Interreg Mediterranean
IMPULSE PLUS

Project co-financed by the European Regional Development Fund

A3.4 Fine-tuning for transferring
Energy renovation planning tool

KPIs' processor PLUG-IN tool

GENERALITAT VALENCIANA
Vicepresidència Segona i Conselleria d'Habitatge i Arquitectura Bioclimàtica

IVE
INSTITUT VALENCIÀ de l'EDIFICACIÓ
INSTITUTO VALENCIANO de la EDIFICACIÓN

Project co-financed by the European Regional Development Fund

CONTEXT

This tool is an improved version of the tool previously developed in the framework of the IMPULSE project.

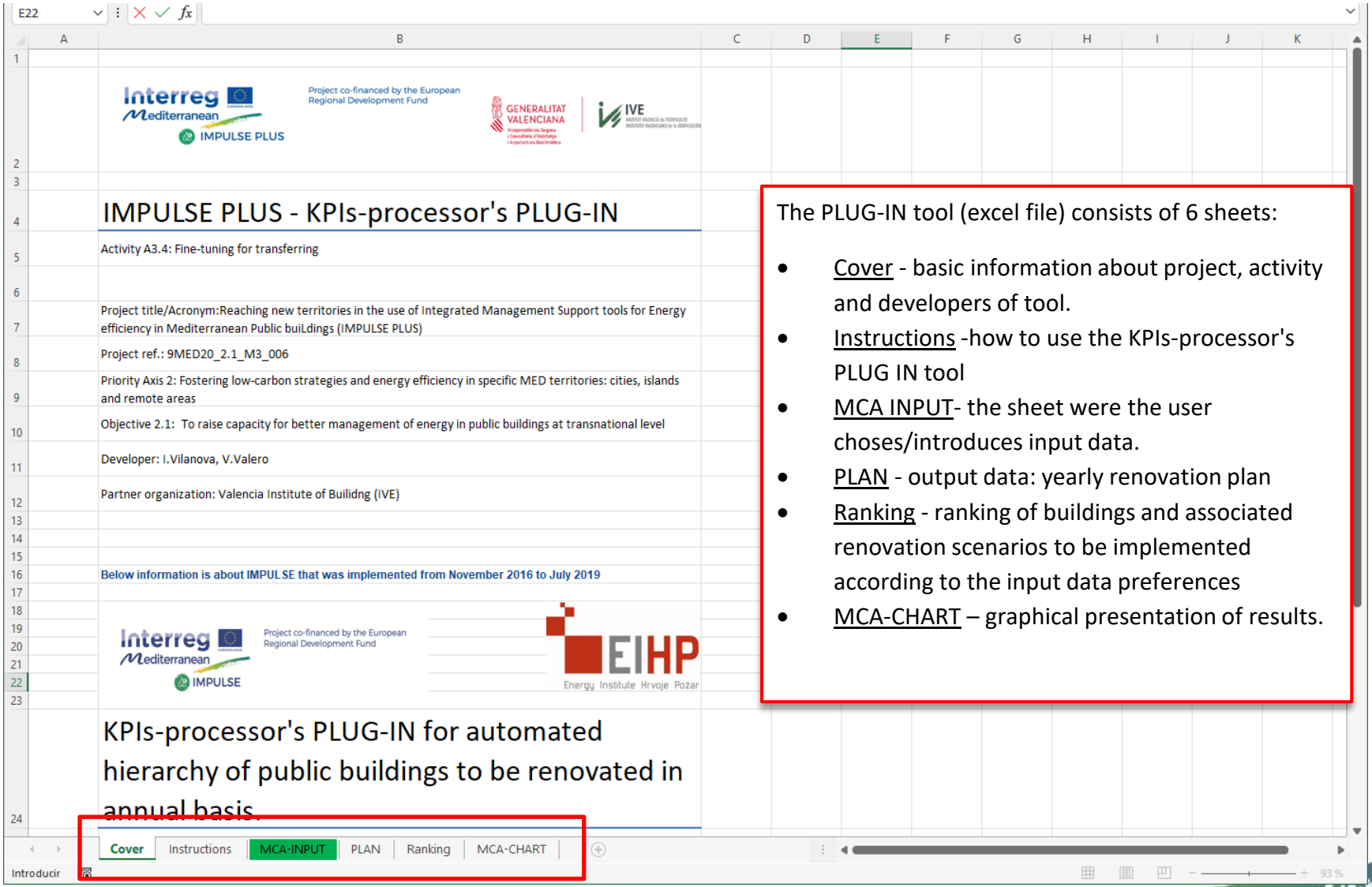
One of the activities foreseen under the IMPULSE PLUS project was to implement the modifications and adjustments necessary to adapt the KPIs-processor's PLUG-IN tool to the specific contexts of the new receivers' territories, under a transnational and cooperative approach, and in line with EU energy directives (EPBD and EDD) amendments, as well as the new commitments set by the EU in the Renovation Wave Strategy and the European Green Deal.

OBJECTIVE

The objective of KPIs-processor's PLUG-IN tool is to recognize the most affordable pathways for renovating, at least, 3% of building-stock area annually, based on each territory recognized typologies and their respective renovation scenarios associated with energy and cost indicators.

The excel-based tool automatically calculates yearly renovation plan for a public administration's building-stock according to specified input data and excel KPIs database previously calculated based on the public-building stock typification and their associated energy performance upgrading scenarios.

It is important to highlight that this tool can be used only if minor to deep renovation scenarios planned in KPIs-processor is gradual. E.g. Deep retrofit scenario is consist of the major retrofit scenario and additional energy efficiency measures, Major retrofit scenario is consist of the medium retrofit scenario and additional ee measures



The PLUG-IN tool (excel file) consists of 6 sheets:

- Cover - basic information about project, activity and developers of tool.
- Instructions -how to use the KPIs-processor's PLUG IN tool
- MCA INPUT- the sheet were the user choses/introduces input data.
- PLAN - output data: yearly renovation plan
- Ranking - ranking of buildings and associated renovation scenarios to be implemented according to the input data preferences
- MCA-CHART – graphical presentation of results.

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INSTRUCTIONS ON THE USE OF THE KPIs-processor's PLUG-IN tool

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The PLUG IN tool excel file consists of 6 sheets.
Cover - basic information about deliverable and developers of tool.
Instructions -how to use the KPIs-processor's PLUG IN tool
MCA INPUT- the sheet were the user choses input data.
PLAN - output data: yearly renovation plan
Ranking - ranking of buildings and associated renovation scenarios to be implemented according to the input data preferencies
MCA-CHART – graphical presentation of results.

The instructions for PLUG IN tool are specified below.

INSTRUCTIONS FOR EACH WORKSHEET

SHEET: MCA-INPUT

In the sheet MCA – INPUT, yellow cells are enabled input data, green cells are enabled to choose from drop down lists, and orange

Cover | Instructions | MCA-INPUT | PLAN | Ranking | MCA-CHART

Listo 96 %

L28

Name of Excel CITY/REGION File	D3.4.1_KPIs_ELCHE_en_rev2.xlsx

Key Performance Indicators - Units	Weight factor
2. Total annual primary energy consumption - kWh/yr	100
7. Annual generation of Renewable Energy - KWh/m²/yr	0
9. Total annual CO2 emissions - kg/m²/yr	0
23. Total annual primary energy savings - KWh/m²/yr	0
54. Total investment cost per total annual energy saved - National	0

Other ponderable categories	Option	Weighting (± 30%)
Building Typology	PBT1	0%
Type of Retrofit	Deep retrofit	0%
RES	RES	0%

Only applies on 7, 8, 32, 33 and/or 34 KPIs.

Baseline year	0
Relative annual retrofitting area	3%
Total floor area (m²)	166.011
Annual retrofitting area (m²)	4.980

TARGETS check	
CO2 reduction (%)	0%
kWh reduction (%)	0%
RES share (%)	0%

Renovation scenarios	Combination
Minor	10%
Medium	30%
Major	75%
Deep	100%

LIMITS check	
Annual Investment	0 €

	Minor retrofit	Medium retrofit	Major retrofit	Deep retrofit
PBT1	✓	✓	✓	✓
PBT2	✓	✓	✓	✓
PBT3	✓	✓	✓	✓
PBT4	✓	✓	✓	✓
PBT5	✓	✓	✓	✓
PBT6	✓	✓	✓	✓
PBT7	✓	✓	✓	✓
PBT8	✓	✓	✓	✓
PBT9	✓	✓	✓	✓
PBT10	✓	✓	✓	✓
PBT11	✓	✓	✓	✓
PBT12	✓	✓	✓	✓
PBT13	✓	✓	✓	✓
PBT14	✓	✓	✓	✓
PBT15	✓	✓	✓	✓

Building and associated scenario to be excluded from the initial sample

Cover | Instructions | MCA-INPUT | PLAN | Ranking | MCA-CHART

Listo

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L28

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Introduce their weight factors. The sum of weight factors must be 100.

L28

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PBT12	✓	✓	✓	✓
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Step 3:

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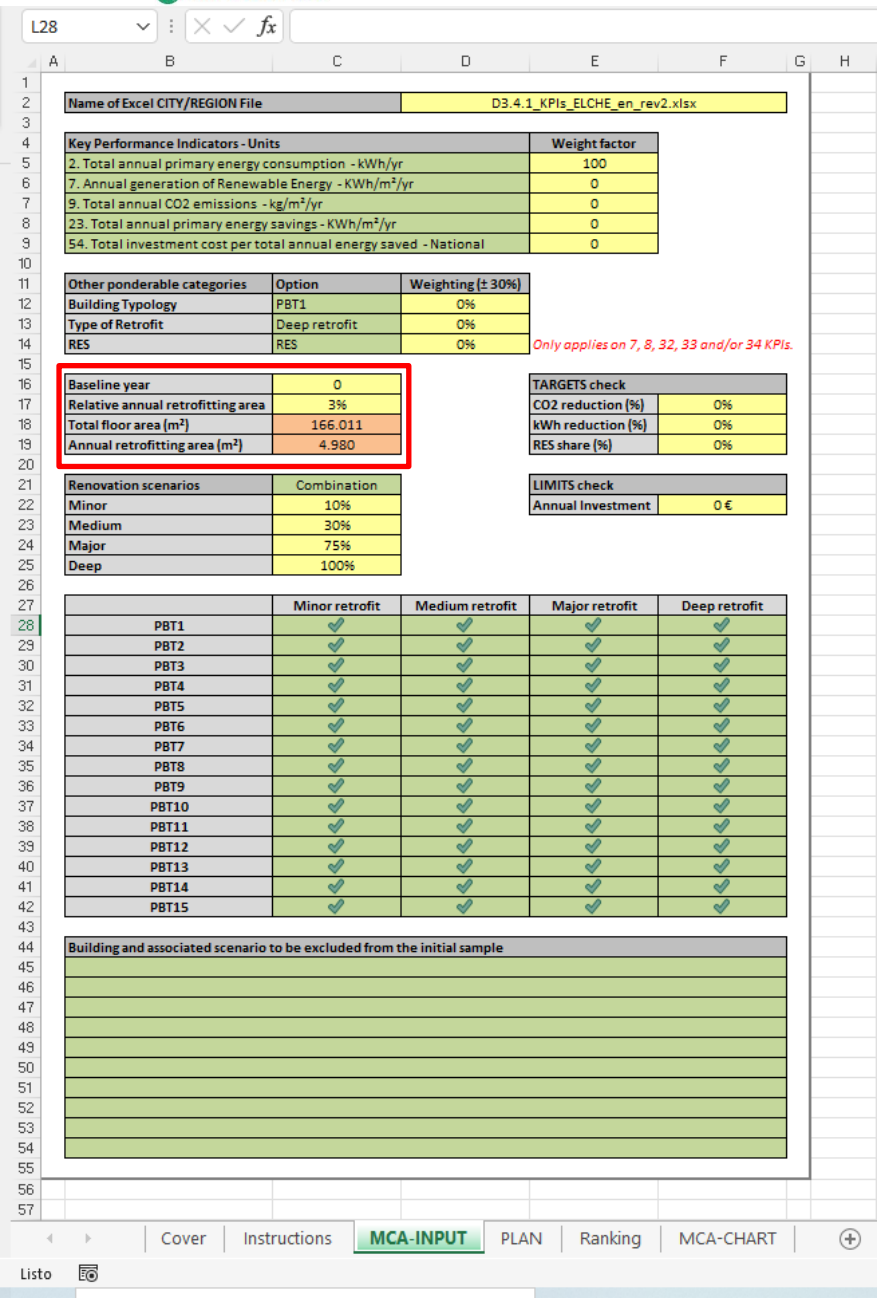
Weighting factors, all of them up to +/- 30%.



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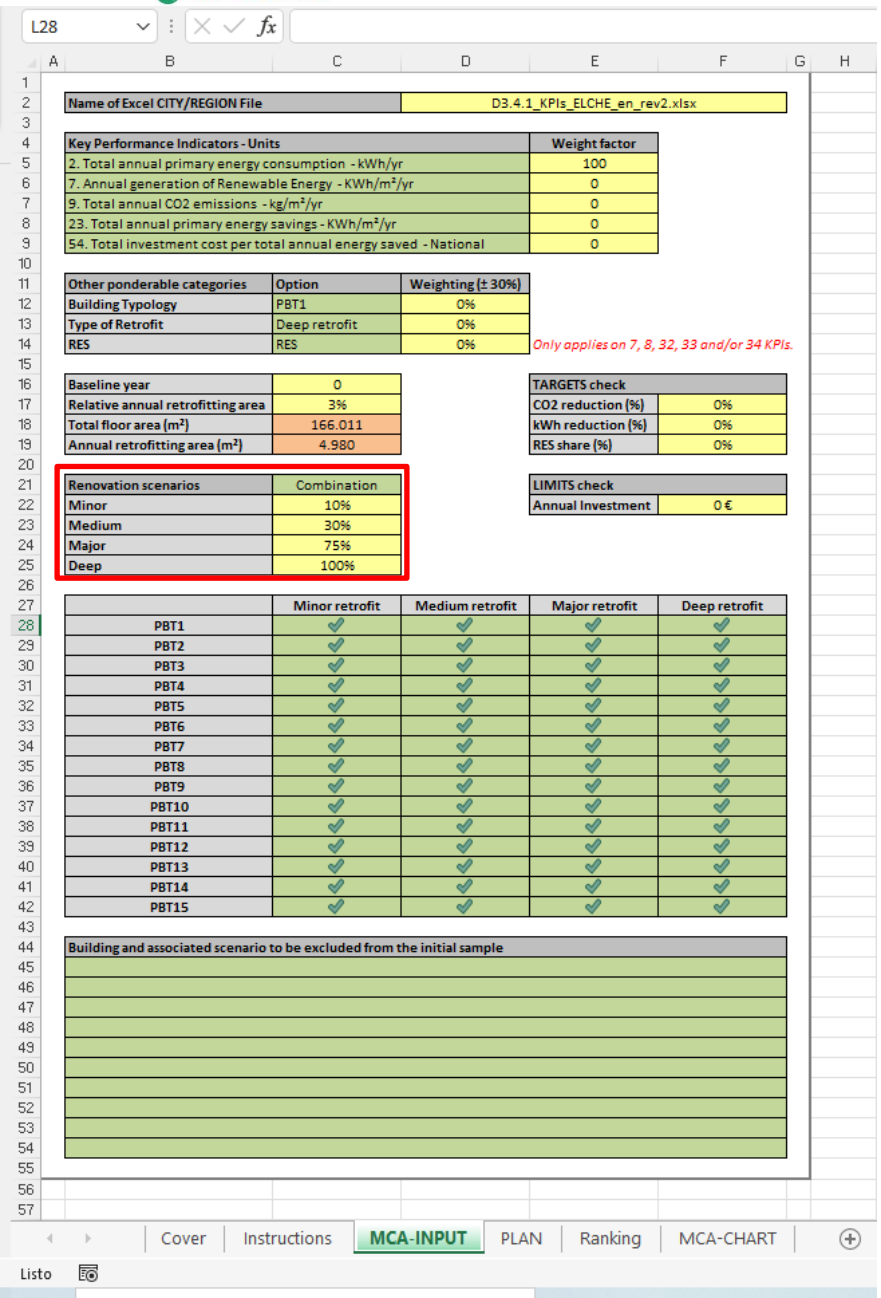

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PBT14	✓	✓	✓	✓
PBT15	✓	✓	✓	✓

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Excel file must be necessarily open during the use of the planning tool.

Step 2:

Chose up to 5 KPIs (drop-down list)

Introduce their weighting factors. The sum of weight factors must be 100.

Step 3:

Optional: other 3 ponderable categories (Public Building Typologies, Retrofit scenarios or Renewable Energy Sources)

Weighting factors, all of them up to +/- 30%.

Step 4:

Enter the baseline year. Renovation plan will start in the following year.

The second data to input is the percentage floor area we plan to retrofit annually.

Step 5:

Selection of the retrofit options we are going to work with (Minor, Medium, Mayor, Deep, Combination)

Yellow cells below present the factor that decrees floor area of building by the type of retrofit.

L28

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Step 5:

Selection of the retrofit options we are going to work with (Minor, Medium, Mayor, Deep, Combination)

Yellow cells below present the factor that decrees floor area of building by the type of retrofit.

Step 6:

Select PBT and retrofit scenario you want to consider for the calculation and presentation (select or unselect, input 1 or 0)

L28

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Key Performance Indicators - Units	Weight factor
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Optional: other 3 ponderable categories (Public Building Typologies, Retrofit scenarios or Renewable Energy Sources)

Weighting factors, all of them up to +/- 30%.

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Selection of the retrofit options we are going to work with (Minor, Medium, Mayor, Deep, Combination)

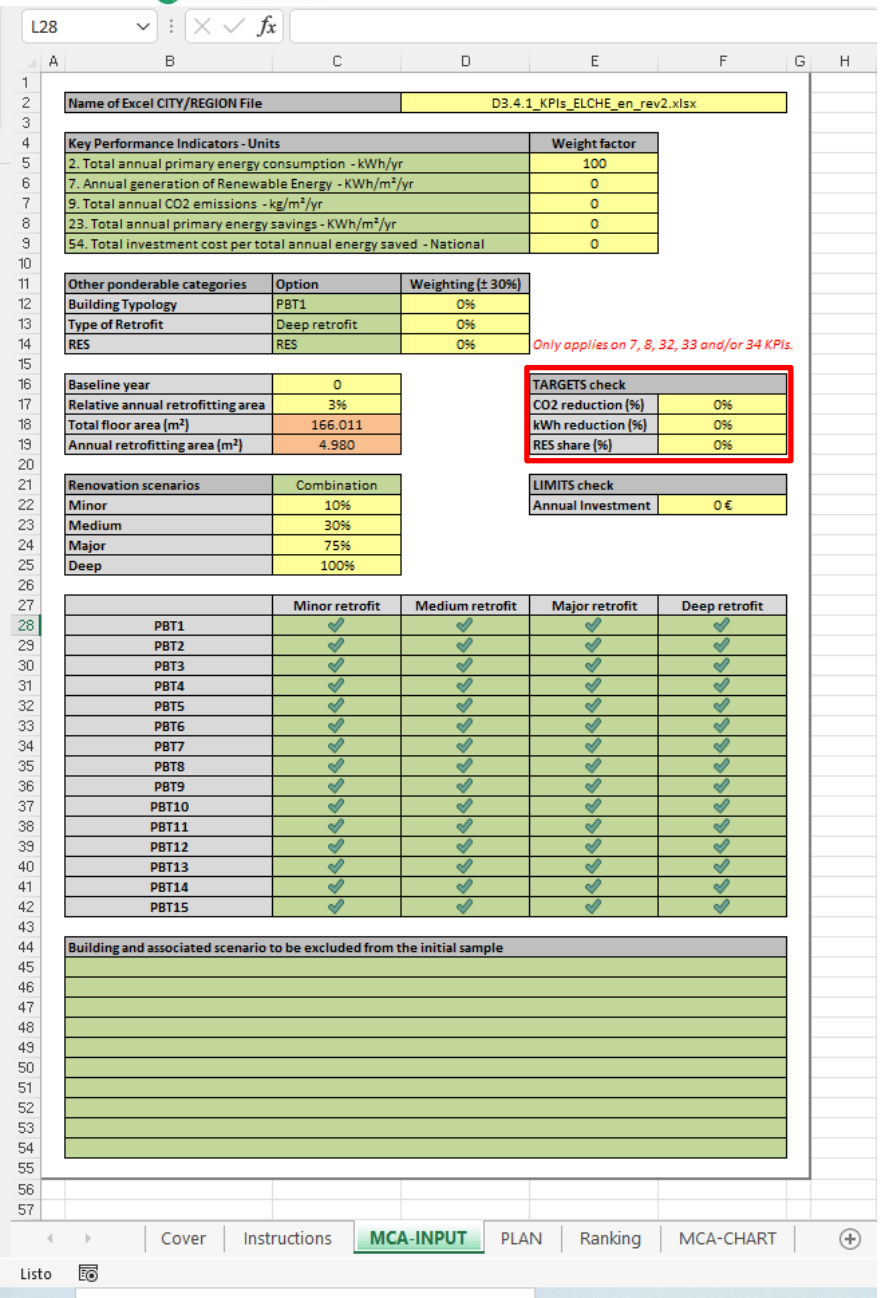
Yellow cells below present the factor that decrees floor area of building by the type of retrofit.

Step 6:

Select PBT and retrofit scenario you want to consider for the calculation and presentation (select or unselect, input 1 or 0)

Step 7:

Select up to 10 combinations of building with associated retrofit scenario to be excluded from the calculation and presentation.



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7. Annual generation of Renewable Energy - KWh/m²/yr	0
9. Total annual CO2 emissions - kg/m²/yr	0
23. Total annual primary energy savings - KWh/m²/yr	0
54. Total investment cost per total annual energy saved - National	0

Other ponderable categories	Option	Weighting (± 30%)
Building Typology	PBT1	0%
Type of Retrofit	Deep retrofit	0%
RES	RES	0%

Only applies on 7, 8, 32, 33 and/or 34 KPIs.

Baseline year	0
Relative annual retrofitting area	3%
Total floor area (m²)	166.011
Annual retrofitting area (m²)	4.980

TARGETS check	
CO2 reduction (%)	0%
kWh reduction (%)	0%
RES share (%)	0%

Renovation scenarios	Combination
Minor	10%
Medium	30%
Major	75%
Deep	100%

LIMITS check	
Annual Investment	0 €

	Minor retrofit	Medium retrofit	Major retrofit	Deep retrofit
PBT1	✓	✓	✓	✓
PBT2	✓	✓	✓	✓
PBT3	✓	✓	✓	✓
PBT4	✓	✓	✓	✓
PBT5	✓	✓	✓	✓
PBT6	✓	✓	✓	✓
PBT7	✓	✓	✓	✓
PBT8	✓	✓	✓	✓
PBT9	✓	✓	✓	✓
PBT10	✓	✓	✓	✓
PBT11	✓	✓	✓	✓
PBT12	✓	✓	✓	✓
PBT13	✓	✓	✓	✓
PBT14	✓	✓	✓	✓
PBT15	✓	✓	✓	✓

Building and associated scenario to be excluded from the initial sample

Cover | Instructions | MCA-INPUT | PLAN | Ranking | MCA-CHART

Listo

In the sheet MCA – INPUT, yellow cells are enabled input data, green cells are enabled to choose from drop down lists, and orange cells are output data automatically calculated.

Step 1:

Insert the name of the KPIs excel file.

Excel file must be necessarily open during the use of the planning tool.

Step 2:

Chose up to 5 KPIs (drop-down list)

Introduce their weighting factors. The sum of weight factors must be 100.

Step 3:

Optional: other 3 ponderable categories (Public Building Typologies, Retrofit scenarios or Renewable Energy Sources)

Weighting factors, all of them up to +/- 30%.

Step 4:

Enter the baseline year. Renovation plan will start in the following year.

The second data to input is the percentage floor area we plan to retrofit annually.

Step 5:

Selection of the retrofit options we are going to work with (Minor, Medium, Mayor, Deep, Combination)

Yellow cells below present the factor that decrees floor area of building by the type of retrofit.

Step 6:

Select PBT and retrofit scenario you want to consider for the calculation and presentation (select or unselect, input 1 or 0)

Step 7:

Select up to 10 combinations of building with associated retrofit scenario to be excluded from the calculation and presentation.

Step 8:

Introduce plan targets to be achieved for CO2 emission reduction (%), Primary Energy Consumption reduction (%), and the share of public-building stock Primary Energy consumption covered by Renewable Energies (%).

L28

Name of Excel CITY/REGION File	D3.4.1_KPIs_ELCHE_en_rev2.xlsx

Key Performance Indicators - Units	Weight factor
2. Total annual primary energy consumption - kWh/yr	100
7. Annual generation of Renewable Energy - KWh/m²/yr	0
9. Total annual CO2 emissions - kg/m²/yr	0
23. Total annual primary energy savings - KWh/m²/yr	0
54. Total investment cost per total annual energy saved - National	0

Other ponderable categories	Option	Weighting (± 30%)
Building Typology	PBT1	0%
Type of Retrofit	Deep retrofit	0%
RES	RES	0%

Only applies on 7, 8, 32, 33 and/or 34 KPIs.

Baseline year	0
Relative annual retrofitting area	3%
Total floor area (m²)	166.011
Annual retrofitting area (m²)	4.980

TARGETS check	
CO2 reduction (%)	0%
kWh reduction (%)	0%
RES share (%)	0%

Renovation scenarios	Combination
Minor	10%
Medium	30%
Major	75%
Deep	100%

LIMITS check	
Annual Investment	0 €

	Minor retrofit	Medium retrofit	Major retrofit	Deep retrofit
PBT1	✓	✓	✓	✓
PBT2	✓	✓	✓	✓
PBT3	✓	✓	✓	✓
PBT4	✓	✓	✓	✓
PBT5	✓	✓	✓	✓
PBT6	✓	✓	✓	✓
PBT7	✓	✓	✓	✓
PBT8	✓	✓	✓	✓
PBT9	✓	✓	✓	✓
PBT10	✓	✓	✓	✓
PBT11	✓	✓	✓	✓
PBT12	✓	✓	✓	✓
PBT13	✓	✓	✓	✓
PBT14	✓	✓	✓	✓
PBT15	✓	✓	✓	✓

Building and associated scenario to be excluded from the initial sample

Cover | Instructions | MCA-INPUT | PLAN | Ranking | MCA-CHART

Listo

In the sheet MCA – INPUT, yellow cells are enabled input data, green cells are enabled to choose from drop down lists, and orange cells are output data automatically calculated.

Step 1:

Insert the name of the KPIs excel file.

Excel file must be necessarily open during the use of the planning tool.

Step 2:

Chose up to 5 KPIs (drop-down list)

Introduce their weighting factors. The sum of weight factors must be 100.

Step 3:

Optional: other 3 ponderable categories (Public Building Typologies, Retrofit scenarios or Renewable Energy Sources)

Weighting factors, all of them up to +/- 30%.

Step 4:

Enter the baseline year. Renovation plan will start in the following year.

The second data to input is the percentage floor area we plan to retrofit annually.

Step 5:

Selection of the retrofit options we are going to work with (Minor, Medium, Mayor, Deep, Combination)

Yellow cells below present the factor that decrees floor area of building by the type of retrofit.

Step 6:

Select PBT and retrofit scenario you want to consider for the calculation and presentation (select or unselect, input 1 or 0)

Step 7:

Select up to 10 combinations of building with associated retrofit scenario to be excluded from the calculation and presentation.

Step 8:

Introduce plan targets to be achieved for CO2 emission reduction (%), Primary Energy Consumption reduction (%), and the share of public-building stock Primary Energy consumption covered by Renewable Energies (%).

Step 9:

Enter yearly public budget allocated for investment in energy renovation for public buildings

L28

Name of Excel CITY/REGION File	D3.4.1_KPIs_ELCHE_en_rev2.xlsx

Key Performance Indicators - Units	Weight factor
2. Total annual primary energy consumption - kWh/yr	100
7. Annual generation of Renewable Energy - KWh/m²/yr	0
9. Total annual CO2 emissions - kg/m²/yr	0
23. Total annual primary energy savings - KWh/m²/yr	0
54. Total investment cost per total annual energy saved - National	0

Other ponderable categories	Option	Weighting (± 30%)
Building Typology	PBT1	0%
Type of Retrofit	Deep retrofit	0%
RES	RES	0%

Only applies on 7, 8, 32, 33 and/or 34 KPIs.

Baseline year	0
Relative annual retrofitting area	3%
Total floor area (m²)	166.011
Annual retrofitting area (m²)	4.980

Renovation scenarios	Combination
Minor	10%
Medium	30%
Major	75%
Deep	100%

TARGETS check	
CO2 reduction (%)	0%
kWh reduction (%)	0%
RES share (%)	0%
LIMITS check	
Annual Investment	0 €

	Minor retrofit	Medium retrofit	Major retrofit	Deep retrofit
PBT1	✓	✓	✓	✓
PBT2	✓	✓	✓	✓
PBT3	✓	✓	✓	✓
PBT4	✓	✓	✓	✓
PBT5	✓	✓	✓	✓
PBT6	✓	✓	✓	✓
PBT7	✓	✓	✓	✓
PBT8	✓	✓	✓	✓
PBT9	✓	✓	✓	✓
PBT10	✓	✓	✓	✓
PBT11	✓	✓	✓	✓
PBT12	✓	✓	✓	✓
PBT13	✓	✓	✓	✓
PBT14	✓	✓	✓	✓
PBT15	✓	✓	✓	✓

Building and associated scenario to be excluded from the initial sample

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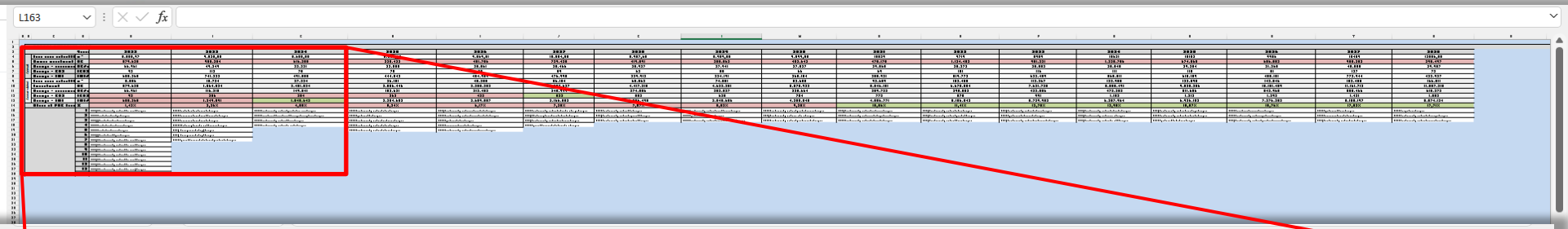
Listo

- Input data shaded in **red** directly affect the calculation of the renovation plan.
- Input data shaded in **blue** allow to check in which year the defined targets are reached.



ANNUAL RETROFIT PLAN

		Years	2022	2023	2024
Annual	Floor area retrofitted	m²	8.885,97	9.838,00	8.600,00
	Annual investment	NC	879.620	985.204	616.200
	Savings - currency	NC/yr	66.961	49.249	33.331
	Savings - CO2	tCO2/yr	93	113	78
	Savings - kWh	kWh/yr	608.268	741.323	491.050
Accumulated	Floor area retrofitted	m²	8.886	18.724	27.324
	Investment	NC	879.620	1.864.824	2.481.024
	Savings - currency	NC/yr	66.961	116.210	149.541
	Savings - CO2	tCO2/yr	93	206	284
	Savings - kWh	kWh/yr	608.268	1.349.591	1.840.642
	Share of PEC from RE	%	1,43%	3,36%	4,50%
		1	PBT12 - Preschool and primary school El Palmeral - nº4 - Deep retrofit	PBT4 - Nursery School Rosa Fernández - Deep retrofit	PBT3 - Preschool and primary school Miguel de Unamuno - Deep retrofit
		2	PBT4 - Nursery School Don Cri		
		3	PBT11 - Nursery School San An		
		4	PBT4 - Nursery School Don Ho		
		5	PBT4 - Nursery School Don Juli		
		6	PBT11 - Nursery School Els Xig		
		7	PBT12 - Preschool and primary		
		8	PBT12 - Preschool and primary		
		9	PBT12 - Preschool and primary		
		10	PBT12 - Preschool and primary		
		11	PBT12 - Preschool and primary		
		12	PBT12 - Preschool and primary		
		13	PBT12 - Preschool and primary		

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Columns from E to X present the annual gradual renovation plan according to to the data entered in the previous steps.

The information in rows from 4 to 8, in same columns, present:

- yearly floor area presumed for retrofit
- investments costs
- Savings (in terms of emissions (CO2), primary energy consumption (kWh/yr) and energy costs (NC/yr)

The information show in rows from 9 to 13, present accumulated data for the same items.

The information in row 14, in same columns, presents the share (%) of primary energy consumption covered by renewable energies, for the entire stock of public buildings, each year, considering the energy efficiency measures implemented so far.

The information from row 15 up to 175, in each column (E to X), shows the name of the buildings and associated retrofit scenarios to be implemented in this year.

When operating the tool with the combination of several possible levels of retrofitting scenarios, when a "lower/lesser" retrofitting scenario appears after than a "higher/upper" scenario, the tool automatically removes it from the ranking.

ANNUAL RETROFIT PLAN

		Years	2022	2023	2024
Annual	Floor area retrofitted	m²	8.885,97	9.838,00	8.600,00
	Annual investment	NC	879.620	985.204	616.200
	Savings - currency	NC/yr	66.961	49.249	33.331
	Savings - CO2	tCO2/yr	93	113	78
	Savings - kWh	kWh/yr	608.268	741.323	491.050
Accumulated	Floor area retrofitted	m²	8.886	18.724	27.324
	Investment	NC	879.620	1.864.824	2.481.024
	Savings - currency	NC/yr	66.961	116.210	149.541
	Savings - CO2	tCO2/yr	93	206	284
	Savings - kWh	kWh/yr	608.268	1.349.591	1.840.642
	Share of PEC from RE	%	1,43%	3,36%	4,50%
		1	PBT12 - Preschool and primary school El Palmeral - nº4 - Deep retrofit	PBT4 - Nursery School Rosa Fernández - Deep retrofit	PBT3 - Preschool and primary school Miguel de Unamuno - Deep retrofit
		2	PBT4 - Nursery School Don Crispín - Deep retrofit	PBT6 - Sociocultural Centre Poeta M. Hernández - Deep retrofit	PBT4 - Cultural Center L'Escorxador and Municipal Training Center - Deep retrofit
		3	PBT11 - Nursery School San Antonio - Deep retrofit	PBT6 - Sociocultural Centre Valverde - Deep retrofit	PBT2 - Preschool and primary school Els Garrofers - Deep retrofit
		4	PBT4 - Nursery School Don Honorio - Deep retrofit	PBT4 - Adult Training Center Ramón Gil Bonanza - Deep retrofit	PBT2 - Preschool and primary school Raimon Llull - Deep retrofit
		5	PBT4 - Nursery School Don Julio - Deep retrofit	PBT10 - Municipal office building 1 - Deep retrofit	
		6	PBT11 - Nursery School Els Xiquets - Deep retrofit	PBT10 - Municipal office building 2 - Deep retrofit	
		7	PBT12 - Preschool and primary school El Palmeral - nº8 - Deep retrofit	PBT4 - Special Education Public Center Virgen de la Luz - Deep retrofit	
		8	PBT12 - Preschool and primary school El Palmeral - nº7 - Deep retrofit		
		9	PBT12 - Preschool and primary school El Palmeral - nº6 - Deep retrofit		
		10	PBT12 - Preschool and primary school El Palmeral - nº5 - Deep retrofit		
		11	PBT12 - Preschool and primary school El Palmeral - nº3 - Deep retrofit		
		12	PBT12 - Preschool and primary school El Palmeral - nº2 - Deep retrofit		
		13	PBT12 - Preschool and primary school El Palmeral - nº1 - Deep retrofit		

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The cells in row 5, referring to the annual investment required, are shaded in red when the budget limit set in the MCA-INPUT sheet, cell F22, is exceeded. Otherwise, when the investment is below the established limit, it is shaded in green.

Similarly, rows 12, 13 and 14 are shaded red when CO2 reduction, energy reduction, and RES share targets defined in respective cells F17, F18 and F19 of the MCA-INPUT sheet are not achieved and are shaded green when the defined targets are met.

Name of Excel CITY/REGION File	D3.4.1_KPIs_ELCHE_en_rev2.xlsx

Key Performance Indicators - Units	Weight factor
2. Total annual primary energy consumption - kWh/yr	100
7. Annual generation of Renewable Energy - KWh/m²/yr	0
9. Total annual CO2 emissions - kg/m²/yr	0
23. Total annual primary energy savings - KWh/m²/yr	0
54. Total investment cost per total annual energy saved - National	0

Other ponderable categories	Option	Weighting (± 30%)
Building Typology	PBT1	0%
Type of Retrofit	Deep retrofit	0%
RES	RES	30%

Only applies on 7, 8, 32, 33 and/or 34 KPIs.

Baseline year	2021
Relative annual retrofitting area	5%
Total floor area (m²)	166.011
Annual retrofitting area (m²)	8.301

TARGETS check	
CO2 reduction (%)	20%
kWh reduction (%)	15%
RES share (%)	10%

LIMITS check	
Annual Investment	200.000 €

Renovation scenarios	Combination
Minor	10%
Medium	30%
Major	75%
Deep	100%

	Minor retrofit	Medium retrofit	Major retrofit	Deep retrofit
PBT1	✓	✓	✓	✓
PBT2	✓	✓	✓	✓
PBT3	✓	✓	✓	✓
PBT4	✓	✓	✓	✓
PBT5	✓	✓	✓	✓

	Ranking - buildings	Building floor area (m^2)	Final Score
1	PBT12 - Preschool and primary school El Palmeral - nº4 - Deep retrofit	351,34	100,00
2	PBT4 - Nursery School Don Crispín - Deep retrofit	968,84	99,86
3	PBT11 - Nursery School San Antonio - Deep retrofit	851,00	96,97
4	PBT4 - Nursery School Don Honorio - Deep retrofit	1.024,00	94,48
5	PBT4 - Nursery School Don Julio - Deep retrofit	1.024,00	94,48
6	PBT11 - Nursery School Els Xiquets - Deep retrofit	984,79	83,79
7	PBT12 - Preschool and primary school El Palmeral - nº8 - Deep retrofit	440,00	79,85
8	PBT12 - Preschool and primary school El Palmeral - nº7 - Deep retrofit	440,00	79,85
9	PBT12 - Preschool and primary school El Palmeral - nº6 - Deep retrofit	440,00	79,85
10	PBT12 - Preschool and primary school El Palmeral - nº5 - Deep retrofit	440,00	79,85
11	PBT12 - Preschool and primary school El Palmeral - nº3 - Deep retrofit	440,00	79,85
12	PBT12 - Preschool and primary school El Palmeral - nº2 - Deep retrofit	440,00	79,85
13	PBT12 - Preschool and primary school El Palmeral - nº1 - Deep retrofit	440,00	79,85
14	PBT6 - Social Centre Palmerales - Deep retrofit	602,00	77,16
15	PBT4 - Nursery School Rosa Fernández - Deep retrofit	1.260,00	76,78
16	PBT6 - Sociocultural Centre Poeta M. Hernández - Deep retrofit	605,85	76,67
17	PBT6 - Sociocultural Centre Valverde - Deep retrofit	648,00	71,69
18	PBT4 - Adult Training Center Ramón Gil Bonanza - Deep retrofit	1.670,00	57,93
19	PBT10 - Municipal office building 1 - Deep retrofit	997,15	40,81
20	PBT10 - Municipal office building 2 - Deep retrofit	1.003,00	40,57
21	PBT12 - Preschool and primary school El Palmeral - nº4 - Major Retrofit	351,34	35,08
22	PBT12 - Preschool and primary school El Palmeral - nº4 - Medium Retrofit	351,34	35,08
23	PBT12 - Preschool and primary school El Palmeral - nº4 - Minor Retrofit	351,34	32,71
24	PBT12 - Preschool and primary school El Palmeral - nº8 - Major Retrofit	440,00	28,01
25	PBT12 - Preschool and primary school El Palmeral - nº7 - Major Retrofit	440,00	28,01
26	PBT12 - Preschool and primary school El Palmeral - nº6 - Major Retrofit	440,00	28,01
27	PBT12 - Preschool and primary school El Palmeral - nº5 - Major Retrofit	440,00	28,01
28	PBT12 - Preschool and primary school El Palmeral - nº3 - Major Retrofit	440,00	28,01
29	PBT12 - Preschool and primary school El Palmeral - nº2 - Major Retrofit	440,00	28,01
30	PBT12 - Preschool and primary school El Palmeral - nº1 - Major Retrofit	440,00	28,01
31	PBT12 - Preschool and primary school El Palmeral - nº8 - Medium Retrofit	440,00	28,01
32	PBT12 - Preschool and primary school El Palmeral - nº7 - Medium Retrofit	440,00	28,01
33	PBT12 - Preschool and primary school El Palmeral - nº6 - Medium Retrofit	440,00	28,01
34	PBT12 - Preschool and primary school El Palmeral - nº5 - Medium Retrofit	440,00	28,01
35	PBT12 - Preschool and primary school El Palmeral - nº3 - Medium Retrofit	440,00	28,01
36	PBT12 - Preschool and primary school El Palmeral - nº2 - Medium Retrofit	440,00	28,01
37	PBT12 - Preschool and primary school El Palmeral - nº1 - Medium Retrofit	440,00	28,01
38	PBT4 - Special Education Public Center Virgen de la Luz - Deep retrofit	3.654,00	26,48

Cover | Instructions | MCA-INPUT | PLAN | Ranking | MCA-CHART

Listo

The table presents the intervention ranking of all building considering the input data from tables 2,3,5,6 and 7 in MCA-INPUT worksheet: chosen indicators, weighting factors of those indicators, other ponderable categories considered, selected building type and level of retrofit, and building and associated retrofit scenarios excluded.

Name of Excel CITY/REGION File	D3.4.1_KPIs_ELCHE_en_rev2.xlsx

Key Performance Indicators - Units	Weight factor
2. Total annual primary energy consumption - kWh/yr	100
7. Annual generation of Renewable Energy - KWh/m²/yr	0
9. Total annual CO2 emissions - kg/m²/yr	0
23. Total annual primary energy savings - KWh/m²/yr	0
54. Total investment cost per total annual energy saved - National	0

Other ponderable categories	Option	Weighting (± 30%)
Building Typology	PBT1	0%
Type of Retrofit	Deep retrofit	0%
RES	RES	30%

Only applies on 7, 8, 32, 33 and/or 34 KPIs.

Baseline year	2021
Relative annual retrofitting area	5%
Total floor area (m^2)	166.011
Annual retrofitting area (m^2)	8.301

TARGETS check	
CO2 reduction (%)	20%
kWh reduction (%)	15%
RES share (%)	10%

Renovation scenarios	Combination
Minor	10%
Medium	30%
Major	75%
Deep	100%

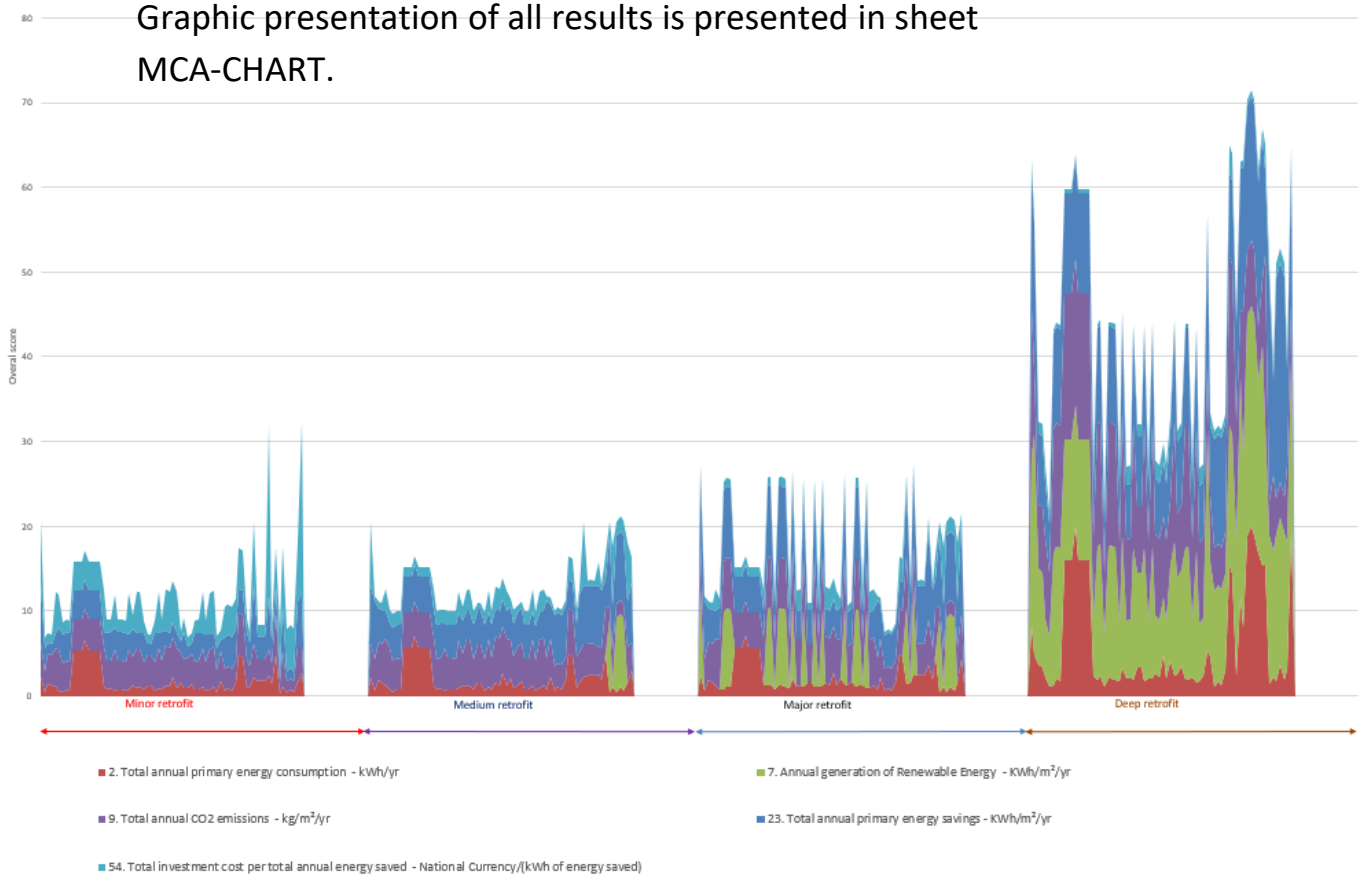
LIMITS check	
Annual Investment	200.000 €

	Minor retrofit	Medium retrofit	Major retrofit	Deep retrofit
PBT1	✓	✓	✓	✓
PBT2	✓	✓	✓	✓
PBT3	✓	✓	✓	✓
PBT4	✓	✓	✓	✓
PBT5	✓	✓	✓	✓
PBT6	✓	✓	✓	✓
PBT7	✓	✓	✓	✓
PBT8	✓	✓	✓	✓
PBT9	✓	✓	✓	✓
PBT10	✓	✓	✓	✓
PBT11	✓	✓	✓	✓
PBT12	✓	✓	✓	✓
PBT13	✓	✓	✓	✓
PBT14	✓	✓	✓	✓
PBT15	✓	✓	✓	✓

Building and associated scenario to be excluded from the initial sample

Cover | Instructions | MCA-INPUT | PLAN | Ranking | MCA-CHART

Graphic presentation of all results is presented in sheet MCA-CHART.



Cover | Instructions | MCA-INPUT | PLAN | Ranking | MCA-CHART

Listo | Configuración de visualización | 60 %

Project co-financed by the European Regional Development Fund

Thank you

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Valencia Institute of Building

More info:

- https://impulse.interreg-med.eu/
- http://www.five.es/project/impulse/
- https://youtu.be/wItHh_w-iWE
- https://youtu.be/XFu-FQB7hUk