

SPIDER CHART TOOL MANUAL



BECOMING A GREEN UTILITY

A didactic tool for changing and
evolving water utilities

ABSTRACT

Through a didactic participatory session, identify what being “green” is for your organization and develop a coherent plan of action and monitoring. Part of the Green Utility toolkit under BEWOP.

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Green Utility Tool

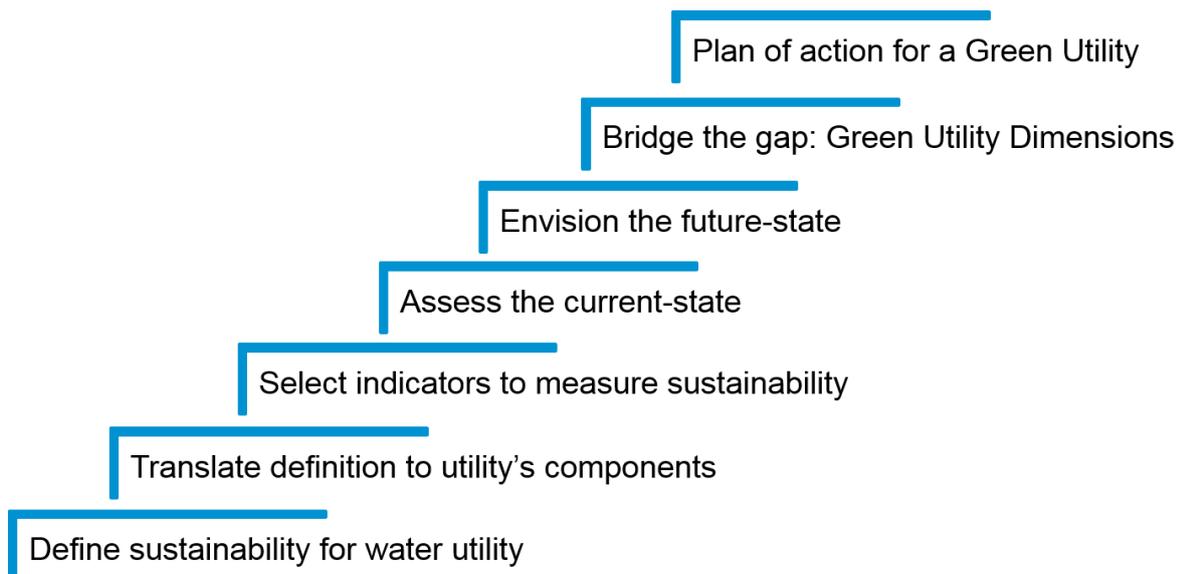
The Green Utility Tool is a self-assessment strategic planning and monitoring tool for water and wastewater utilities that are interested and willing to improve their practices in a sustainable and environmentally-conscious manner. As such, the terms ‘green’ and ‘greening’ refer to the processes and activities that can be implemented by utilities to support their development along the 3 pillars of sustainability – Social, Environmental, and Economical – while considering a long-term business horizon.

The tool contains 7 steps that lead water utilities’ staff (and other stakeholders) to define:

- (i) What being a Green Utility means for them,
- (ii) How they intend to measure its performance,
- (iii) Where they envision their utility in the future, and
- (iv) How they plan to get there.

By doing so, expectations, definitions and plans are made explicit and can be built upon.

The 7 steps, which together target each of the objectives described above, lead to the development of a Plan of Action for becoming a Green Utility as so:

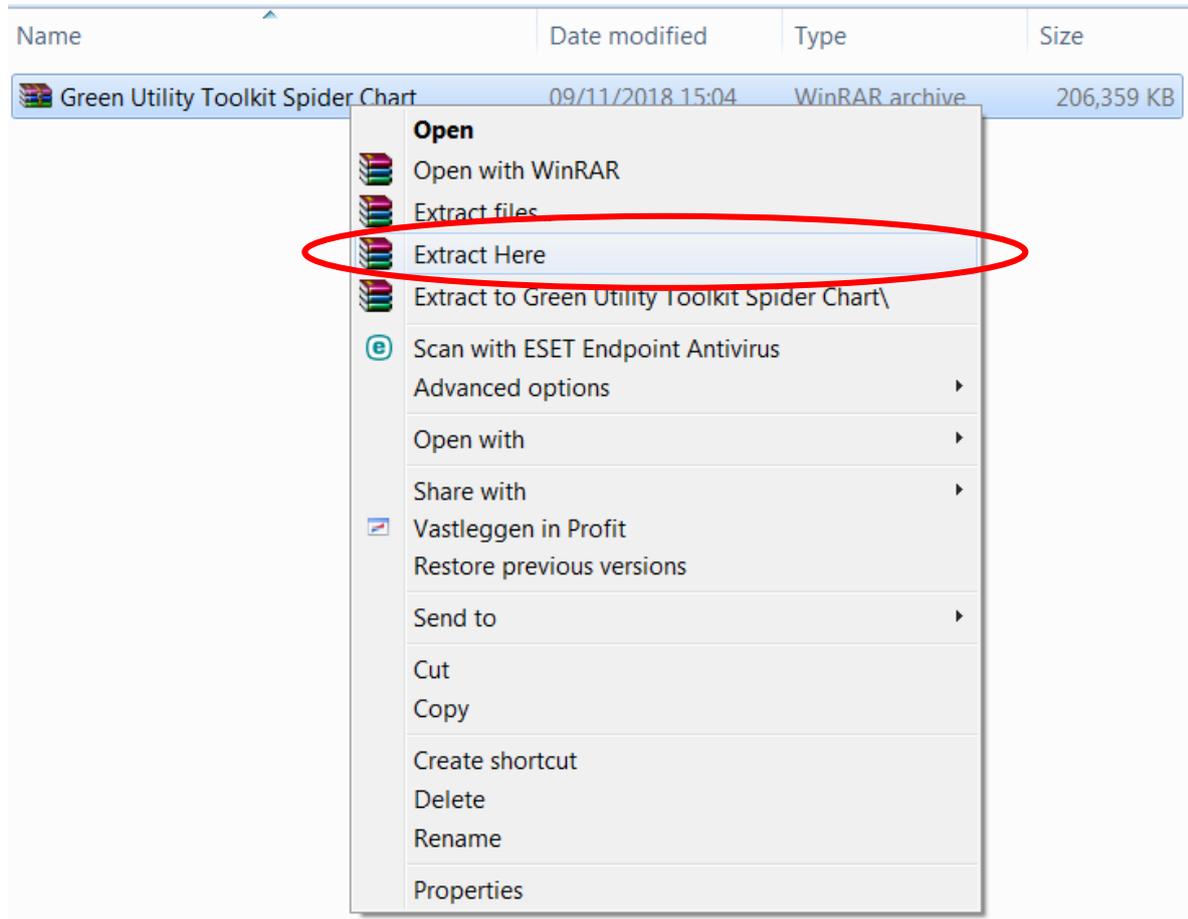


The Green Utility Tool’s Spider Chart visualizes the gaps for the selected indicators (Step 3) between the utility’s current-state (Step 4) and future-state (Step 5), in order to focus on relevant and critical gaps, as well as serve as a monitoring tool for the utility’s uptake of “green” processes.

This manual will guide you in how to install and use the Spider Chart, which is Python-based and can run on Google Chrome web browser.

1. Installing the application

The first step requires you to download the compressed WinRAR file, named Green Utility Toolkit Spider Chart, from BEWOP's Green Utility Toolkit website: <https://bewop.un-ihe.org/green-utility-tool>. Having done this, right-click on the WinRAR file and select Extract Here (or Extract files...and select a location of your preference).



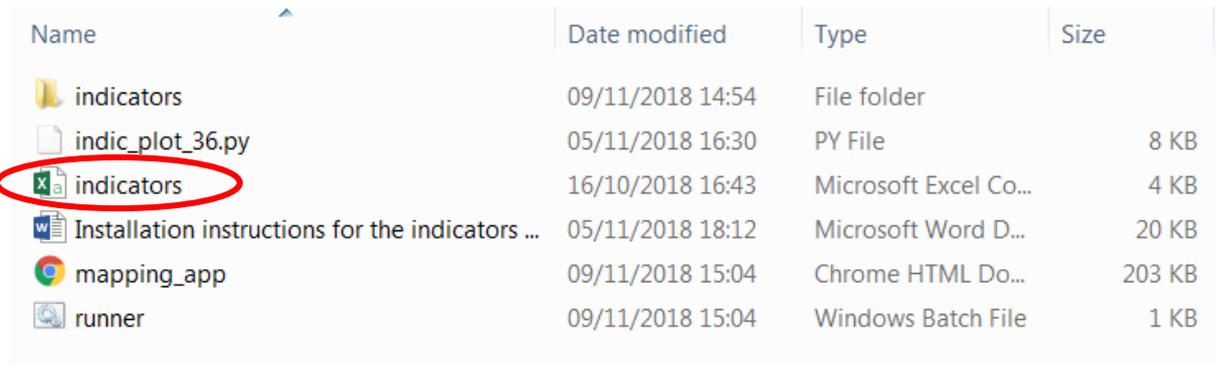
The folder location where you have extracted the files, should have the following files:

Name	Date modified	Type	Size
indicators	09/11/2018 14:54	File folder	
indic_plot_36.py	05/11/2018 16:30	PY File	8 KB
indicators	16/10/2018 16:43	Microsoft Excel Co...	4 KB
Installation instructions for the indicators ...	05/11/2018 18:12	Microsoft Word D...	20 KB
mapping_app	09/11/2018 15:04	Chrome HTML Do...	203 KB
runner	09/11/2018 15:04	Windows Batch File	1 KB

To ensure the proper functioning of the Spider Chart, **only** access/modify the “indicators” excel file and the “runner” batch file.

2. Input of selected indicators

For the Spider Chart to display the specific indicators you and your utility have selected, you will have to manually add/modify them in the “indicators” Excel file. The first step then is to open the Excel file.



Name	Date modified	Type	Size
indicators	09/11/2018 14:54	File folder	
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This will bring up the file seen below. It is **vital** that the set-up columns and rows is followed for the application to work. This means:

- All Cluster need to be placed in Column A;
- All related Categories in Column B; and
- All the categories’ related Indicators in Column C.
- Each time the level is change (from Cluster to Category, Category to Indicator, or Indicator to a new Cluster), the following row must be used.
- Only put one Cluster, Category, or Indicator per row.

The image below demonstrates the proper set-up:

	Clusters	Categories	Indicators	
	A	B	C	D
1	Cluster 1			
2		Category 1		
3			Indicator 1	
4			Indicator 2	
5		Category 2		
6			Indicator 3	
7		Category 3		
8			Indicator 4	
9			Indicator 5	
10			Indicator 6	
11	Cluster 2			
12		Category 1		
13			Indicator 1	
14		Category 2		
15			Indicator 2	
16			Indicator 3	
17		Category 3		
18			Indicator 4	
19				

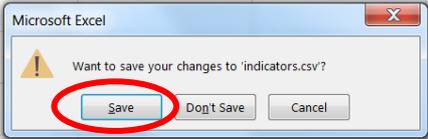
Every new item (Cluster, Category, or Indicator), is placed in a new row under the relevant column

The list can be as extensive as needed.

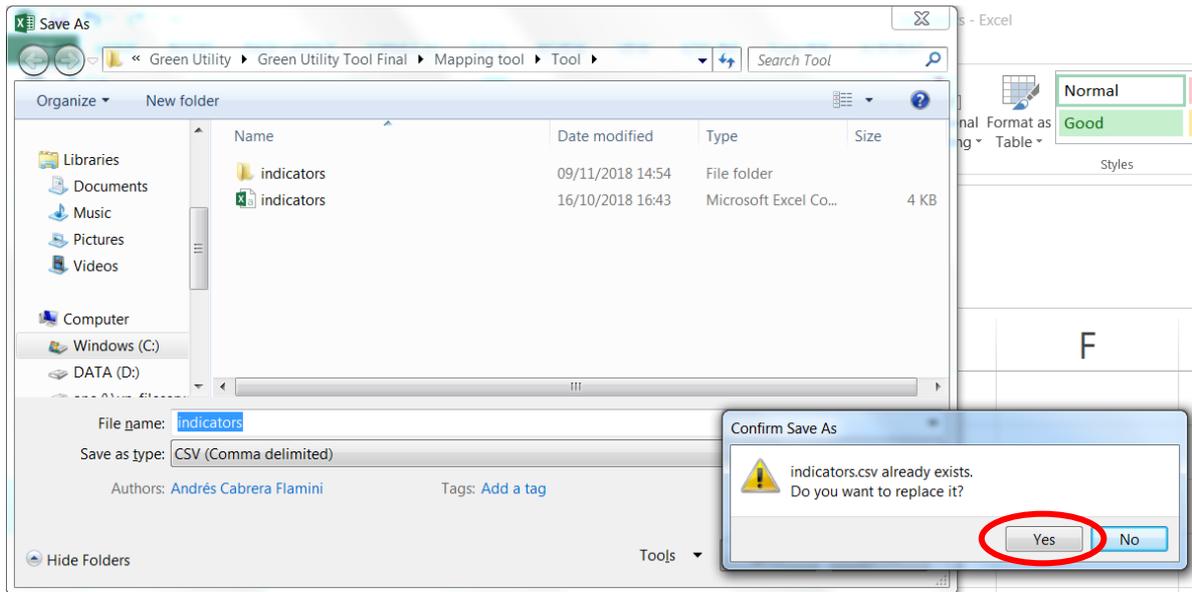
Once you are finished inputting the different items, you **must** follow the next steps when saving to ensure compatibility between your Excel file and the application:

- Close the Excel file so that you are prompted if you want to save your changes and click 'Save'. If you want to save your progress before closing, make sure you keep the '.csv' file extension (see below).

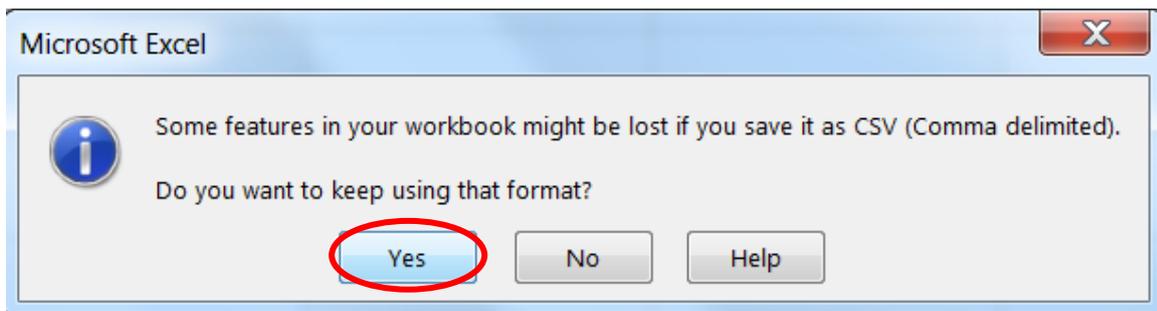
	A	B	C	D	E	F
1	Cluster					
2		Category				
3			Indicator 1			
4			Indicator 2			
5			Indicator 3			



- Save the 'indicators' Excel file in the **same location** with the **same name**. This will prompt the message 'indicators.csv already exists. Do you want to replace it?'. **Click Yes**.



- You will then receive the message prompt: ‘Some features in your workbook might be lost if you save it as CSV (Comma delimited). Do you want to keep using that format?’ **Click Yes.**



3. Running the GU Spider Chart

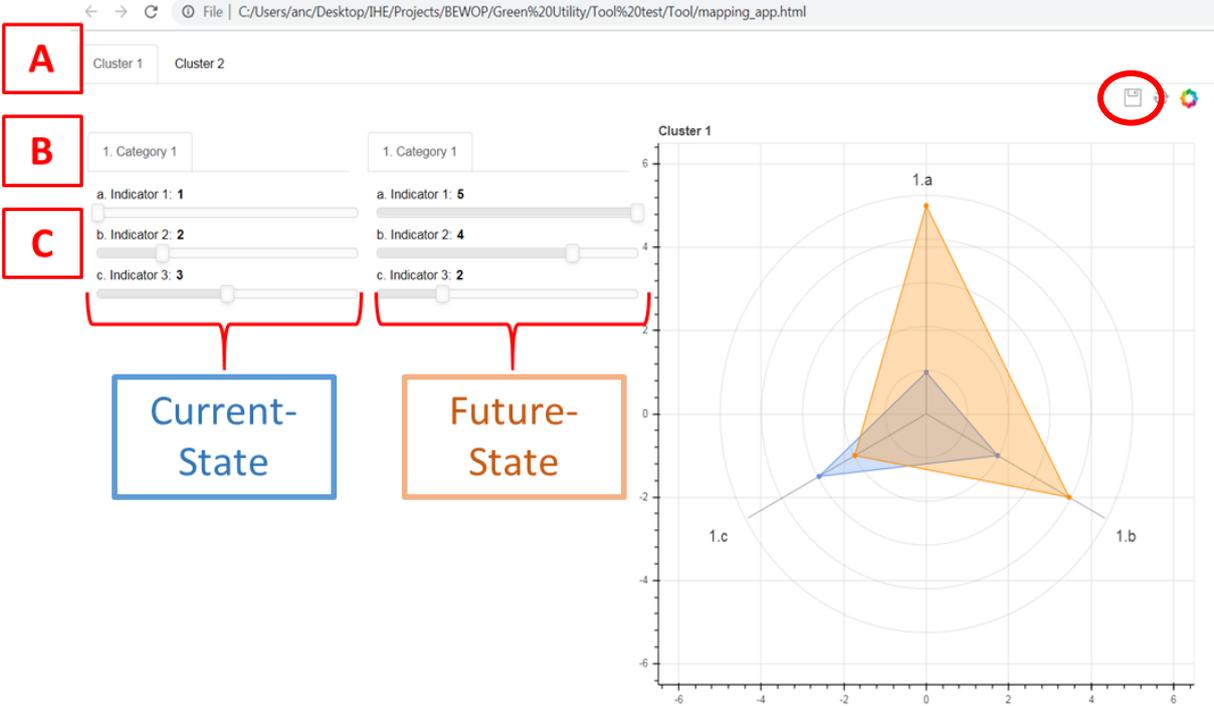
Once you have included the Clusters, Categories, and Indicators in your Excel file, you are now able to run the application to plot the Spider Chart. Double-click on the ‘runner’ file.

Name	Date modified	Type	Size
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This will cause a Prompt Window to pop-up. Please wait while the application loads and launches a new Tab in Google Chrome.

```
C:\windows\system32\cmd.exe
C:\Users\anc\Desktop\IHE\Projects\BEWOP\Green Utility\Green Utility Tool Final\Mapping tool\Tool>indicators\python.exe indic_plot_36.py
```

The Spider Chart Tab on Google Chrome will look like the image below:



From here, you can click on the relevant Cluster (A), then select the relevant Category (B) from which the Indicators will appear with a sliding bar underneath (C). The Category column on the left side relates to the Current-State level of the indicators, and the right side on the Future-State level. In the Spider Chart, the blue-shading relates to Current-State and the orange-shading to Future-State. As the approach used for mapping the current and future-states is qualitative (See Steps 4 and 5 of the Green Utility Toolkit), the scale used ranges from 1-5, with 1 being the lowest and 5 being the highest. The desired number can be selected by clicking on the sliding bar or dragging the sliding bar. In the upper right-hand side of the page, there is a save button (in the image above circled in red) which downloads an image file (.png) of the Spider Chart.

4. Example of a GU Spider Chart

Below is an example of the 'indicators' Excel file with its respective Spider Chart for the Social Cluster.

	A	B	C	D	E	F	G	H	I	J
45	Social									
46		Population with easy access to water services								
47		Water Coverage - In-house Connections								
48		Water Coverage – Public Water Points								
49		Long-term plans for service expansion, linked with foreseen population change/growth								
50		Prioritization of Environmental Processes								
51		Staff involved full-time in environmental / sustainability aspects								
52		Staff involved part-time in environmental / sustainability aspects								
53		Role of staff involved for a and b								
54		Department(s)/area(s) responsible for environmental / sustainability aspects								
55		Internal funding dedicated to environmental aspects								
56		Human Resources Management								
57		skills and training strategy for all staff								
58		annual appraisal and target setting system for managers								
59		annual appraisal and target setting system for all staff								
60		reward and recognition programme for all staff								
61		ability to recruit and dismiss staff (within an agreed plan)								
62		Staff training								
63		Staff trained in the last 1 to 4 years								
64		Staff trained in green (environmental/sustainability) processes in the last 1 to 4 years								
65										

File | C:/Users/anc/Desktop/IHE/Projects/BEWOP/Green%20Utility/Green%20Utility%20Tool%20Final/Mapping%20tool/Tool/mapping_app.html

Operational Environmental Social

1. Population with easy access to water services	1. Population with easy access to water services
2. Long-term plans for service expansion, linked with foreseen population change/growth	2. Long-term plans for service expansion, linked with foreseen population change/growth
3. Prioritization of Environmental Processes	3. Prioritization of Environmental Processes
4. Human Resources Management	4. Human Resources Management
5. Staff training	5. Staff training
a. Staff trained in the last 1 to 4 years: 2	a. Staff trained in the last 1 to 4 years: 3
b. Staff trained in green (environmental/sustainability) processes in the last 1 to 4 years: 1	b. Staff trained in green (environmental/sustainability) processes in the last 1 to 4 years: 4

