

# LIFE SUPERHERO Socio-economic impact

**16 January 2025 – BAU Fair** Eng. Elena Gracia Iguacel Hispalyt

Specific assessment for estimating the employment growth and indirect economic effects in Spain, France and Italy

#### Same scenario as life SUPERHERO proposal:

•Only refurbished buildings are considered for the socio-economic impact assessment

•European roofing tile industry is currently using the 50% of their productive capacity, on average, due to the building crisis of the last years. There will be a saturation of existing production lines without employment growths

•The employment growth is calculated regarding the personnel necessary for the refurbishment of the additional roofs in Europe





Specific assessment for estimating the employment growth and indirect economic effects in Spain, France and Italy

## • Same scenario as life SUPERHERO proposal:

• The diffusion of Best Practices on HBR will imply an additional refurbishment rate linked to HBR that will contribute to increase the total refurbishment rate of buildings (0,35% in year 7, 0,78% in year 8, 1,22% in year 9)

	Unit	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Refurbishment rate as usual	Rate/y	1,20%	1,20%	1,20%	1,20%	1,20%	1,20%	1,20%	1,20%	1,20%
Renovation additional rate due promoting SUPERHERO	Rate/y	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,35%	0,78%	1,22%
Renovation rate total	Rate/y	1,20%	1,20%	1,20%	1,20%	1,20%	1,20%	1,55%	1,98%	2,42%



Specific assessment for estimating the employment growth and indirect economic effects in Spain, France and Italy

#### Starting data:

Clay roof surface related to additional refurbishment rate linked to HBR
Installer time employed in laying 1 square meter of HBR
Price for 1 square meter of HBR package

## HBR roof pakage: Clay roofing tiles, fittings and components



Hip fittings Ridge fittings Valley fittings Verge fittings Plain tile fittings Ornamental tiles



Ridge and Hip systems





Valley systems



Eaves systems



Abutment systems



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## **Starting data:**

Clay roof surface related to additional refurbishment rate linked to HBR
Installer time employed in laying 1 square meter of HBR
Price for 1 square meter of HBR package.

## **HBR Baseline definition:**

Rectangular HBR, 12m (building width) x 8m (building depth), sloped 30%

- Ridge length, 12 meters
- o Eaves length, 24 meters
- Verge length, 9 meters
- Roofing tiles fittings:
  - Chimney tile1 unit
  - Ridge ends 2 units
  - Ridge tiles, 12 meters
  - Verge tiles, 9 meters





## Quantification of the roofing surface in Spain

#### Population (left) and Built-up area (in sq km, right) by degree of urbanisation

	1975	1990	2000	2015	1975	1990	2000	2015
Urban centres	15 589 217	<b>17 263 613</b>	18 636 093	22 126 929	1 284.85	1 569.63	<b>1 933.34</b>	<b>2 241.94</b>
	(43%)	(44%)	(46%)	(48%)	(28.00%)	(26.20%)	(26.10%)	(26.40%)
Urban clusters	<b>10 971 317</b>	<b>12 377 714</b>	12 355 110	13 560 952	1 687.95	2 188.32	2 583.98	2 855.26
	(31%)	(32%)	(30%)	(29%)	(36.80%)	(36.50%)	(34.90%)	(33.70%)
Rural grid	9 341 495	9 543 198	9 750 998	<b>10 425 989</b>	<b>1 609.81</b>	<b>2 230.06</b> (37.20%)	<b>2 889.58</b>	3 385.79
cells	(26%)	(24%)	(24%)	(23%)	(35.10%)		(39.00%)	(39.90%)
Total	35 902 029	39 184 525	40 742 200	46 113 870	4 582.60	5 988.01	7 406.90	8 482.98

#### Spain



- Urban centre: density of at least 1500 inhabitants per km2.
- Urban cluster: density of at least 300 inhabitants per km2.
- Rural area: density below 300
  inhabitants per km2



GHS-BUILT-S spatial raster dataset that delineates the dispersion of built-up surfaces, quantified in terms of square meters (Global Human Settlement Layer)

## **Quantification of the roofing surface in France**

#### Population (left) and Built-up area (in sq km, right) by degree of urbanisation

	1975	1990	2000	2015	1975	1990	2000	2015
Urban centres	<b>20 305 288</b> (38%)	<b>21 613 641</b> (38%)	<b>22 021 606</b> (37%)	23 081 310 (36%)	<b>3 257.74</b> (26.30%)	3 787.76 (22.80%)	<b>4 069.40</b> (20.30%)	<b>4 240.46</b> (18.10%)
Urban clusters	13 740 839 (26%)	14 368 861 (25%)	14 996 663 (25%)	16 330 336 (25%)	<b>3 511.27</b> (28.30%)	<b>4 522.97</b> (27.20%)	<b>5 398.44</b> (26.90%)	6 321.23 (26.90%)
Rural grid cells	18 979 481 (36%)	<b>20 973 257</b> (37%)	22 381 096 (38%)	<b>24 996 846</b> (39%)	<b>5 629.84</b> (45.40%)	8 329.76 (50.10%)	<b>10 626.23</b> (52.90%)	<b>12 899.49</b> (55.00%)
Total	53 025 609	56 955 760	59 399 365	64 408 492	12 398.85	16 640.49	20 094.07	23 461.18

#### France

Urban centre 👘 Urban cluster 👘 Rural grid cell



- Urban centre: density of at least 1500 inhabitants per km2.
- Urban cluster: density of at least 300 inhabitants per km2.
- Rural area: density below 300 inhabitants per km2



GHS-BUILT-S spatial raster dataset that delineates the dispersion of built-up surfaces, quantified in terms of square meters (Global Human Settlement Layer)

## **Quantification of the roofing surface in Italy**

Population (left) and Built-up area (in sq km, right) by degree of urbanisation

	1975	1990	2000	2015	1975	1990	2000	2015
Urban centres	<b>19 962 514</b> (36%)	<b>20 465 953</b> (36%)	<b>20 493 590</b> (36%)	<b>21 072 428</b> (35%)	2 396.14 (26.80%)	<b>2 666.43</b> (24.60%)	<b>2 962.02</b> (23.30%)	<b>3 143.75</b> (22.10%)
Urban clusters	<b>18 564 065</b> (34%)	<b>20 470 917</b> (36%)	<b>21 006 790</b> (37%)	<b>23 363 589</b> (39%)	<b>3 070.87</b> (34.40%)	<b>3 739.75</b> (34.50%)	<b>4 261.87</b> (33.60%)	<b>4 835.91</b> (34.00%)
Rural grid cells	16 759 317 (30%)	<b>16 092 570</b> (28%)	<b>15 668 772</b> (27%)	<b>15 385 007</b> (26%)	<b>3 472.57</b> (38.80%)	<b>4 426.71</b> (40.90%)	5 462.97 (43.10%)	6 226.20 (43.80%)
Total	55 285 895	57 029 440	57 169 151	59 821 024	8 939.58	10 832.88	12 686.87	14 205.87



- Urban centre: density of at least 1500 inhabitants per km2.
- Urban cluster: density of at least 300 inhabitants per km2.
- Rural area: density below 300
  inhabitants per km2



GHS-BUILT-S spatial raster dataset that delineates the dispersion of built-up surfaces, quantified in terms of square meters (Global Human Settlement Layer)

## **Employment growth in Spain**

### **Starting data:**

ROOFING TILES	SPAIN				
INSTALLER	hours/m2	€/hours	€/m2		
1st officer of workers	0,51	22,36	11,40		
Specialized Workforce	0,51	20,80	10,61		

Km <sup>2</sup> BUILT-UP AREAS 2015	SPAIN
Urban centers	2.21,94
Urban clusters	2.855,26
Rural areas	3.385,79
Totals	8.482,99

#### **Indirect impact on employment growth in Spain:**

	Unit	Year 7	Year 8	Year 9	Total
Renovation additional rate due promoting SUPERHERO	Rate/year	0,35%	0,78%	1,22%	2,35%
Renovation additional surface due promoting SUPERHERO	km²/year	20,96	66,17	103,49	190,62
Employment growth roofing tiles installers	Job/year	6.158	19.439	30.403	56.000
1st officer of workers	Mill €/year	239	755	1.180	2.174
Employment growth roofing tiles installers	Job/year	6.158	19.439	30.403	56.000
Specialized workforce	Mill €/year	222	702	1.098	2.022



## **Employment growth in France**

### Starting data:

ROOFING TILES	FRANCE				
INSTALLER	hours/m2	€/hours	€/m2		
Head of workers	0,38	45,00	17,10		
Specialized Workforce	1,13	35,00	39,55		

Km <sup>2</sup> BUILT-UP AREAS 2015	FRANCE
Urban centers	4.240,46
Urban clusters	6.321,23
Rural areas	12.899,49
Totals	23.461,18

#### **Indirect impact on employment growth in France:**

	Unit	Year 7	Year 8	Year 9	Total
Renovation additional rate due promoting SUPERHERO	Rate/year	0,35%	0,78%	1,22%	2,35%
Renovation additional surface due promoting SUPERHERO	km²/year	82,11	183,00	286,23	551,34
Employment growth roofing tiles installers	Job/year	19.899	44.349	69.367	133.616
Head of workers	Mill €/y	1.404.	3.129.	4.894.	9.428
Employment growth roofing tiles installers	Job/year	59.174	131.881	206.275	397.330
Specialized workforce	Mill €/year	4.175	9.305	14.555	21.805



## **Employment growth in Italy**

## **Starting data:**

ROOFING TILES	ITALY				
INSTALLER	hours/m2	€/hours	€/m2		
Head of workers	0,40	45,00	18,0€		
Specialized Workforce	1,18	37,54	44,30€		

Km2 BUILT-UP AREAS 2015	ITALY
Urban centers	3.143,75
Urban clusters	4.835,91
Rural areas	6.226,20
Totals	14.205,86

#### Indirect impact on employment growth in Italy:

	Unit	Year 6	Year 7	Year 8	Total
Renovation additional rate due promoting SUPERHERO	Rate/year	0,35%	0,78%	1,22%	2,35%
Renovation additional surface due promoting SUPERHERO	km²/year	49,72	110,81	173,31	333,84
Employment growth roofing tiles installers	Job/year	11.456	25.532	39.933	76.922
Head of workers	Mill €/year	895	1.995	3.120	6.009
Employment growth roofing tiles installers	Job/year	33.796	75.320	117.803	226.919
Specialized workforce	Mill €/year	2.202	4.909	7.677.	14.788



## Indirect economic effects in Spain, France and Italy

#### **Price for 1 square meter of HBR package: Baseline definition:**

	Units	SPAIN		FRANCE			ITALY			
		yield	€/unit.	€/m2	yield	€/unit.	€/m2	yield	€/unit.	€/m2
HBR PACKAGE				20,19			38,57			37,22
Breathing underlayer	m2	1,10	3,30	3,63	1,10	13,45	14,80	1,10	5,75	6,33
wooden batten	m	4,60	1,06	4,88	4,63	1,77	8,20	2,96	2,15	6,37
Chipboard screw	Unit.	6,00	0,19	1,14	5,40	0,17	0,92	6,00	0,32	1,89
Galvanized screw	Unit.	10,00	0,05	0,50	12,20	0,15	1,83	10,00	0,08	0,83
Batten for ridge	m	0,13	1,06	0,13	0,10	47,00	4,70	0,13	31,00	4,03
Ridge sealing	m	0,13	3,98	0,50	0,10	9,10	0,91	0,13	5,50	0,72
brackets for ridge	Unit.	0,20	1,45	0,29	0,26	3,00	0,78	0,00	0,00	0,00
Ridge clip	Unit.	0,32	0,63	0,20	0,30	0,25	0,08	0,54	16,80	9,07
Ridge tile	Unit.	0,32	12,41	3,97	0,30	4,31	1,29	0,33	11,66	3,85
Verge tiles		0,27	13,42	3,62	0,27	4,66	1,26	0,27	12,61	3,40
Ridge ends		0,02	37,25	0,75	0,02	14,00	0,29	0,02	35,00	0,70
Chimeneys		0,01	42,47	0,42	0,01	14,75	0,15	0,01	39,90	0,40
Anti-bird comb	m	0,20	0,81	0,16	0,25	13,50	3,38	0,20	3,78	0,76



## Indirect economic effects in Spain, France and Italy

#### **Starting data:**

	€/m2					
	SPAIN	FRANCE	ITALY			
HBR PACKAGE	20,19	38,57	37,22			

#### Indirect impact on economic effects in Spain, France and Italy:

	Unit	Year 6	Year 7	Year 8	Total
Renovation additional rate due promoting SUPERHERO	Rate/year	0,35%	0,78%	1,22%	2,35%
Renovation additional surface due promoting SUPERHERO SPAIN	km²/year	20,96	66,17	103,49	190,62
Total revenues for HBR package SPAIN	Mill €/year	423	1.336	2.089.	3.849
Renovation additional surface due promoting SUPERHERO FRANCE	km2/year	82,11	183,00	286,23	551,34
Total revenues for HBR package FRANCE	Mill €/year	3.148.	7.016	10.974	21.138
Renovation additional surface due promoting SUPERHERO ITALY	km2/year	49,72	110,81	173,31	333,84
Total revenues for HBR package ITALY	Mill €/year	1.918	4.274	6.685	12.876







# Thank You!



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