

TABLE OF ASSESSMENT CRITERIA FOR CIRCULAR ECONOMY PROJECTS - REV. 3.0

These criteria are based on the explanation given in the circular economy action plan [COM(2015) 614], where circular economy is explained as an economy *'where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised'*. The cost (€/year) as an intermediate indicator is a mean to harmonize the different metrics and to easily arrive at a coherent and transparent ranking list.

	A	B	C	D	E	F	
	N.	CRITERION	Explanation	Metrics	Additional parameters	Assessment indicator	Weight
PRODUCTION	1	ECO- Design	Re-shaping the first stage of an industrial process (Product design) in order to reduce the waste generated AND/OR increase the life of the final product	Kg/year of virgin material avoided through the new process AND/OR by the prolongation of the product's life	Economic value of the virgin material (€/Kg)	Metrics x additional parameter (€/year)	10
	2	New production process accepting "secondary raw material"	Replacement, total or partial, of virgin material with "secondary raw material"	Kg/year of virgin material avoided through the new process	Economic value of the virgin material (€/Kg)	Metrics x additional parameter (€/year)	8
CONSUMPTION	3	RE-Use, Re-Manufacturing, Refurbishment,	Prolongation of the life of a certain product that otherwise will be disposed	Kg/year of virgin material avoided by the prolongation of the product's life	Economic value of the virgin material (€/Kg)	Metrics x additional parameter (€/year)	8
DISPOSAL	5	Mass of waste resources recovered and re-introduced in a production cycle as secondary raw material	The new process generates waste that can be re-used in the same process or in another production process	Kg/year	Economic value of the secondary raw material(€/Kg) minus Cost of its transport to the production site (€/Kg) (*)	Metrics x additional parameter (€/year)	8
	6	Project promoting waste recycling	Promotional campaign with a specific target producing a specific waste	Waste produced by the target Kg/year	Cost of disposal (€/Kg)	Metrics x additional parameter (€/year)	6
ENVIRONMENTAL CRITERIA	7	"Net Energy balance respect to the previous system" or "Amount of energy recovered"	Energy (KWh) used in the old process <u>per unit of product</u> divided by energy used in the new process for the same unit of product	Number that can be lower or higher than 1	/	Metrics (the number in column C)	1 (the assessment indicator is "per se" a weight)
	8	Reduction of emissions	Emissions of CO2 (**) generated by the old process <u>per unit of product</u> divided by emissions used in the new process for the same unit of product	Number that can be lower or higher than 1		Metrics (the number in column C)	
SOCIAL CRITERION	9	Net balance of jobs	Number of new jobs created by the circular economy project, minus the number of jobs lost in the previous linear process	N = Number of full time working units (can be positive or negative)	P = Number of full time working units in the old process	$1 + \frac{N}{P}$	
Applicants may select only one of these two boxes		Implementation of "CIRCULAR PROCUREMENT" in the project (tick the box if relevant)		The weight of the related project is increased by 50%			
		Educational projects targeted to relevant stakeholders (tick the box if relevant)		The weight of the related project is increased by 20%			

(*) In case the secondary raw material does not have a final destination but is just "put on the market", the weight is reduced from 8 to 7

(**) In case of other pollutants, a table of equivalence should be used to convert them into CO2 equivalent emissions - <https://climatechangeconnection.org/emissions/co2-equivalents/>

Assessment procedure *(Example in the following pages)*

Applicants should:

- 1) Select the item in which their project falls - only one among the options from 1 to 6;
- 2) clearly describe the project and its metrics as requested in column C;
- 3) Declare and prove the economic value of the materials/cost of disposal by using current market prices, as requested in column D; 4) Provide the information related to the environmental and social criteria, as requested in rows 7, 8 and 9.

Circular procurement or educational projects should anyway enable or facilitate a project falling in one of the option from 1 to 6, thus the relevant box should be selected and the same above procedure should be completed.

Assessors should:

- 1) Verify the compliance to the above instructions and the congruence of the metrics declared with respect to the project description;
- 2) Verify that the economic value/costs are adequately proven.
- 3) Multiply the metrics of the chosen criterion (only one among the options from 1 to 6) per its additional parameter, thus obtaining a value expressed in €/year.
- 4) Multiply such a value for the assessment indicator 7, then for the indicator 8 and finally for the indicator 9, obtaining a value in €/year that can be higher or lower than the previous one;
- 5) Verify if one of the boxes "circular procurement " or "educational project" and apply the related weight.

EXAMPLE OF APPLICATION

The following example shows how the “*intermediate*” cost indicator is used only to harmonize different metrics and therefore allows to compare different kinds of projects; it disappears at the end, where the circularity of one project respect one or more others is expressed by a pure number.

Project 1

A company producing a product X has a current annual production of 1500 units and 19 workers. The company submits a project for a re-design of its products in order to reduce the amount of raw materials needed for the production. The right option is the N.1 “ECO-Design”

The project contains a detailed list of the raw materials avoided through the new design process, together with their value at the current market prices (that are adequately proven). Such a list shows, for each new unit, a total of 4 kg of material avoided respect to the previous project, having a value of 10,05€.

The amount of energy used in the new process will be 250 Kwh per unit, while the current process needs 275 Kwh per unit

The current amount of equivalent CO₂ generated per each unit produced is 12,432 Kg, while the new process will generate 11,025 Kg.

The new process will imply the reduction of personnel from 19 to 18, for the same amount of production, thus Number of new employees N=-1, Number of current employees P=19.

Assessment of project 1

- Metrics (row 1, column C): 1500 units/year X 4Kg of raw materials avoided = 6000Kg/year
- Additional parameter: The average value of the material avoided is $10.05/4 = 2,512 \text{ €/kg}$
- Assessment indicator (step 1) = $6000\text{Kg/year} \times 2,512 \text{ €/kg} = 15.072,00 \text{ €/year}$
- Environmental criterion 7 = $275 \text{ Kwh}/250 \text{ Kwh} = 1,100$
- Environmental criterion 8 = $12,432 \text{ Kg} / 11,025 \text{ Kg} = 1,127$
- Social criterion 9 = $1 + (-1/19) = 0,947$
- Assessment indicator (step2) = $15.072,00\text{€/year} \times 1,100 \times 1,127 \times 0,947 = 17.694,47 \text{ €/year}$
- Circular Procurement NO
- Educational Project NO
- Weight of criterion 1 = 10
- Final assessment = $17.694,47 \times 10 = 176.944,70 \text{ €/year}$

Project 2

A not-for profit organisation submit a project foreseeing a promotional campaign targeted to the public authorities of the Region XX to collect the obsolete/damaged furniture of their offices usually disposed in landfills, that will be partially (the obsolete ones) put in a second-hand furniture market and partially (the damaged ones) put in the market of the secondary raw materials. The project also foresees a specific training targeted to the officers of public authorities on how to launch public calls for the re-use their other obsolete materials before disposing them.

The application contains a study showing that all the public offices in the Region XX change in average 825 furniture pieces per year, the average weight of the single piece is 17,74 Kg for a total disposed mass of $825 \times 17,74 = 14.635,50$ Kg per year. The study also demonstrates that in the Region XX the average total cost of disposal of office furniture is € 0,87/Kg.

The not-for profit organisation has currently 3 full time employees and with the new project will hire 3 new full time employees.

The right option is the N.6 “Project promoting waste recycling” The box “Educational project targeted to relevant stakeholders” is marked due to the training of public officers. Criteria 7 and 8 are not applicable and have the “neutral” value 1. P = current full time personnel= 3; N = number of new employees = 3

Assessment of project 2

- Metrics (row 6, column C): 14.635,50Kg/year avoided to be disposed in landfills
- Additional parameter: Cost of disposal = 0,87 €/kg
- Assessment indicator (step 1) = $14.635,50 \text{ Kg/year} \times 0,87 \text{ €/kg} = 12.732,89 \text{ €/year}$
- Environmental criterion 7 = not applicable = 1
- Environmental criterion 8 = not applicable = 1
- Social criterion 9 = $1 + (3/3) = 2$
- Assessment indicator (step2) = $12.732,89 \text{ €/year} \times 1,00 \times 1,00 \times 2,00 = 25.465,77 \text{ €/year}$
- Circular Procurement NO
- Educational Project YES
- Weight of criterion 6 = 6, further increased by 20% = 7,2
- Final assessment = $25.465,77 \times 7,2 = 183.353,54 \text{ €/year}$

Comparing the circularity of the two projects

$$\text{Project 2 is } \frac{183.353,54 \text{ €/year}}{176.944,70 \text{ €/year}} = \mathbf{1,036} \text{ times more circular than Project1}$$

The above circularity criterion should be added to the usual criteria adopted for the projects’ assessment

(Note: In case of several projects the procedure is the same and the circularity of each project will be compared against the one having the highest value)