PRIMUS

GreenDeLTa
software / data / know-how

PRIMUS' LCA tool with the connection to a supply chain traceability system

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Introducing the PRIMUS project I

PRIMUS is an European project that will improve the plastic recycling industry with new polymer recycling technologies for automotive and home appliances applications.

PRIMUS demo cases

Pilot 1. Automotive interior

Pilot 2. Automotive cooling circuit

Pilot 3. Refrigerator to refrigerator - Food contact demonstration

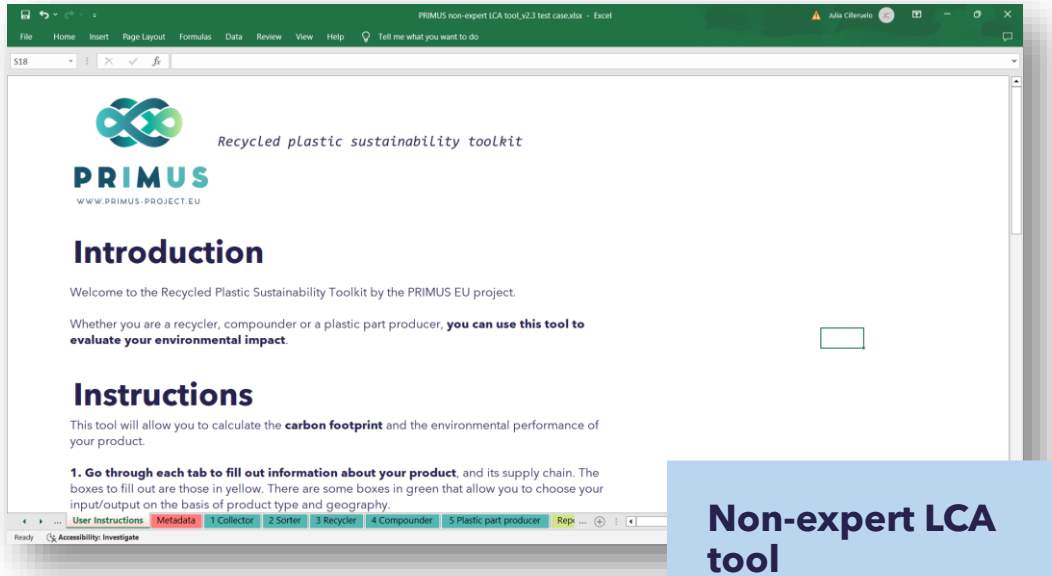
Pilot 4. Washing machine door seal

Introducing the PRIMUS project II

GreenDelta's job in PRIMUS

- Sustainability Assessments

Expert LCA tool



Non-expert LCA tool

LCA tool

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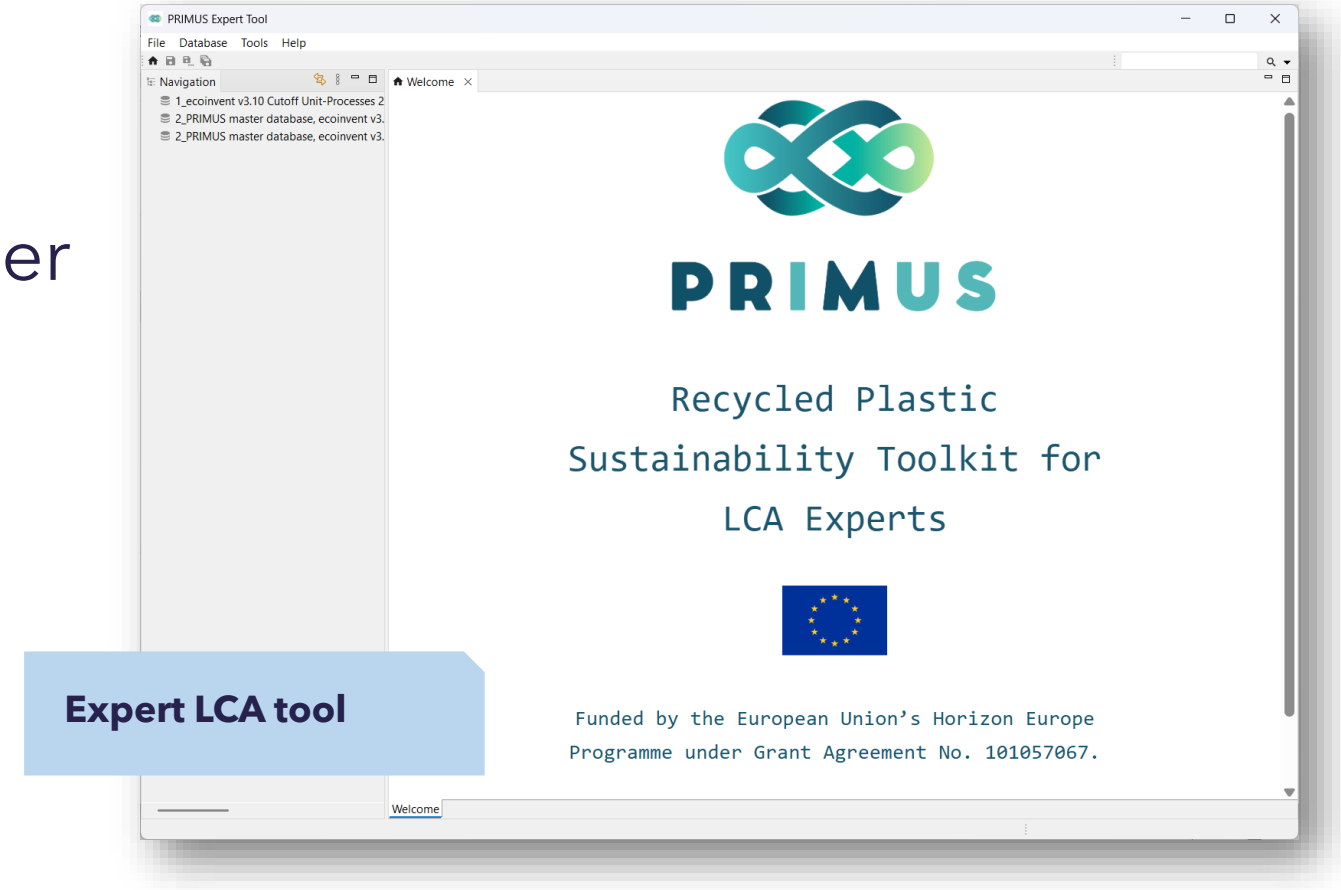
Expert LCA tool

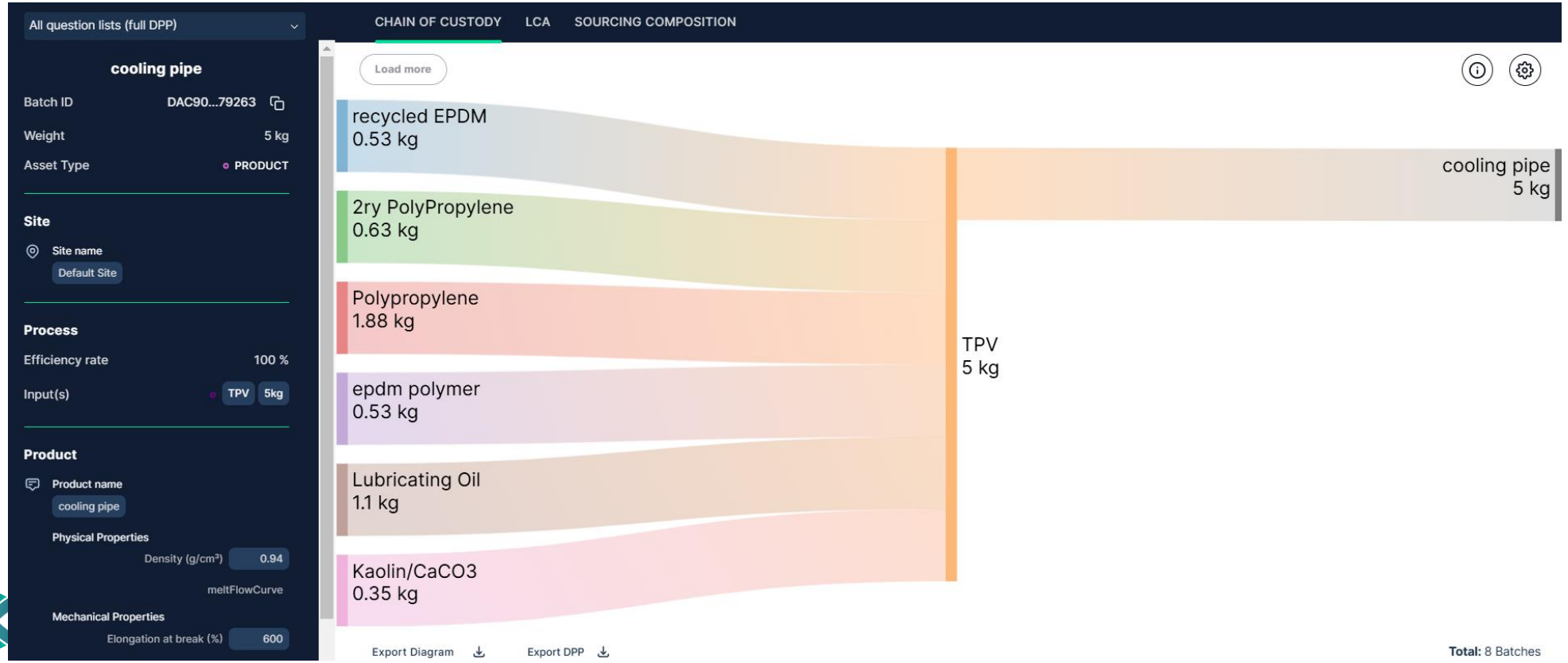
- Based on openLCA
- Contains the PRIMUS master database
- Connects to a traceability system for supply chain information



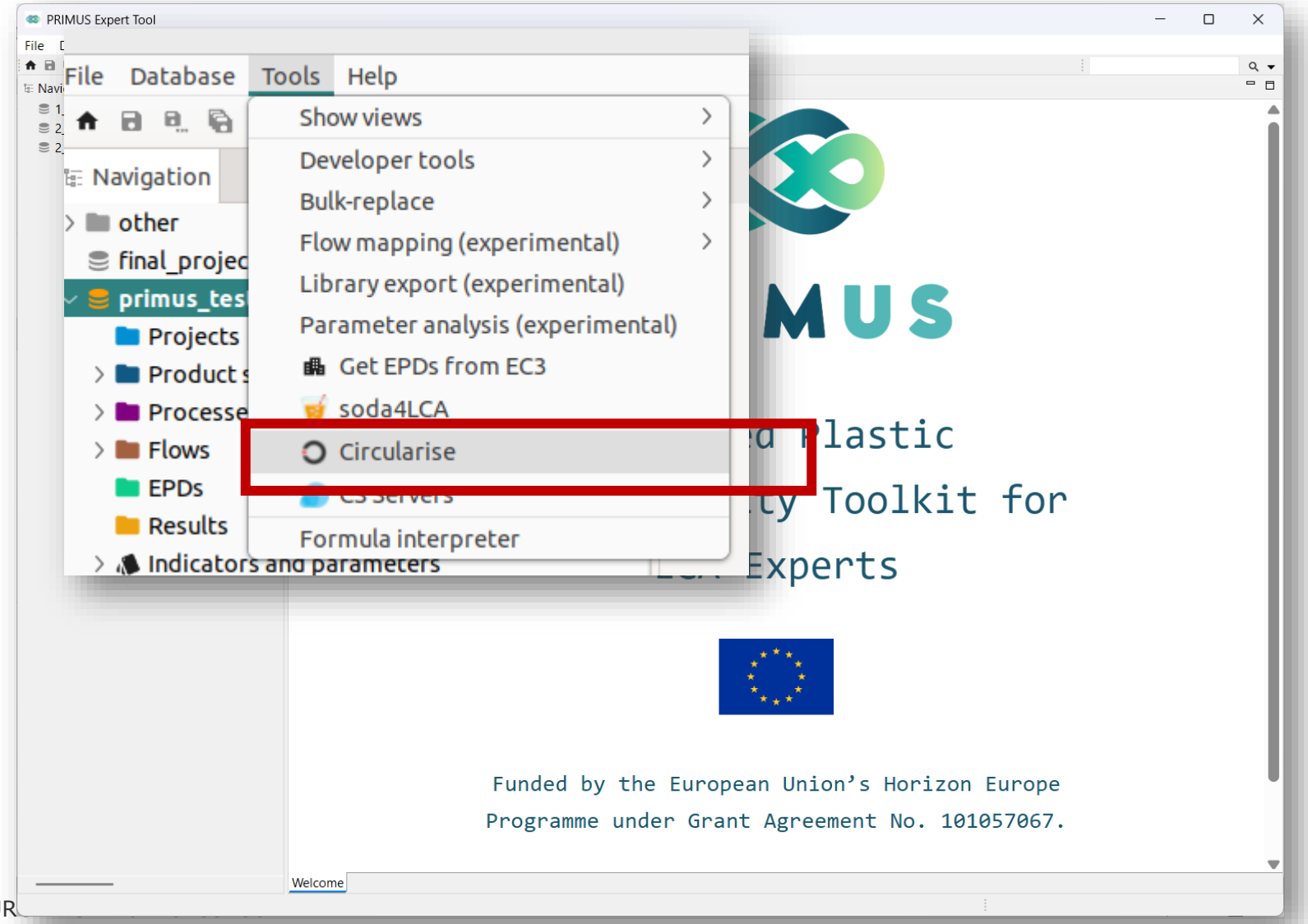
Traceability system for supply chain information?

CIRCULARISE

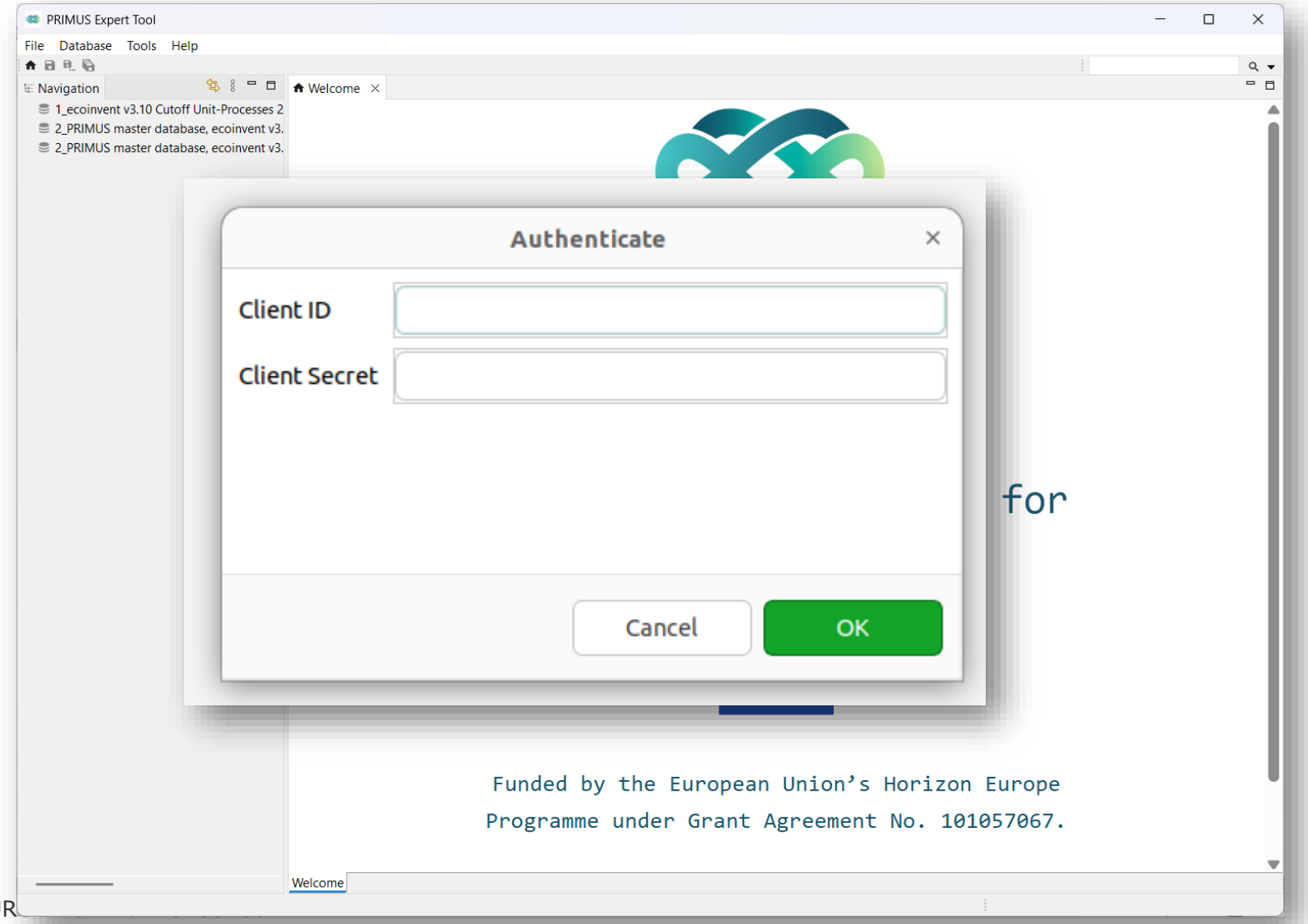
Product traceability platform for supply chain compliance



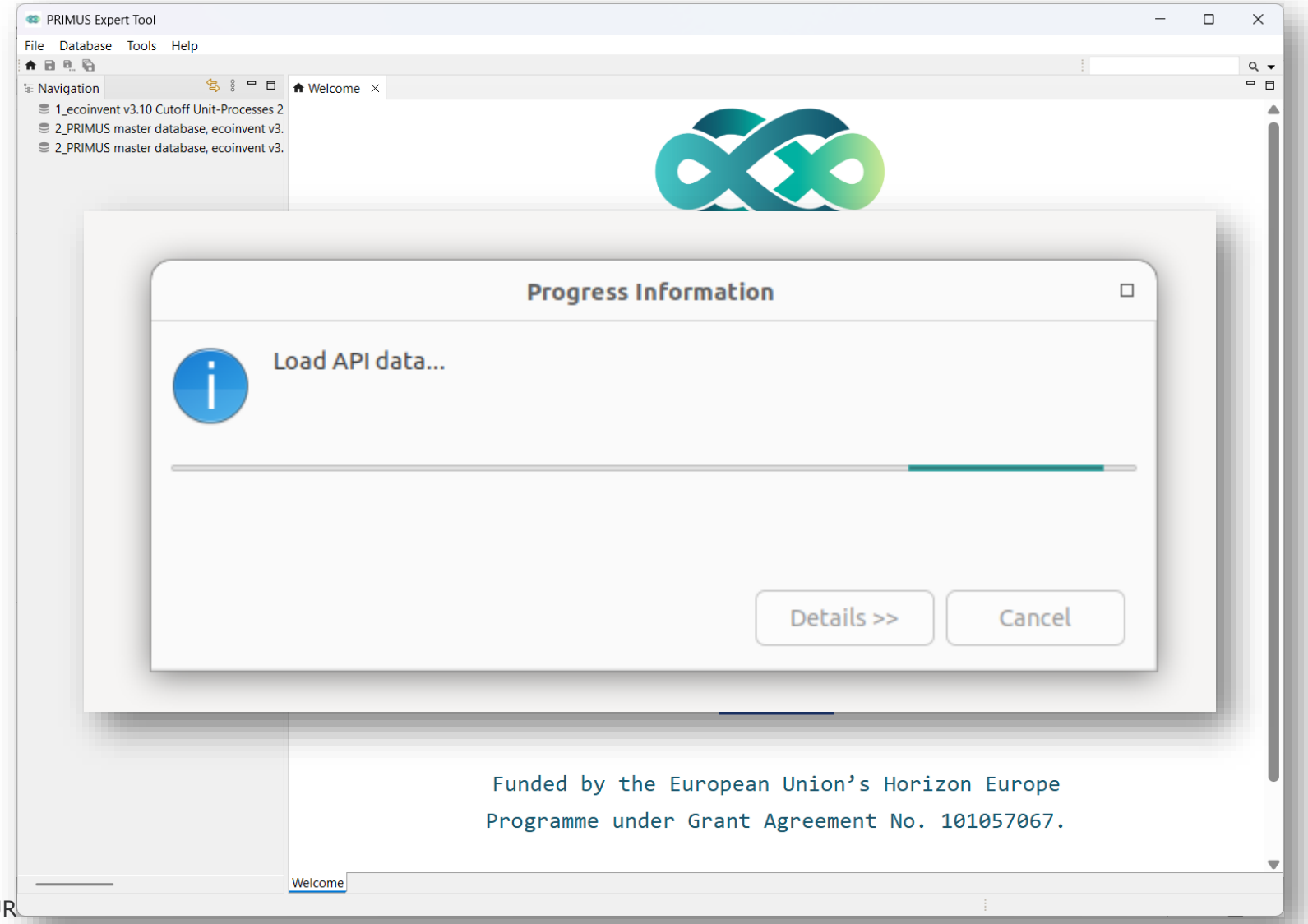
API connection



API connection

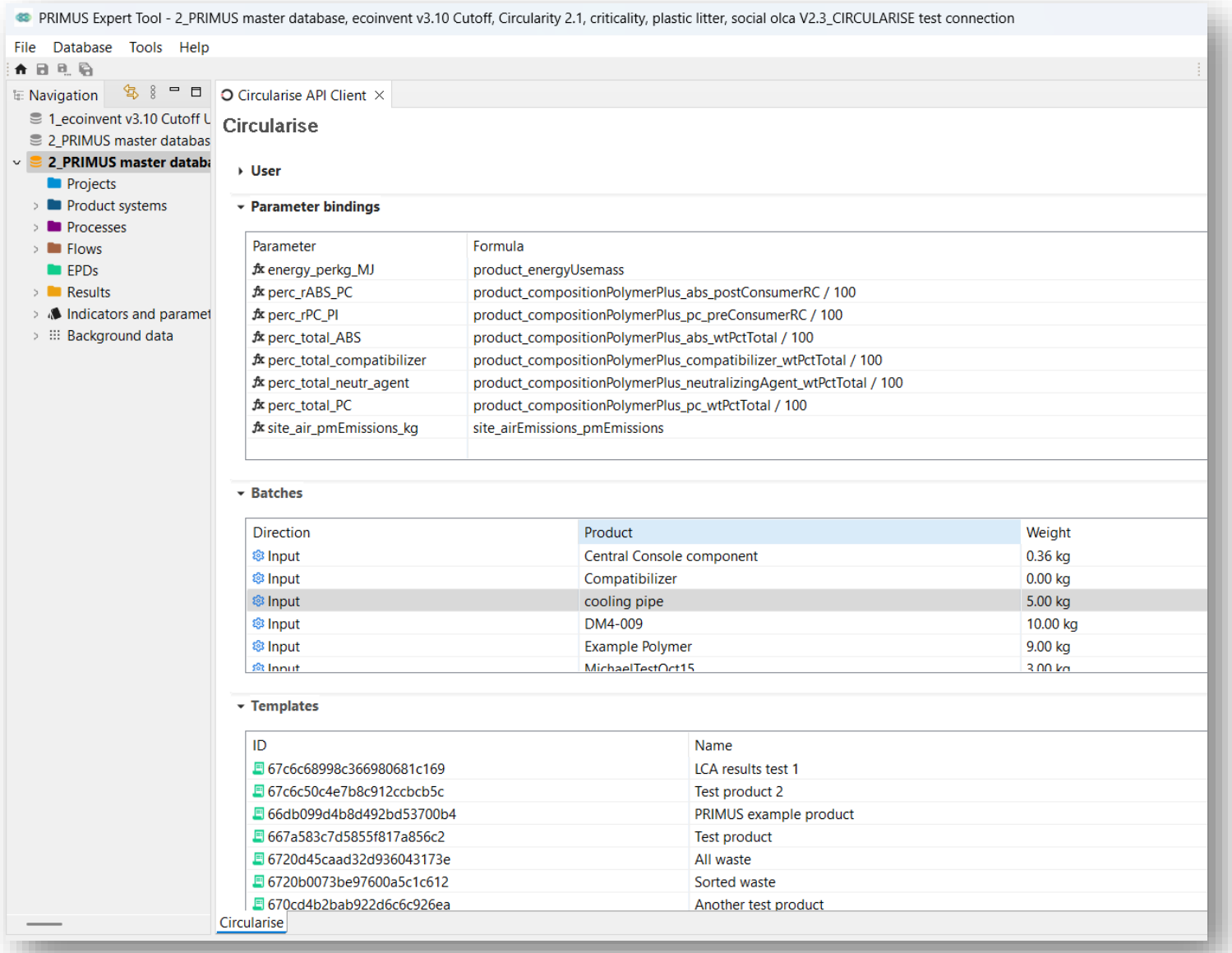


API connection



API client tool

- User information
- Parameter bindings
- Batches
- Templates



Parameter bindings

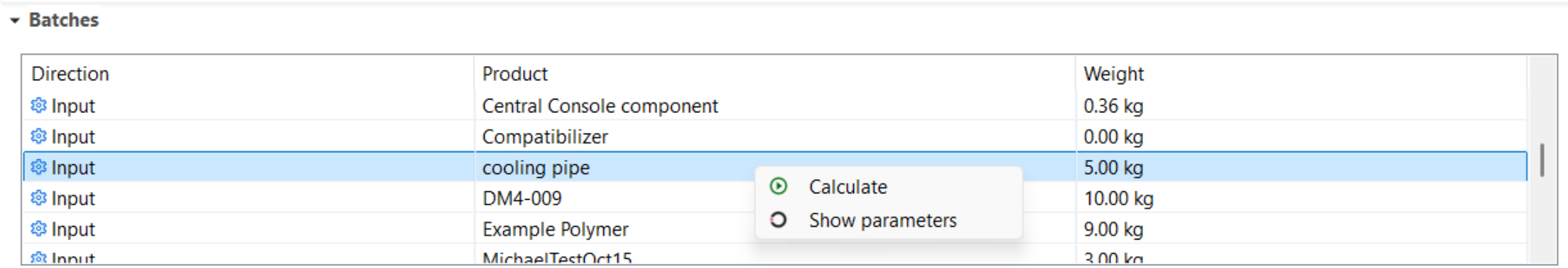
- Matches data coming from the traceability platform and parameters in the LCA tool

Parameter bindings

Parameter	Formula
energy_perkg_MJ	product_energyUsemass
perc_rABS_PC	product_compositionPolymerPlus_abs_postConsumerRC / 100
perc_rPC_PI	product_compositionPolymerPlus_pc_preConsumerRC / 100
perc_total_ABS	product_compositionPolymerPlus_abs_wtPctTotal / 100
perc_total_compatibilizer	product_compositionPolymerPlus_compatibilizer_wtPctTotal / 100
perc_total_neutr_agent	product_compositionPolymerPlus_neutralizingAgent_wtPctTotal / 100
perc_total_PC	product_compositionPolymerPlus_pc_wtPctTotal / 100
site_air_pmEmissions_kg	site_airEmissions_pmEmissions

Batches

- Batches are products logged in the traceability system that has been shared with us



Batches

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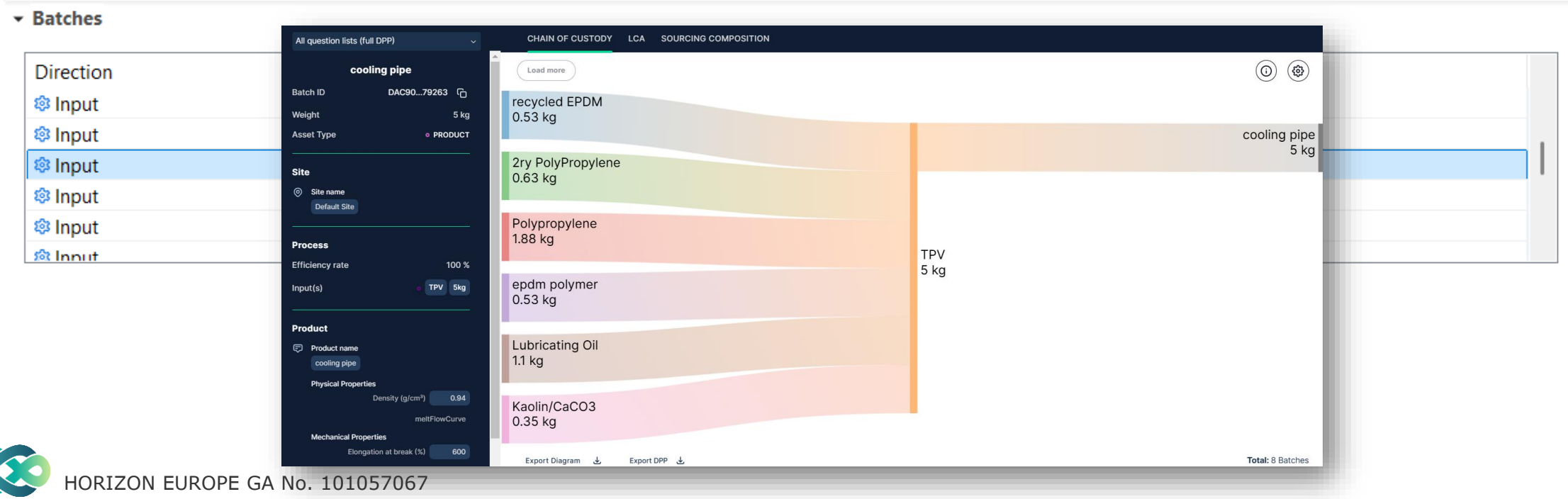


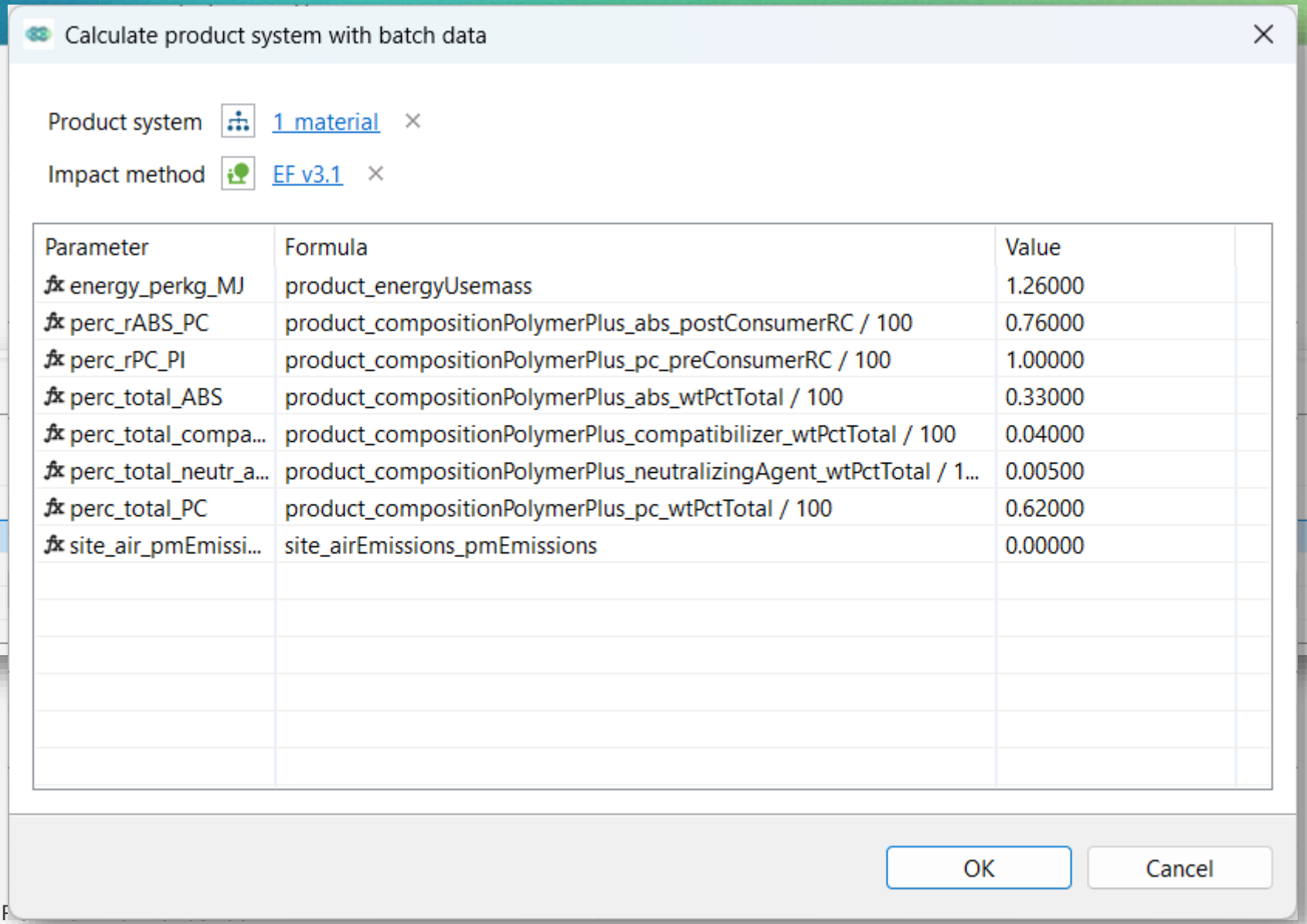
Batches – parameter values

Parameter values of batch

Circularise datapoint	Value	Is numeric	Parameter
product.energyUsemass	51.7896	☑	product_energyUsemass
product.eoLscenarios.mechanicalRecycling	Yes	☐	-
product.eoLscenarios.reuse	No	☐	-
product.mechanicalPropertiesPrecycling.charp...	205.80	☑	product_mechanicalPropertiesPrecycling_cha...
product.mechanicalPropertiesPrecycling.charp...	26.51	☑	product_mechanicalPropertiesPrecycling_cha...
product.mechanicalPropertiesPrecycling.elong...	0.2533	☑	product_mechanicalPropertiesPrecycling_elo...
product.mechanicalPropertiesPrecycling.heat...	98	☑	product_mechanicalPropertiesPrecycling_hea...
product.mechanicalPropertiesPrecycling.tensil...	2071.31	☑	product_mechanicalPropertiesPrecycling_tens...
product.mechanicalPropertiesPrecycling.yield...	43.51	☑	product_mechanicalPropertiesPrecycling_yiel...
product.partFastening	snapFit	☐	-
product.physicalPropertiesPrecycling.density	1.1260	☑	product_physicalPropertiesPrecycling_density
product.physicalPropertiesPrecycling.meltFlow...	14.61	☑	product_physicalPropertiesPrecycling_meltFl...
product.productDimensions.depth	75	☑	product_productDimensions_depth
product.productDimensions.length	290	☑	product_productDimensions_length
product.productDimensions.units	millimeter	☐	-
product.productDimensions.width	280	☑	product_productDimensions_width
product.productName	Automotive Interior Front Cons...	☐	-
product.renewableEnergyUseRatio.nonren	95	☑	product_renewableEnergyUseRatio_nonren
product.renewableEnergyUseRatio.ren	5	☑	product_renewableEnergyUseRatio_ren

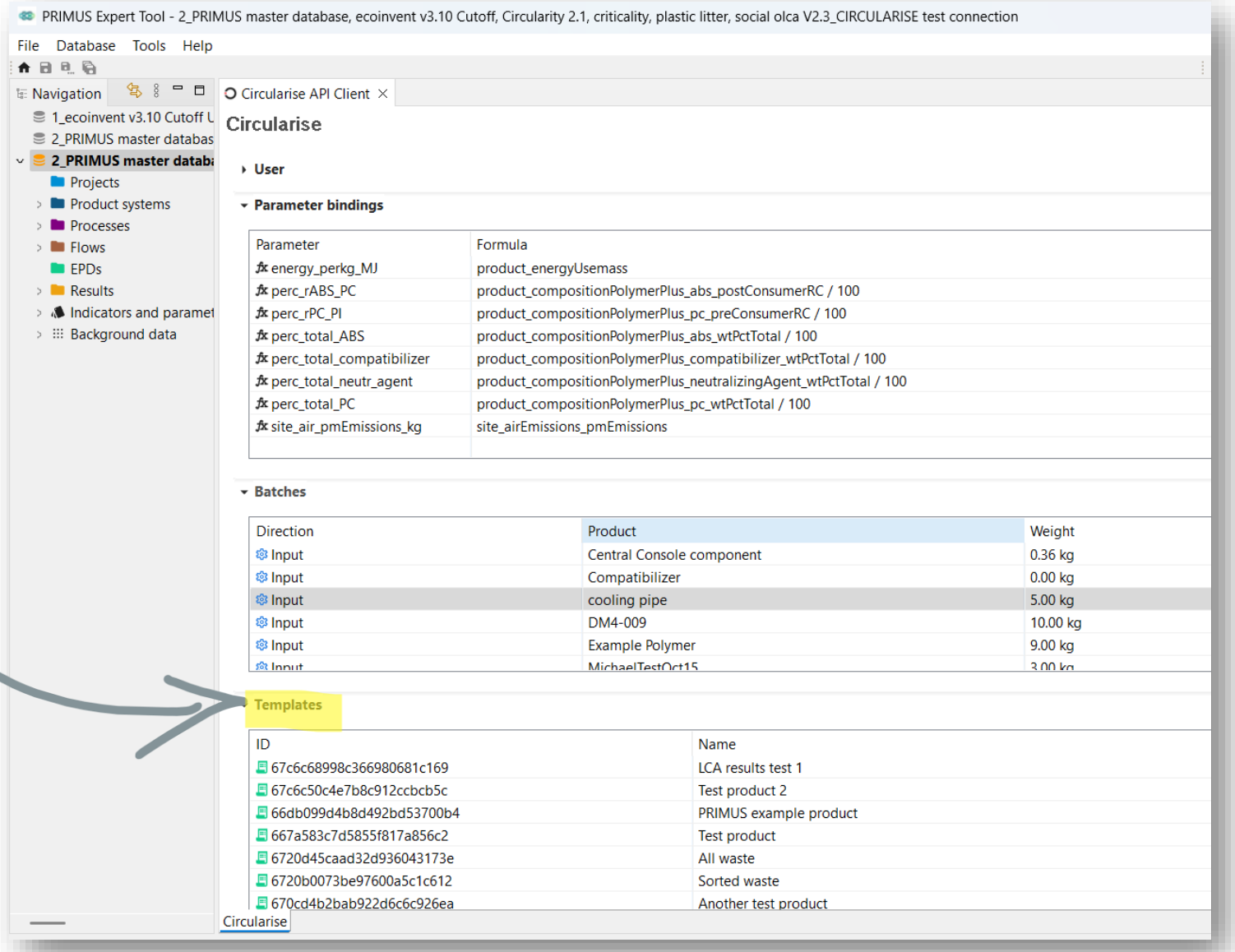
OK Cancel

Calculation

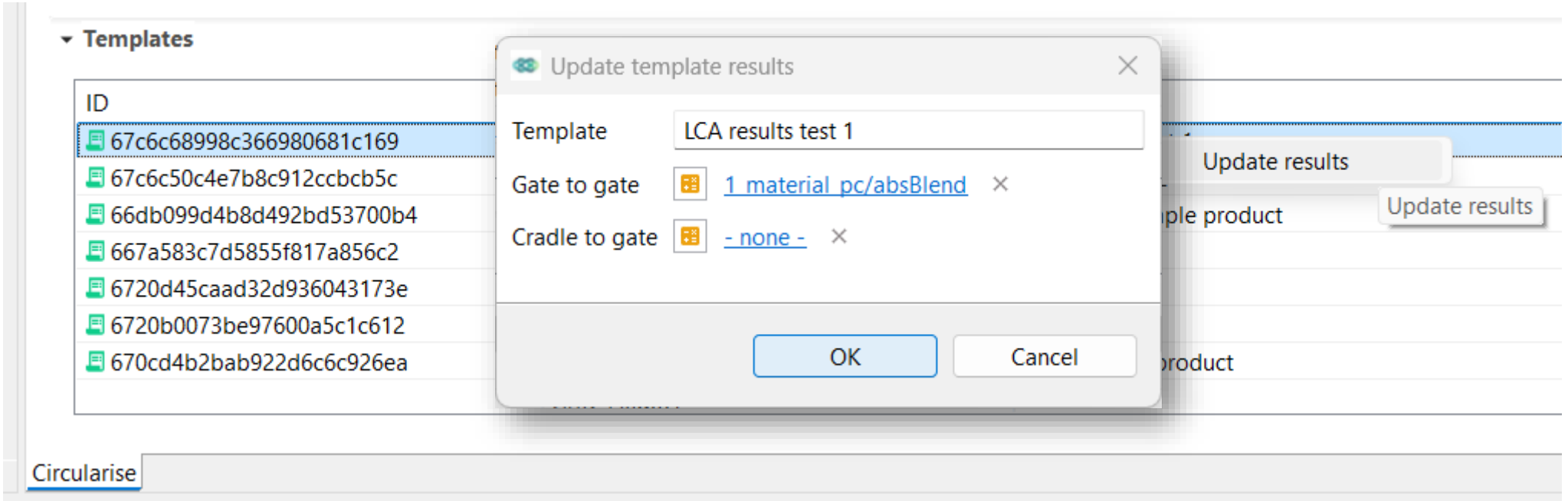


Templates

- For writing back information to the traceability system



Templates


Templates
ID
67c6c68998c366980681c169
67c6c50c4e7b8c912ccbcb5c
66db099d4b8d492bd53700b4
667a583c7d5855f817a856c2
6720d45caad32d936043173e
6720b0073be97600a5c1c612
670cd4b2bab922d6c6c926ea
Update template results
Template
LCA results test 1
Gate to gate
1 material_pc/absBlend
Cradle to gate
- none -
OK
Cancel
Update results
Update results
ple product
roduct
Circularise

Conclusions and final thoughts

Conclusions

- The PRIMUS expert LCA tool is based on openLCA 2.4 and contains a master database and a connection to a traceability system.
- The connection to a traceability system was successful.
- The tool successfully obtains supply chain information and writes back sustainability results.

Further information and final thoughts

- The tool is published for free in openLCA Nexus (not open source).
- The relevance of the connection depends on how much the traceability platform is used.
- We are open to further projects to connect an LCA software to a traceability / blockchain solution.

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PRIMUS

WWW.PRIMUS-PROJECT.EU

Thank you!

ANY QUESTIONS?

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