

# User Manual for CELERO

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## Abbreviations

CP	Cleaner Production
EP	Ecopoints
IS	Industrial Symbiosis
NACE	Nomenclature of Economic Activities

## 1 Create your profile as a consultant

CELERO is optimized to run with Google Chrome browser.

In the first step, you need to create a profile. This will allow you to use the tool: create and manage a project, create companies and use all the functions.

There are two kind of profiles: supervisor and consultant. Only consultant profiles can be created. When you create a profile, the administrator will need to approve your request.

Follow these steps to proceed:

- Use the name of your organization in your name e.g. *FHNWClaude*
- Enter all fields and upload a photo

## 2 Create company profiles

In this step, you need to enter a profile for each company that you wish to assess in your project. Once your companies will be filed under a project (step 3) you will be able to under technical information such as flow types and quantities.

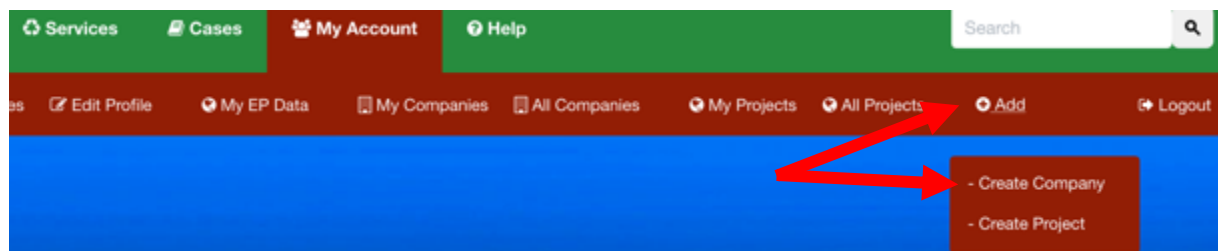
Company profiles can be edited later, but all fields must be entered.

Other users will see the companies that you enter. Flows information however are confidential (step 4).

You can create as many company profiles as you need

Follow these steps to proceed:

- Click on **+Add > Create Company**



- Enter all fields, select the location of the company on the map and upload a photo.
- Select a Level 4 NACE code for the company. This is the company's activity sector.

You can find all your companies under the tab *My Account > My Companies*

## 3 Create a project

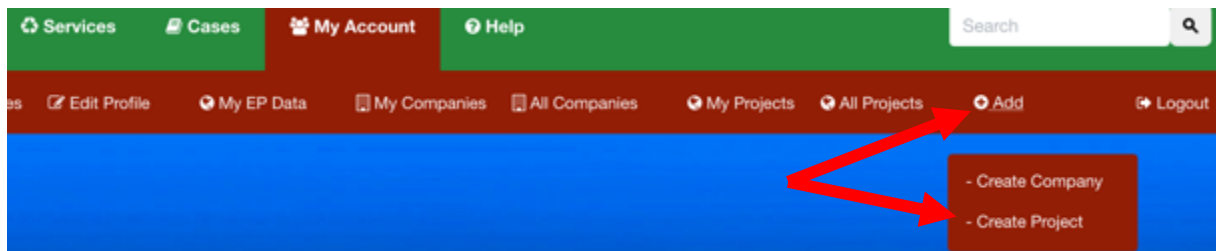
The IS (Industrial Symbiosis) identification can only give results for companies that are filed under the same project. This is why the creation of a project is a necessary step to allow for IS identification.

You will be able to edit your project later.

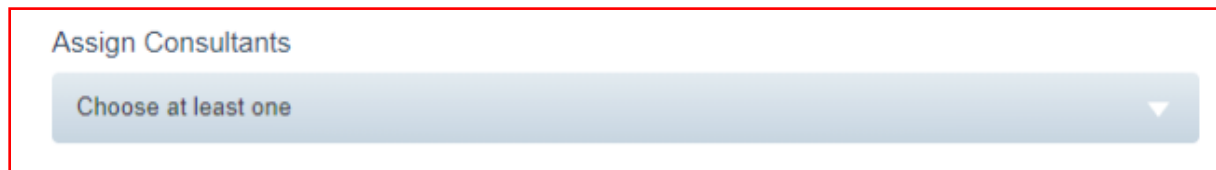
Projects are also a way to sort your companies, so that you can always come back at any project and edit the companies, add flows, or start new computations.

Follow these steps to proceed:

- Click on **+Add > Create Project**



- Use the name of your organization in the project name e.g. *FHNWProject*
- Enter all the fields, including the coordinates of the project.
- Upgrade your account to Consultant in the user profile by clicking (Become consultant) (otherwise no access to CP measures possible)



- Select *Create Project*

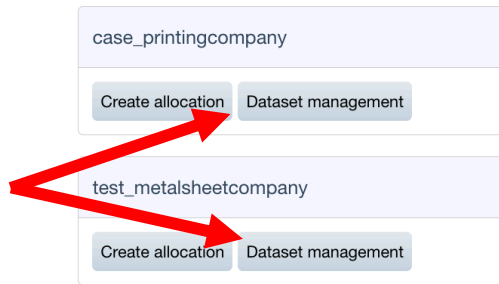
## 4 Define products, flows, processes for your companies

Once you have created your project, you can edit the companies flows, so to feed the database and allow the tool to search for matching flows. Ensure that flow names in the different companies for the same material / energy source are identical. Otherwise the program won't be able to find the allocation.

To ensure the good functioning of the tool, be thorough and enter as much information as you have. The tool solely uses this data for computation, so the quality of the data you enter in this step will directly influence your results when using the IS and environmental impact functions.

All the data that you enter under your companies are confidential and will not be shared with other users.

- Select your project under *My Projects* > Click on *Services* > Identification of CP measures
- Select *Dataset management*



- Click on *My EP Data*



- Click on *Upload Excel* : your excel sheet must have the following format, it is even better if you delete the first row (data, ep value).

	A	B	
1	data	ep value	
2	aluminium	9040,86342	
3	paper	3528,42054	
4	electricity_ch	231,312494	
5			
6			

- Add excel content to your EP data

Excel Content

Flow Name	Ep Value	Ep Unit	Add EP to your list
data	ep value	EP	<button>Add EP</button>
aluminium	9040.863420894		<button>Add EP</button>
paper	3528.420536869	EP	<button>Add EP</button>
electricity_ch	231.3124935780	EP	<button>Add EP</button>

Your EP Data

Flow Name	Flow Value	Delete
test1	10	<button>Delete</button>
paper	3528.4205368697	<button>Delete</button>
electricity_ch	231.31249357802	<button>Delete</button>
aluminium	9040.8634208944	<button>Delete</button>

- Select your company under *My Projects* > Select a project > Select a project company under *Project Companies*
- Select *Edit Company Data*



- Add **Flows** (at least *name*, *type*, *quantity*, *cost*). Flows are the energy, water and materials that are used within the processes in order to make the product(s). Select the name of the flow in the list. If the flow name isn't in the list, type it manually.

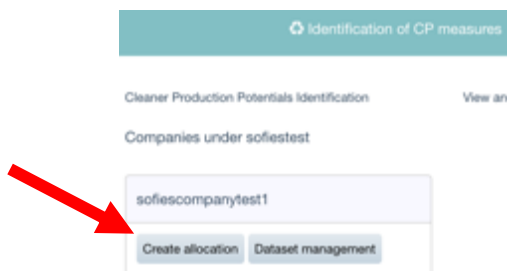
- **Add Components** (at least *name*, *connected flow*). Components are the materials that compose a flow. This allows
- **Add Process** (at least *name*, *used flows*). Select your process from the list and enter the necessary flows. You can enter more than one input and output per process.
- **Add Product** (at least *name*). Products are the final outcome of the companies, i.e. what they sell to their clients as their main mission.

**Note:** you can have more than one company

**Help:** What is the difference between flows, components and products?

## 5 Identification of Cleaner Production potential

- Open your project. Processes must have been defined.
- Select *Identification of CP measures > Create allocation*



- Enter the fields (the allocation means how much do you need from a flow to execute a process, for example 10% of the electricity is used to light the area)

Process: lighting Flow name: electricity_ch Flow type: Input	Amount 76700.00	Amount unit kWh	Allocation (%) 10.00	Accuracy rate (%) ⓘ 80
Cost 9204.00	Cost unit CHF	Allocation (%) 10.00	Accuracy rate (%) ⓘ 80	
Environmental impact 17741668.26	EP EP	Allocation (%) 10	Accuracy rate (%) ⓘ 80	
Reference 1598.000	Unit m²	Name of reference area		
KPI 47.9975	KPI Unit kWh/m²	KPI definition specific_lighting		

[Save data](#)

- **Note:** you can always change your company data under *Dataset management*
- Edit a cleaner solution with clicking on *View and Edit KPI Calculation*



case_printingcompany			
<a href="#">View CP Potentials, Identifications</a> <a href="#">View and Edit KPI Calculation</a> <a href="#">View Cost-Benefit Analysis</a>			
Process name	Flow name	Flow type	Manage
lighting	electricity_ch	Input	<a href="#">Edit allocation</a> <a href="#">Delete allocation</a>
Printing	paper_waste	Output	<a href="#">Edit allocation</a> <a href="#">Delete allocation</a>

- Enter the fields Benchmark KPI (target) and Cost Benefit option name

KPI View and Edit Table							
				<a href="#">See changes</a> <a href="#">Cancel all changes</a> <a href="#">Save all changes</a>			
Allocation	KPI	Benchmark KPI	Kpi unit	KPI definition	Cost Benefit option name *	Is option?	Edit allocation
lighting - electricity_ch - Input	47.9975	23.00000	kWh/m²	specific_lighting	L.E.D	<input checked="" type="checkbox"/>	<a href="#">Edit</a>
Printing - paper_waste - Output	0.03	0.02	kg/kg	Paper losses	Improved set up printing machine	(Option)	<a href="#">Edit</a>

- Once you have created all allocations you wanted to, you can view the results with clicking on *View CP Potentials Identifications*, *View and Edit KPI Calculation*, and *View Cost-Benefit Analysis*.

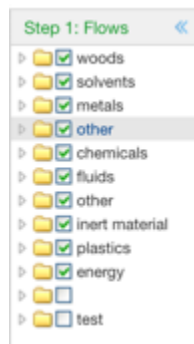
## 6 Identification of Industrial Symbiosis potential

In this step, you will be able to identify symbiosis potentials thanks to the identification of matching flows. You can either manually enter the matching flows or have the tool calculate them automatically.

- Select *Identification of IS measures*

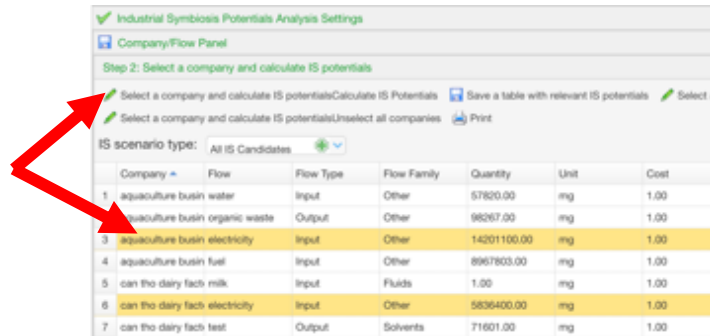


- You can either launch an identification manually (*Manual IS*) or automatically (*Automated IS*)
- Automated IS:
  - Follow the steps
    - Step 1: Select the relevant flows you need for your IS

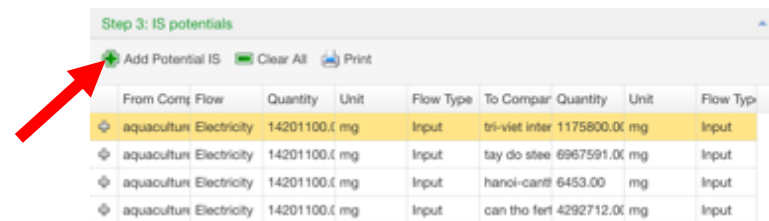




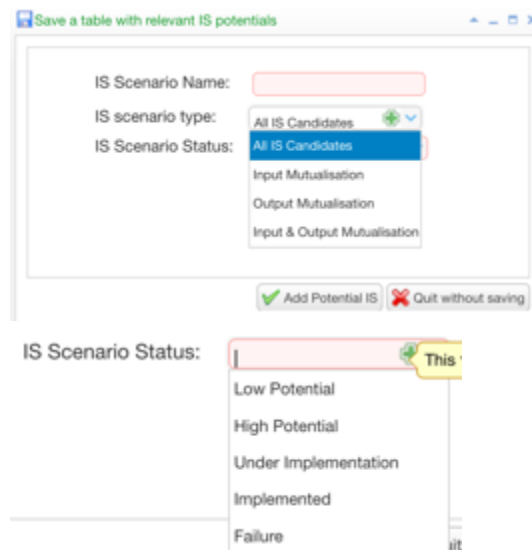
- Step 2: Select one or more companies and calculate IS potentials: click on the relevant rows and then click on *Select a company and calculate IS potentials*



- Step 3: Select one or more potential IS that are relevant for you click for each one on *Add potential IS*



- Step 4: Save a table with relevant IS potentials. You can select which scenario type is relevant for you (either *All IS Candidates*, or *Input* or *Output Mutualisation*, or *Input & Output Mutualisation*) and you have to give a status to your scenario.



- Manual IS:
  - Follow the steps:
    - Step 1: Select one company for witch flow matching is required: click on the relevant rows and then click on *Get flows details for this company*.

✓ Industrial Symbiosis Potentials Analysis Settings

Manual IS Potential Detection Settings

Step 1: Select a company for which flow matching is required

Get flows details for this company Print

IS scenario type: All IS Candidates

Company	Flow	Flow Type	Flow Family	Quantity	Unit	Cost	Cost Unit
2	aquaculture busin organic waste	Output	Other	98267.00	mg	1.00	CHF
3	aquaculture busin electricity	Input	Other	14201100.00	mg	1.00	CHF
4	aquaculture busin fuel	Input	Other	8967803.00	mg	1.00	CHF
5	can tho dairy fact milk	Input	Fluids	1.00	mg	1.00	CHF

- Step 2: Select flow from the company and click on *create flow matching*

Step 2 :Select flow from can tho fertilizer & chemical jsc

Create flow matching Print

	Flow Category	Quantity	Unit	Quality	Flow Type
1	detergent	6610.00	mg		Output
2	Electricity	4292712.00	mg		Input
3	electricity to chemik	82360.00	mg		Output
4	test	12017.00	mg		Input
5	test12	15802.00	mg		Input

- Step 3: Select the IS potentials that are relevant for you and click on *Add potential IS*

electricity to chemical bar

Add Potential IS Print

	Company	Flow	Quantity	Unit	Quality	Flow Type
1	test2	Water	1000.00	mg		Input
2	test 1	Water	900.00	mg		Output
3	can tho dairy fact milk		1.00	mg		Input
4	can tho dairy fact Water		261126.00	mg		Input
5	can tho dairy fact Electricity		5836100.00	mg		Input

- Step 4: this step is the same as for the Automated IS

## 7 Cost-Benefit Analysis

The cost-benefit analysis shows you the marginal cost of implementing a cleaner production measure/ or an industrial symbiosis measure and the ecological benefit of this measure.

- Under *Services*, select *€ Cost-Benefit Analysis*
- For the CP measures and the IS Potentials you identified, fill all the fields that doesn't fill automatically and click on *Save*

- At the bottom of the page, you will find a table and a graph with the *Marginal Cost* and the *Ecological Benefit*

Cost - Benefit Analysis Summary Table

Option and Process Name	Marginal Cost	Ecological Benefit
Improved set up printing machine Printing - paper_waste - Output	0.92	35280
L.E.D lighting - electricity_ch - Input	-9.49	8489
aluminium input IS potential from/to test_metalsheetcompany	-1.56	60017

Cost - Benefit Analysis Graph

