐ Use stop factor 0.005 Value Inventory result (Air/(unspecified)/Water/m3, CN-ECGC)
☐ Seed value 0

Help Calculate Close

You can easily switch from Unit to System for a quicker calculation time

Selection of method

Select a method and a normalization/weighting set

Methods

- European
- Global**
- North American
- Others
- Single issue
- Superseded
- Water footprint

Name	Version /	Project
LC-IMPACT marginal pref. all imp. 10	1.03	Methods
LC-IMPACT marginal pref. all imp. ir	1.03	Methods
LC-IMPACT marginal pref. certain im	1.03	Methods
LC-IMPACT marginal pref. certain im	1.03	Methods
IMPACT World+ Endpoint	1.04	Methods
IMPACT World+ Midpoint	1.04	Methods
ReCiPe 2016 Endpoint (E)	1.09	Methods
ReCiPe 2016 Endpoint (H)	1.09	Methods
ReCiPe 2016 Endpoint (I)	1.09	Methods
ReCiPe 2016 Midpoint (E)	1.09	Methods
ReCiPe 2016 Midpoint (H)	1.09	Methods

Normalisation/Weighting /

- World (2010) H/A**
- World (2010) H/H
- World (2010) H/Official

ReCiPe 2016 v1.1 endpoint, Hierarchist perspective

=====

This is the default ReCiPe endpoint method.

The ReCiPe 2016 method is a new version of ReCiPe 2008, created by RIVM, Radboud University, Norwegian University of Science and Technology and PRé Sustainability. Due to significant methodological differences, the results of ReCiPe 2008 and ReCiPe 2016 cannot and should not be compared. In ReCiPe you can choose to use midpoint indicators or endpoint indicators. Each method has been created for three different perspectives. The

Select

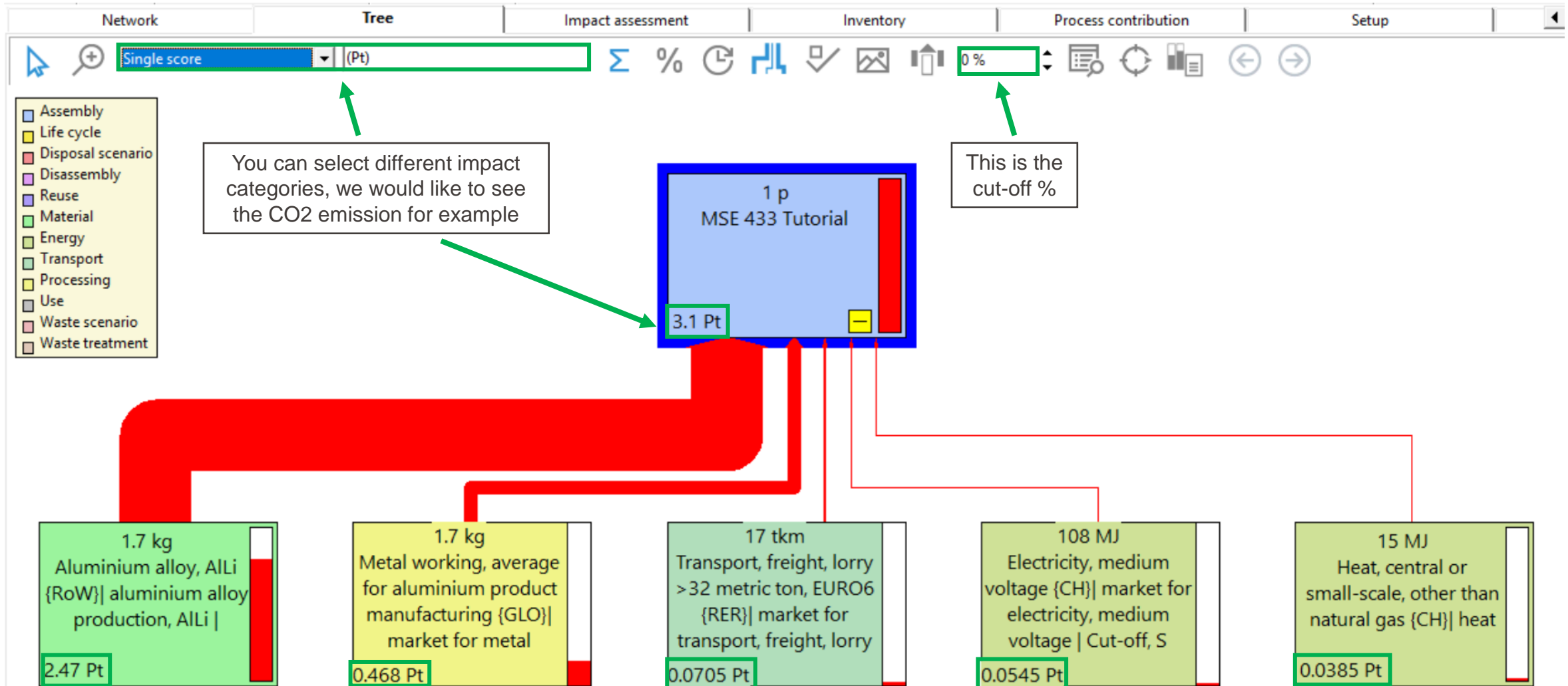
View

Find

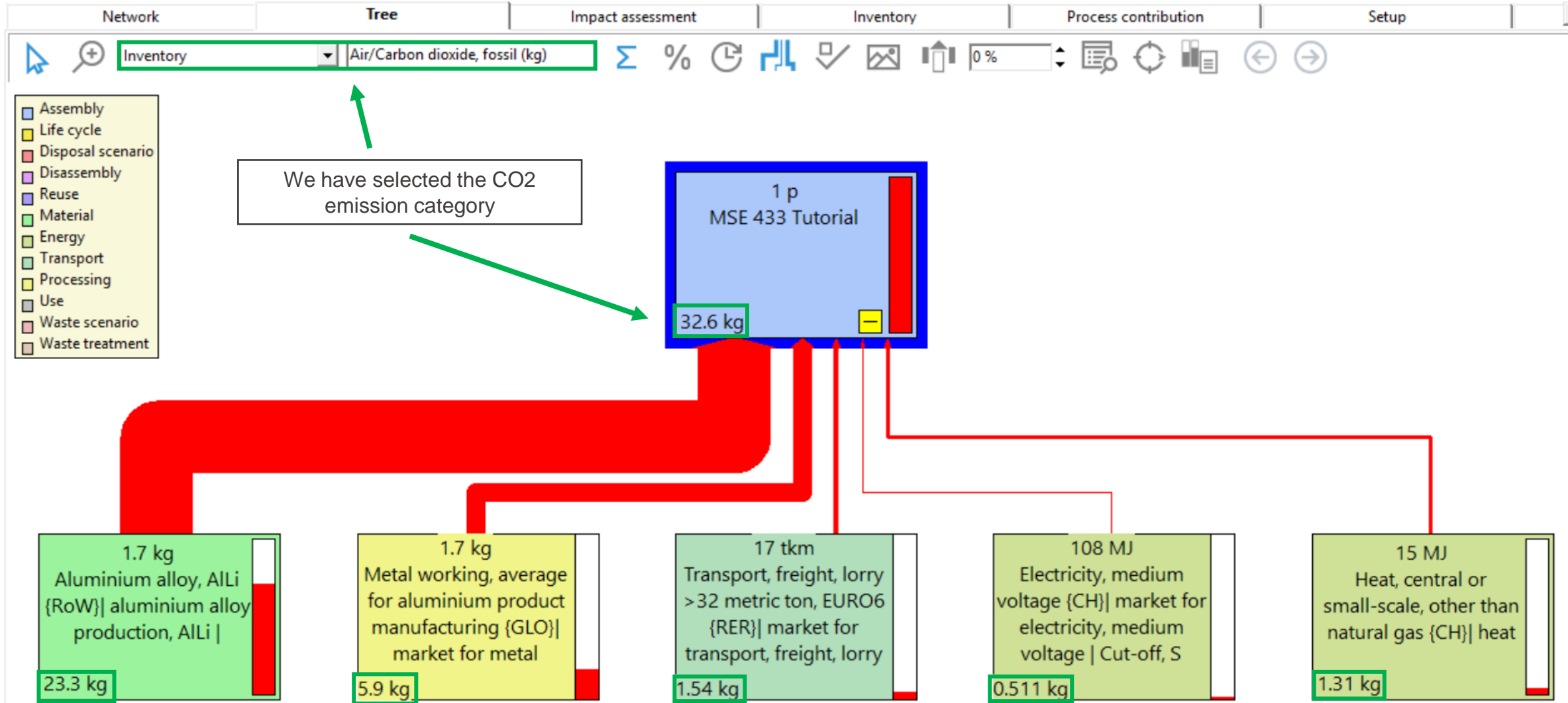
Cancel

106 items

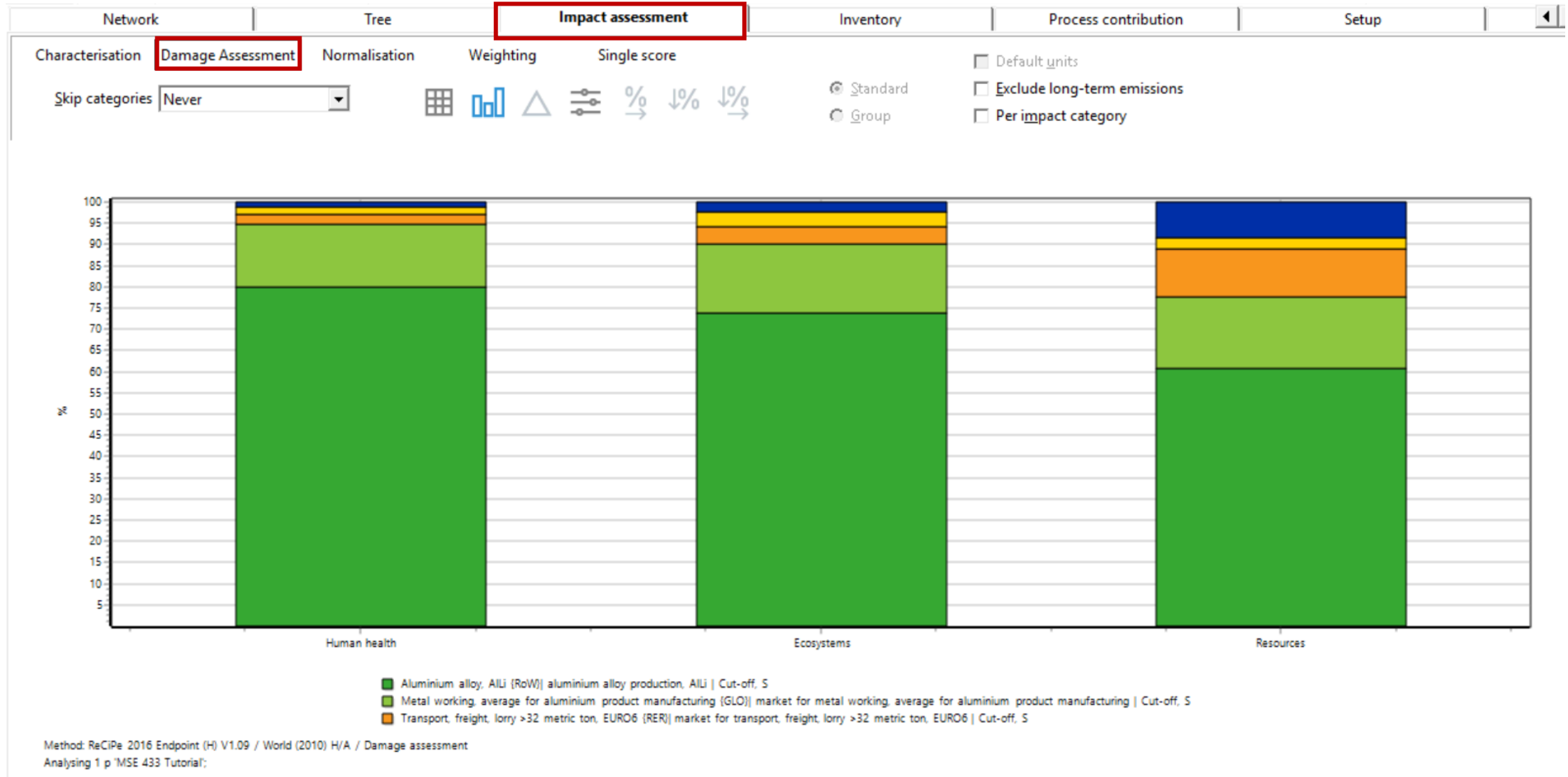
1 item selected



The CO₂ (not kgCO₂e) tree for the same product







Characterisation

Damage Assessment

Normalisation

Weighting

Single score

Skip categories

Never

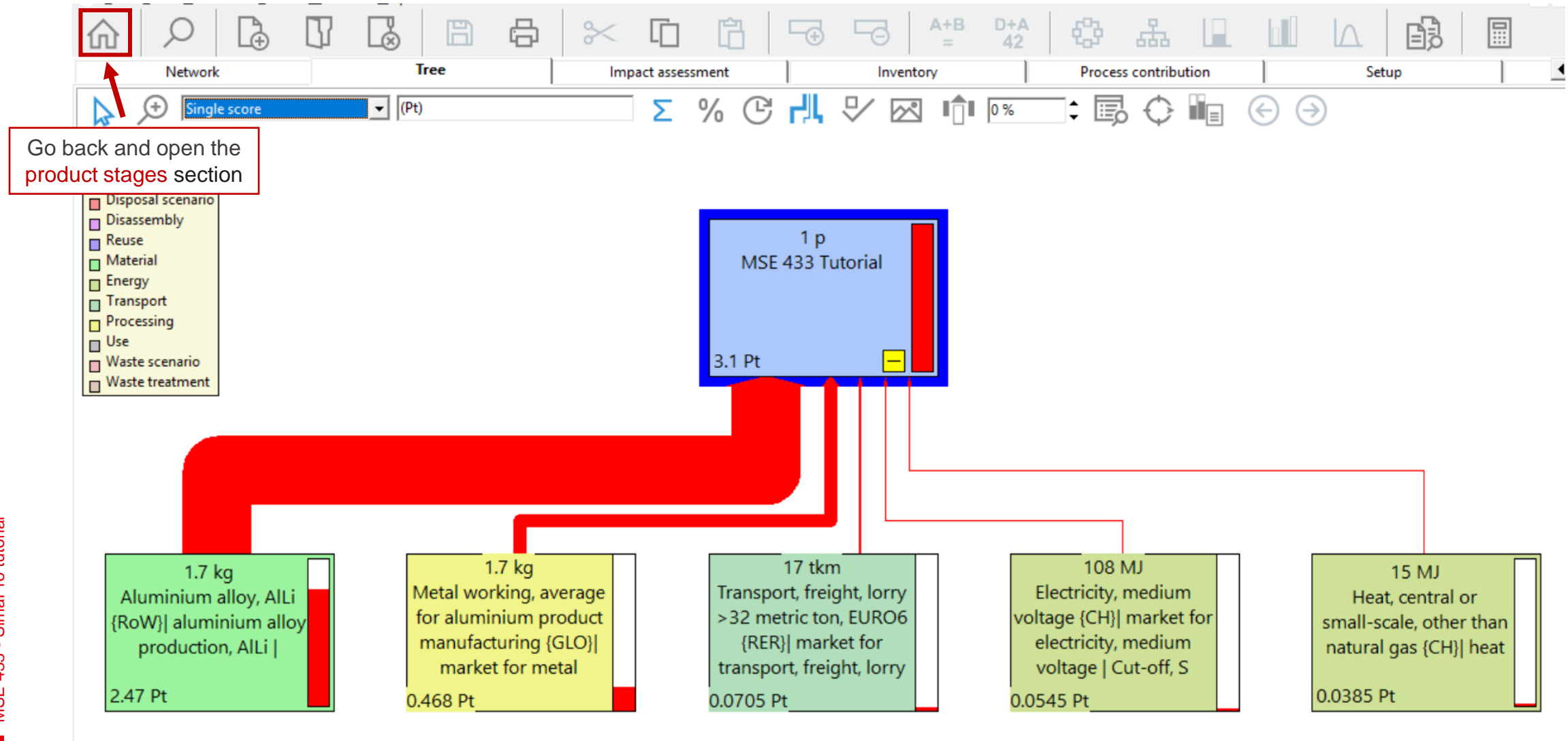
Standard

Group

☐ Default units
 ☐ Exclude long-term emissions
 ☐ Per impact category

Se	Damage category	Unit	Total	Aluminium alloy, ALi	Metal working, average for	Transport, freight, lorry > 32	Electricity, medium voltage	Heat, central or small-scale,
<input checked="" type="checkbox"/>	Human health	DALY	0.000181	0.000145	2.74E-5	3.98E-6	3.13E-6	2.15E-6
<input checked="" type="checkbox"/>	Ecosystems	species.yr	2.06E-7	1.52E-7	3.37E-8	8.13E-9	7.07E-9	5.04E-9
<input checked="" type="checkbox"/>	Resources	USD2013	2.24	1.36	0.377	0.256	0.0583	0.189

What if we substitute the Aluminium for recycled Aluminium?



Substitute the Aluminium for scrap Aluminium

Input/output

Parameters

NameMSE 433 TutorialStatusNoneComment

Materials/Assemblies

Aluminium, cast alloy {RER}| treatment of aluminium scrap, post-consumer, prepar1.7kgUndefined

Add line

Processes

Metal working, average for aluminium product manufacturing {GLO}| market for metal

Transport, freight, lorry >32 metric ton, EURO6 {RER}| market for transport, freight, lorry

Electricity, medium voltage {CH}| market for electricity, medium voltage | Cut-off, U

Heat, central or small-scale, other than natural gas {CH}| heat production, light fuel oil,

Add line

Image

Select a material process or an assembly

Assemblies and material

Assembly

Material

Agricultural

Appliances

Chemicals

Construction

Electronics

Electronics waste

Fuels

Glass

Metals

Alloys

Extraction

Ferro

Non Ferro

Market

Transform

Infrastr

Waste metals

Minerals

Others

Paper + Board

Paper+ Board

Plastics

Textiles

Name

Aluminium scrap, new {GLO}| aluminium scrap, new, Recycled Content cut-off | Cut-off, S kg

Aluminium scrap, new {GLO}| aluminium scrap, new, Recycled Content cut-off | Cut-off, U kg

Aluminium scrap, post-consumer {GLO}| aluminium scrap, post-consumer, Recycled Content cut-off | Cut-off, S kg

Aluminium scrap, post-consumer {GLO}| aluminium scrap, post-consumer, Recycled Content cut-off | Cut-off, l kg

Aluminium scrap, post-consumer, prepared for melting {GLO}| aluminium scrap, post-consumer, prepared for n kg

Aluminium scrap, post-consumer, prepared for melting {GLO}| aluminium scrap, post-consumer, prepared for n kg

Aluminium, cast alloy {RER}| treatment of aluminium scrap, new, at refiner | Cut-off, S kg

Aluminium, cast alloy {RER}| treatment of aluminium scrap, new, at refiner | Cut-off, U kg

Aluminium, cast alloy {RER}| treatment of aluminium scrap, post-consumer, prepared for recycling, at refiner | C kg

Aluminium, cast alloy {RER}| treatment of aluminium scrap, post-consumer, prepared for recycling, at refiner | C kg

Aluminium, cast alloy {RoW}| treatment of aluminium scrap, new, at refiner | Cut-off, S kg

Aluminium, cast alloy {RoW}| treatment of aluminium scrap, new, at refiner | Cut-off, U kg

Aluminium, cast alloy {RoW}| treatment of aluminium scrap, post-consumer, prepared for recycling, at refiner | C kg

Aluminium, cast alloy {RoW}| treatment of aluminium scrap, post-consumer, prepared for recycling, at refiner | C kg

Aluminium, in mixed metal scrap {GLO}| aluminium, in mixed metal scrap, Recycled Content cut-off | Cut-off, S kg

Select

New

View

Find

Cancel

Show as list

This dataset is based on two sources: the European Aluminium Association 2005 LCI data (EAA, 2008); and (2) the ecoinvent v2.2 dataset for the same activity (Althaus, 2009), itself largely based on EAA data from 2000. Priority was given to data contained in EAA (2008); Althaus (2009) was used only in cases where it was found to be more complete than EAA (2008).

While this dataset represents the refining of prepared post-consumer scrap aluminium, the inputs and outputs reported by EAA (2008) actually refer to refining of all scrap, including post-consumer scrap, scrap from foundries, turnings, skimmings (dross) and aluminium metallics. In the ecoinvent database, the refining of post-consumer

Filter on

and

or

Clear

476

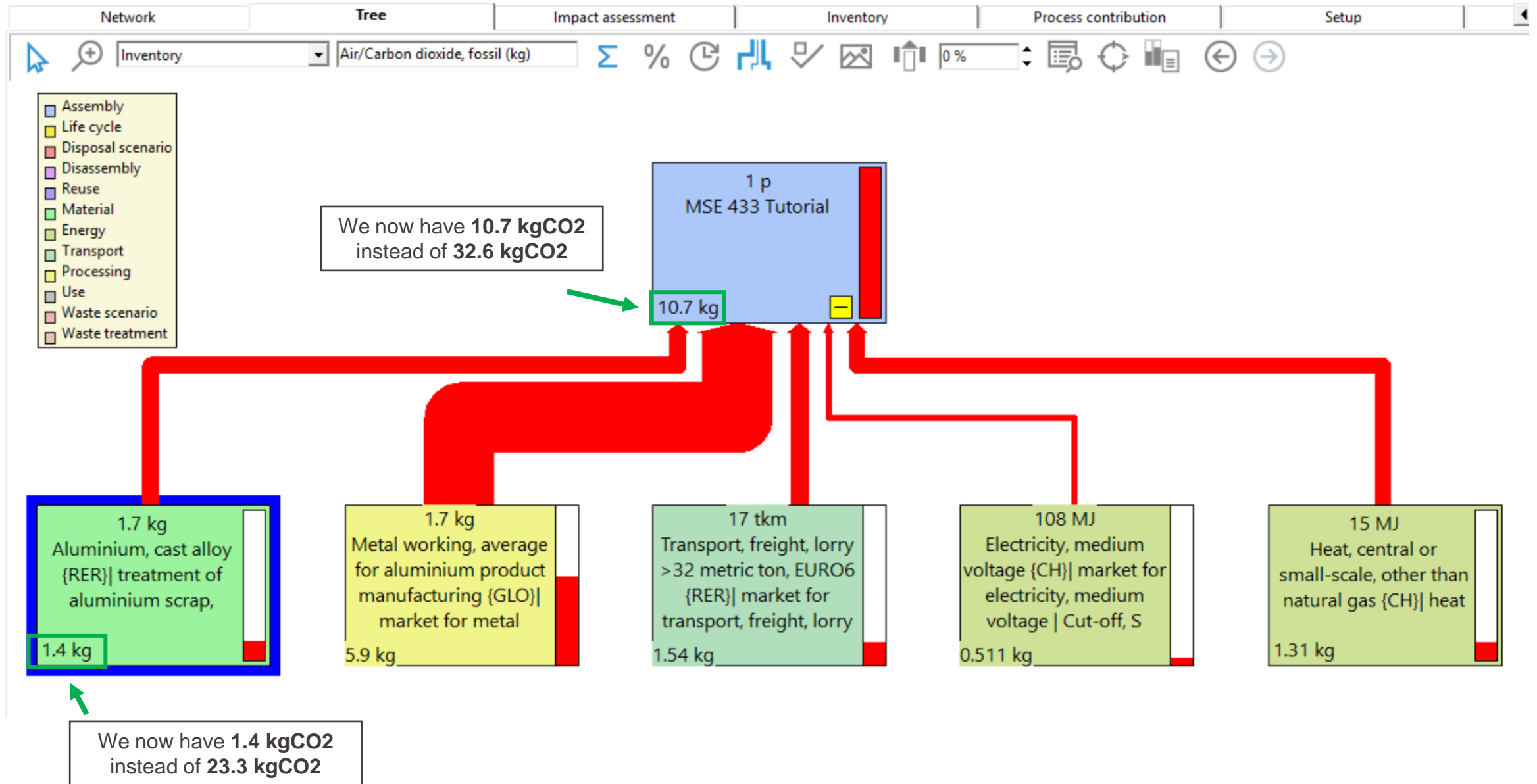
22935 items

1 item selected

Go back to the tree and calculate the impact

MSE 433 - SimaPro tutorial

The CO₂ tree for scrap Aluminium



We can quickly switch to EN15804 if needed

Name
MSE 433 - Tutorial EN

Comment

Calculation function

☐ Network

☒ Tree

☐ Analyse

☐ Compare

☐ Uncertainty analysis

Method

Product	Amount	Unit	Project	Comment
MSE 433 Tutorial	1	p	MSE433 - Tutorial	

Current library
Ecoinvent 3 - allocation, cut-off by classification - unit

Replacing library
Ecoinvent 3 - allocation, cut-off, EN 15804 - system

Suffix
Cut-off, U

Suffix
EN15804, S

Switches

☐ Inventory per sub-compartment

☐ Exclude infrastructure processes

☐ Exclude long-term emissions

Monte Carlo stop criterion

☒ Fixed number of runs 1000

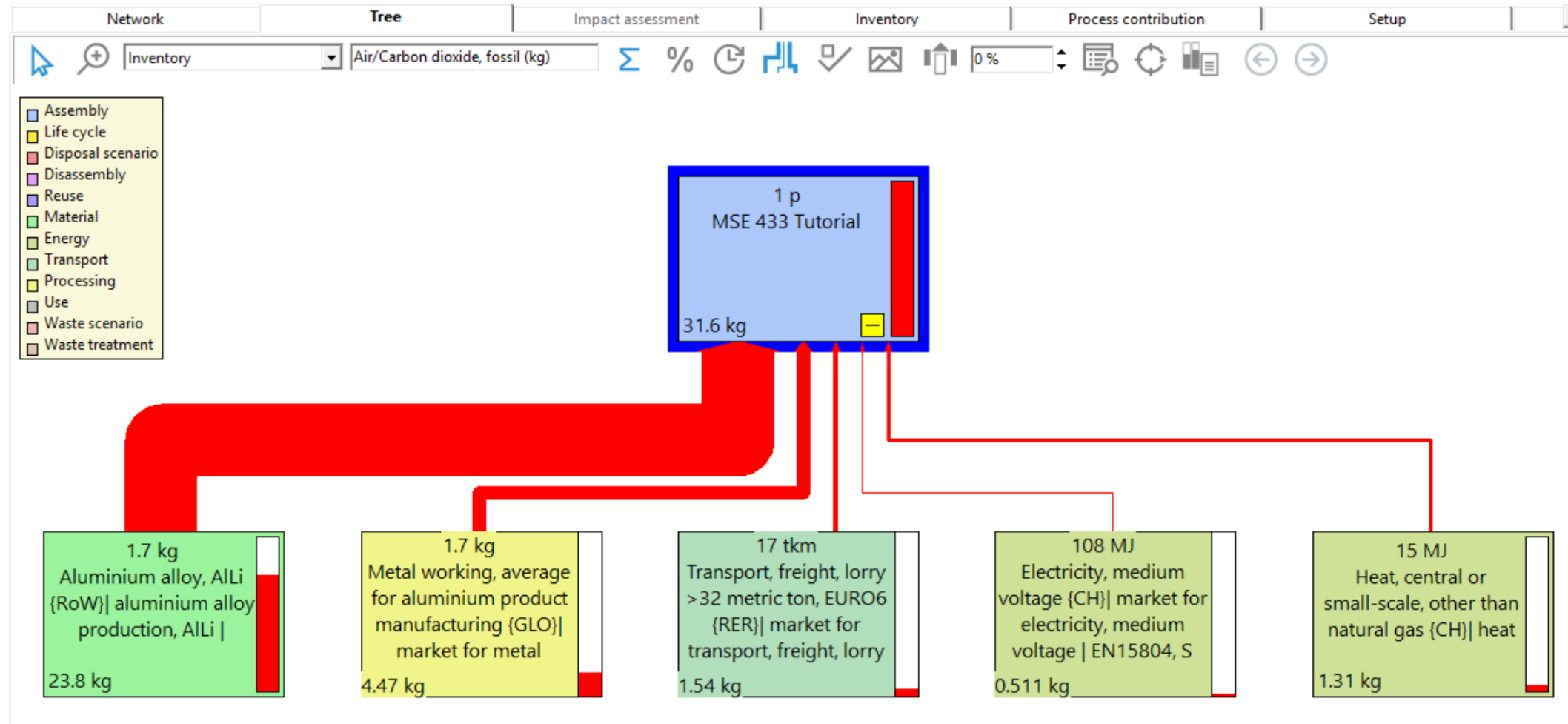
☐ Use stop factor 0.005 Value Inventory result (Air/(unspecified)/Water/m3, CN-ECGC)

☐ Seed value 0

Help Calculate Close

In the calculation setup
add the current and
replacing libraries

EN15804 Calculation with the previous Aluminium (not the scrap)



What if we want to calculate the kgCO2e?

Name

MSE 433- Tutorial GWP100

Comment

Calculation function

☐ Network

☒ Tree

☐ Analyse

☐ Compare

☐ Uncertainty analysis

Method

IPCC 2021 GWP100 V1.03

Product	Amount	Unit	Project	Comment
MSE 433 Tutorial	1	p	MSE433 - Tutorial	

Current library

Ecoinvent 3 - allocation, cut-off by classification - unit

Suffix

Cut-off, U

Replacing library

Ecoinvent 3 - allocation, cut-off by classification - system

Suffix

Cut-off, S

Switches

☐ Inventory per sub-compartment

☐ Exclude infrastructure processes

☐ Exclude long-term emissions

Monte Carlo stop criterion

☒ Fixed number of runs

1000

☐ Use stop factor

0.005

Value

Inventory result (Air/(unspecified)/Water/m3, CN-ECGC)

☐ Seed value

0

Help

Calculate

Close

Change Method to analyze the **GWP100**



What if we want to calculate the kgCO2e?

Select a method and a normalization/weighting set

Methods

- European
- Global
- North American
- Others
- Single issue
- Superseded
- Water footprint

Name	Version /	Project
Mineral resource dissipation (Poncelet 2	1.00	Methods
Cumulative Energy Demand (LHV)	1.01	Methods
Freshwater eutrophication (Payen et al.,	1.01	Methods
Land use biodiversity (Chaudhary et al.,	1.02	Methods
IPCC 2021 GTP100	1.03	Methods
IPCC 2021 GTP100 (incl. CO2 uptake)	1.03	Methods
IPCC 2021 GWP100	1.03	Methods
IPCC 2021 GWP100 (incl. CO2 uptake)	1.03	Methods
IPCC 2021 GWP20	1.03	Methods
IPCC 2021 GWP20 (incl. CO2 uptake)	1.03	Methods
IPCC 2021 GWP500	1.03	Methods

Normalisation/Weighting /

IPCC 2021 is the successor of the IPCC 2013 method, which was developed by the Intergovernmental Panel on Climate Change. It contains the Global Warming Potential (GWP) climate change factors of IPCC with a timeframe of 100 years. Note that the GWP 100 factors are recommended as default by UNEP-GLAM (2017), and the GWP20 and GTP100 factors for sensitivity analysis.

NOTE: This version of the method EXCLUDES CO2 uptake and biogenic CO2 emissions. The uptake and emissions of biogenic CO2 are part of a short cycle and has net zero impact; the biogenic methane factor is corrected for methane oxidation.

Select

View

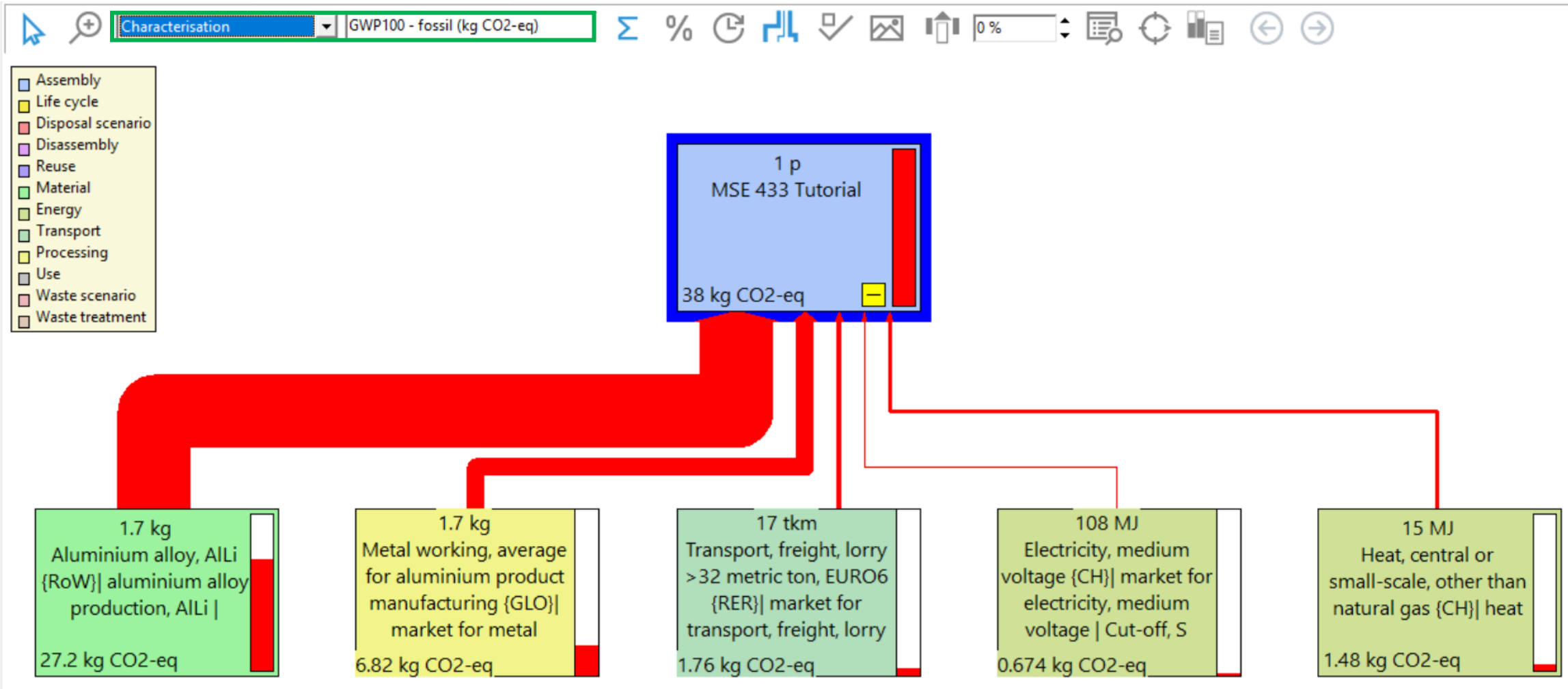
Find

Cancel

106 items

1 item selected

What if we want to calculate the kgCO2e?



What if we want to see the flow in more details?

Name
MSE 433- Tutorial GWP100

Comment

Calculation function

☐ Network
☒ Tree
☐ Analyse
☐ Compare
☐ Uncertainty analysis

Method
IPCC 2021 GWP100 V1.03

Product	Amount	Unit	Project	Comment
MSE 433 Tutorial	1	p	MSE433 - Tutorial	

Current library
Ecoinvent 3 - allocation, cut-off by classification - unit

Replacing library
Ecoinvent 3 - allocation, cut-off by classification - unit

Switches

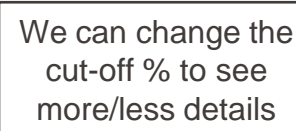
☐ Inventory per sub-compartment
☐ Exclude infrastructure processes
☐ Exclude long-term emissions

Monte Carlo stop criterion

☒ Fixed number of runs 1000
☐ Use stop factor 0.005 Value Inventory result (Air/(unspecified)/Water/m3, CN-ECGC)
☐ Seed value 0

Help Calculate Close

Keep the unit library



Navigator

2.4

11 nodes visible of 16357