Environmental profile of building elements details per variant

1. Floor on solid ground

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9. *Summary*
Building professionals and the government currently have to resort to foreign environmental classification systems to acquire an insight into the Environmental Performance of Materials used in Buildings and Building Elements (MMG: Milieugerelateerde Materiaalprestatie van Gebouw(element)en). However, often the tools and information involved are not transparent and/or not specifically related to the Flemish-Belgian building context. This publication proposes a database of environmental profiles of 115 variants of building elements, all of which are specific for the Flemish-Belgian building context. It offers an open and transparent presentation of the MMG method of determination that was used as the basis for the calculation of the environmental profiles. Although the resulting building materials methodology is far from final, it is a dynamic model (including a determination method) that will be fine-tuned and expanded in the future. In that context, this publication should be perceived as a communication tool to facilitate the dialogue with stakeholders in the future.

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12. *Other titles on this subject*
Milieugerelateerde Materiaalprestatie van Gebouwelementen (MMG report) (www.ovam.be/bouwmaterialenmethodiek)

Environmental profile of building elements: details per variant

1. Floor on solid ground

Table V 1: overview of the composition of the variants “floor on solid ground”

(13)+ floor on ground: environmental impact per m² of floor, 10 types (from outside inwards =>)						
1	floor1_PUR05	sand	concrete new	PUR1 (injected over concrete): 5 cm (U = 0.40)	screed mix	fired clay tiles
2	floor2_PUR15	sand	concrete new	PUR2 (injected over concrete): 15 cm (U=0.15)	screed mix	fired clay tiles
3	floor3_XPS8	sand	concrete new+filling layer	XPS1 above the load-bearing floor: 4 cm (U=0.38)	screed mix	fired clay tiles
4	floor4_REC_PUR05	sand	concrete 100 recycled	PUR1 (injected over concrete): 5 cm (U = 0.40)	screed mix	fired clay tiles
5	floor5_trass lime	gravel+clay grains	trass lime (mortar)		screed mix	fired clay tiles
6	floor6_PUR04_screed floor EPS	sand	concrete new	PUR1 (injected over concrete): 4 cm (U=0.38)	insulating screed mix with EPS grains	fired clay tiles
7	floor7_PUR05_screed anhydrite	sand	concrete new	PUR1 (injected over concrete): 5 cm (U=0.41)	anhydrite	fired clay tiles
8	floor8_PUR05_ parquet	sand	concrete new	PUR1 (injected over concrete): 5 cm (U = 0.38)	screed mix	parquet
9	floor9_PUR05_ parquet	concrete	concrete new	PUR1 (injected over concrete): 5 cm (U = 0.38)	screed mix	parquet
10	floor10_cork08_ parquet	sand	concrete new+filling layer	cork: 8 cm	screed mix	parquet

Table CEN 1: overview of the individual CEN indicators for the variants 'floor on solid ground'

	climate change	ozone depletion	acidification (land)	eutrophication	photochem. oxidant form.	depletion non-fossil	depletion fossil
	kg CO2 eq	kg CFC-11 eq	kg SO2 eq	kg PO4--- eq	kg C2H4	kg Sb eq	MJ, net cal
Floor on ground							
floor1_PUR05	4.65E+02	3.04E-05	8.09E-01	2.87E-01	6.95E-02	2.15E-03	8.24E+03
floor2_PUR15	3.34E+02	1.94E-05	8.06E-01	2.90E-01	6.10E-02	2.14E-03	5.85E+03
floor3_XPS8	4.75E+02	4.12E-04	8.15E-01	2.85E-01	6.91E-02	2.15E-03	8.04E+03
floor4_REC_PUR05	4.65E+02	3.04E-05	8.08E-01	2.87E-01	6.95E-02	2.15E-03	8.24E+03
floor5_trass lime	3.80E+02	2.97E-05	1.42E+00	2.95E-01	8.26E-02	2.15E-03	6.59E+03
floor6_PUR04_screed floor EPS	7.18E+02	3.72E-05	1.30E+00	3.94E-01	9.12E-02	2.24E-03	1.02E+04
floor7_PUR05_screed anhydrite	4.64E+02	3.10E-05	8.17E-01	2.92E-01	7.04E-02	2.58E-03	8.36E+03
floor8_PUR05_parquet	3.78E+02	3.30E-04	5.53E-01	1.93E-01	4.42E-02	6.22E-04	5.80E+03
floor9_PUR05_parquet	3.77E+02	3.30E-04	5.48E-01	1.92E-01	4.40E-02	6.17E-04	5.77E+03
floor10_cork08_parquet	2.75E+02	3.21E-04	6.04E-01	2.10E-01	3.82E-02	6.39E-04	3.74E+03

Table CEN+ 1: overview of the individual CEN+ indicators for the variants 'floor on solid ground'

	human toxicity	particulate matter formation (PM)	ionising radiation (humans)	ecotox. (terrest-rial)	ecotox. (fresh water)	ecotox. (marine)	land occupation (forest)	land occupation (urban)	land transf. (nature)	land transf. (rainforest)	water
	DALY	DALY	DALY	kg 1.4 DB eq	kg 1.4 DB eq	kg 1.4 DB eq	species.yr	species.yr	species.yr	species.yr	m^3
Floor on ground											
floor1_PUR05	4,73E-05	7,93E-04	1,35E-06	1,97E-02	1,58E+00	1,71E+00	8,22E-05	5,28E-08	9,85E-08	3,34E-09	4,39E+00
floor2_PUR15	4,72E-05	7,85E-04	1,26E-06	2,09E-02	1,73E+00	1,66E+00	8,22E-05	3,89E-08	6,38E-08	2,12E-09	4,48E+00
floor3_XPS8	4,77E-05	7,92E-04	1,36E-06	2,70E-02	2,01E+00	1,78E+00	8,22E-05	5,35E-08	9,86E-08	3,32E-09	4,25E+00
floor4_REC_ PUR05	4,73E-05	7,93E-04	1,34E-06	1,97E-02	1,58E+00	1,71E+00	8,22E-05	5,12E-08	9,63E-08	3,30E-09	4,12E+00
floor5_trass lime	4,07E-05	1,20E-03	1,29E-06	2,22E-02	1,34E+00	1,49E+00	8,23E-05	5,35E-08	1,72E-07	5,06E-09	5,14E+00
floor6_PUR04_ screed floor EPS	5,87E-05	9,88E-04	1,64E-06	2,70E-02	1,96E+00	1,98E+00	8,22E-05	5,84E-08	1,09E-07	3,80E-09	5,25E+00
floor7_ PUR05_screed anhydrite	4,80E-05	8,06E-04	1,37E-06	2,06E-02	1,60E+00	1,74E+00	8,22E-05	5,07E-08	9,48E-08	4,21E-09	4,41E+00
floor8_PUR05_ parquet	3,02E-05	4,07E-04	1,12E-06	3,17E-02	1,53E+00	1,31E+00	3,21E-04	8,83E-08	1,14E-07	2,82E-09	2,12E+00
floor9_PUR05_ parquet	3,02E-05	4,03E-04	1,12E-06	3,16E-02	1,53E+00	1,30E+00	3,21E-04	8,47E-08	1,08E-07	2,79E-09	2,07E+00
floor10_ cork08_parquet	3,14E-05	4,33E-04	1,07E-06	3,40E-02	1,72E+00	1,30E+00	3,21E-04	8,77E-08	1,02E-07	1,87E-09	2,56E+00

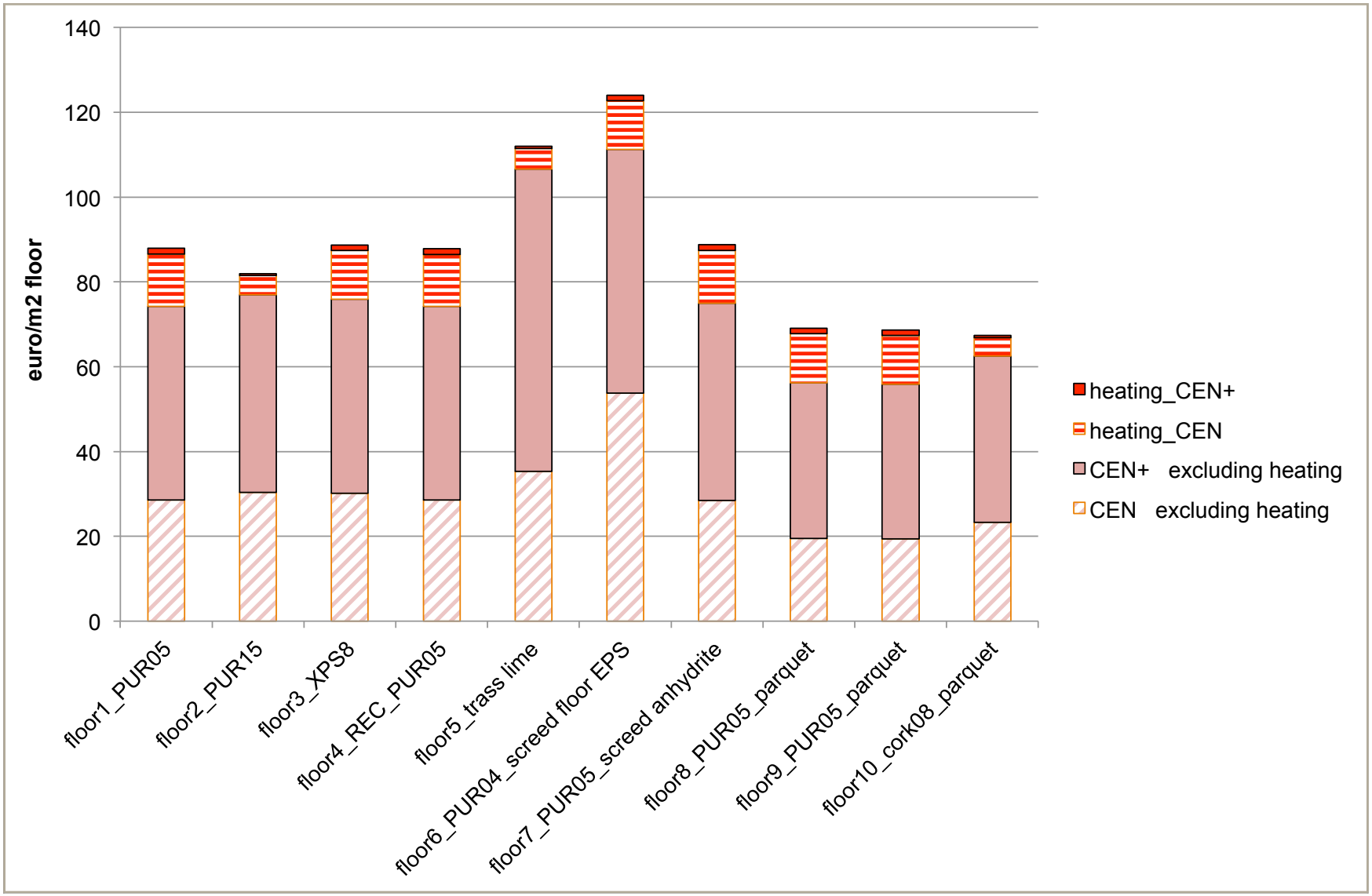

Figure E1: Aggregated environmental profiles (split up into CEN and CEN+) of several building element variants "floor on solid ground", expressed in monetary units and distinguishing between purely materials-related and heat-transfer-related environmental impact.

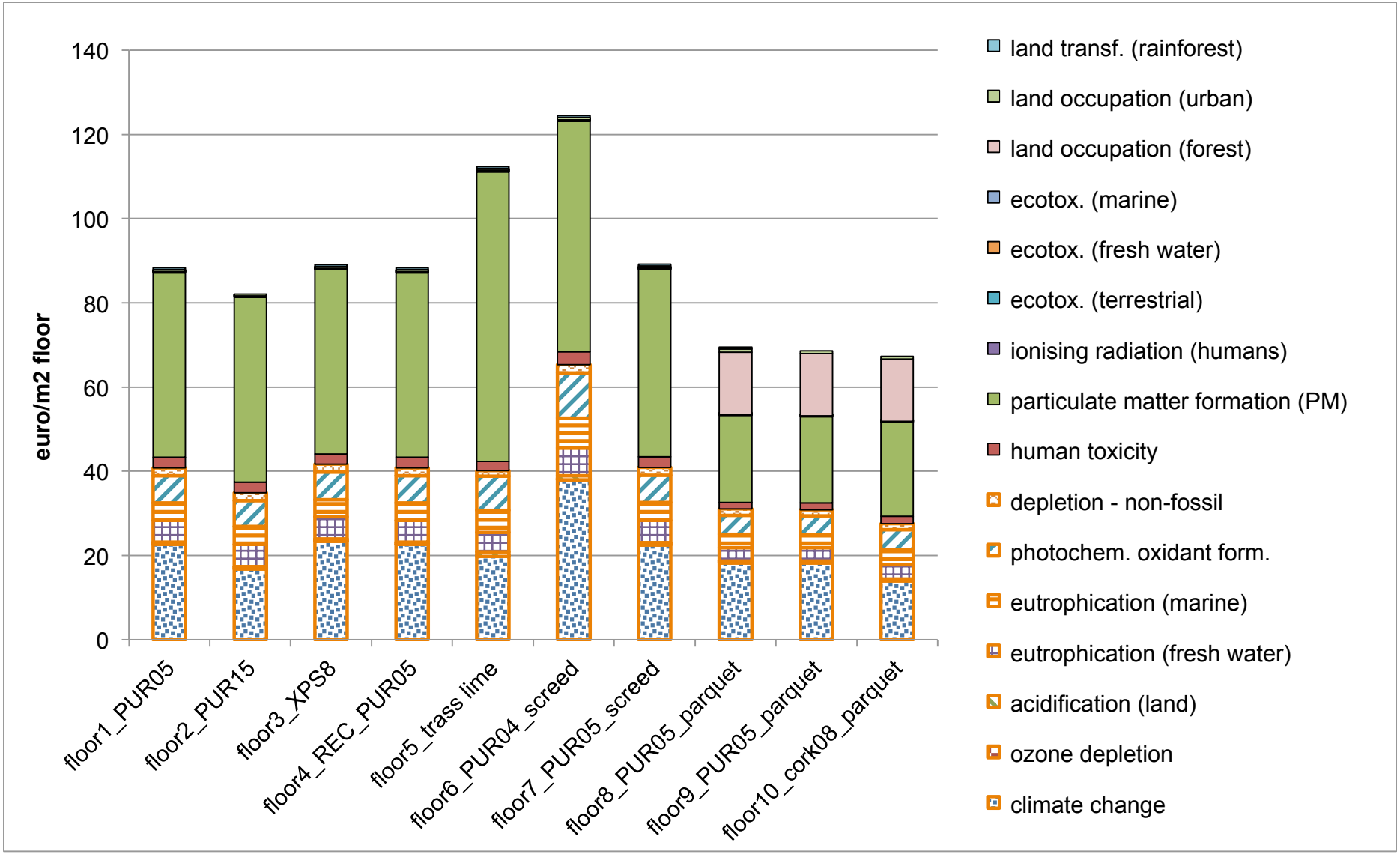

Figure I 1: Aggregated environmental profiles (split up into CEN and CEN+) for several building element variants 'floor on solid ground' per environmental indicator, expressed in monetary units.

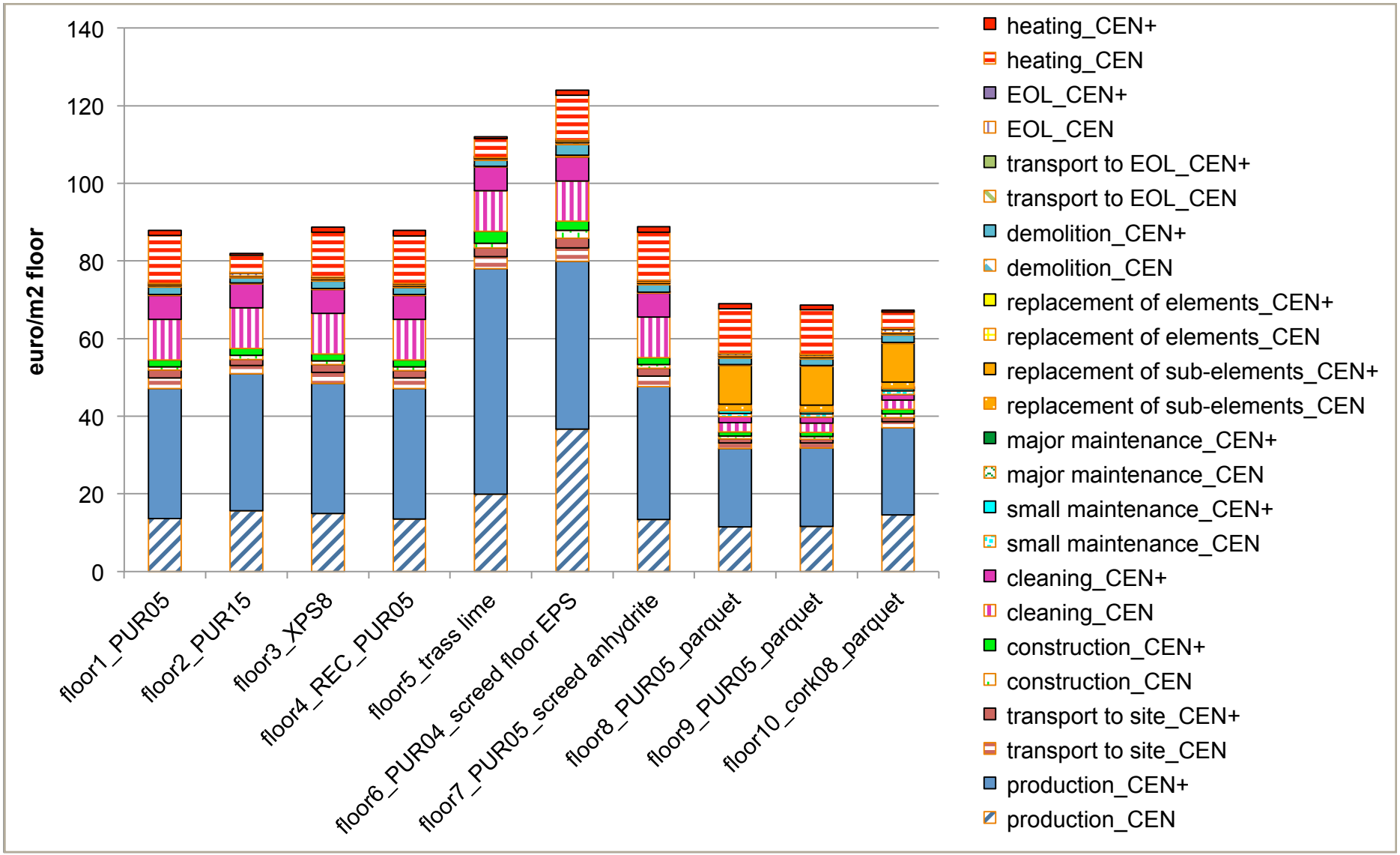

Figure L 1: Aggregated environmental profiles (split up into CEN and CEN+) for several building element variants 'floor on solid ground' per life cycle stage, expressed in monetary units.

1.1. Floor1_PUR05

Table 1.1: overview of the detailed composition of variant 'floor1_PUR05'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
floor1_PUR05									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.3	0.3	na	
Infrastructure for floor beds - filling with sand (compacted) - with machine	m³			120	necessary	0.13	0.13	na	
Floor bed - reinforced concrete 15 cm (2 x 150 x 150 - 8mm), poured by pump	m²			120	necessary	1	0.15	1.95	0.08
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - tiles - ceramic (extruded, glazed stoneware) 30 x 30cm - glued	m²		15	60	aesthetic	1	0.01	1.2	0.01
Floor, supporting structure for finish - screed - cement based - 5cm	m²			120	necessary	1	0.05	0.84	0.06
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	
Floor finishes - thermal insulation - upon floor bed - injected PUR 05 cm	m²			120	necessary	1	0.05	0.023	2.17

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

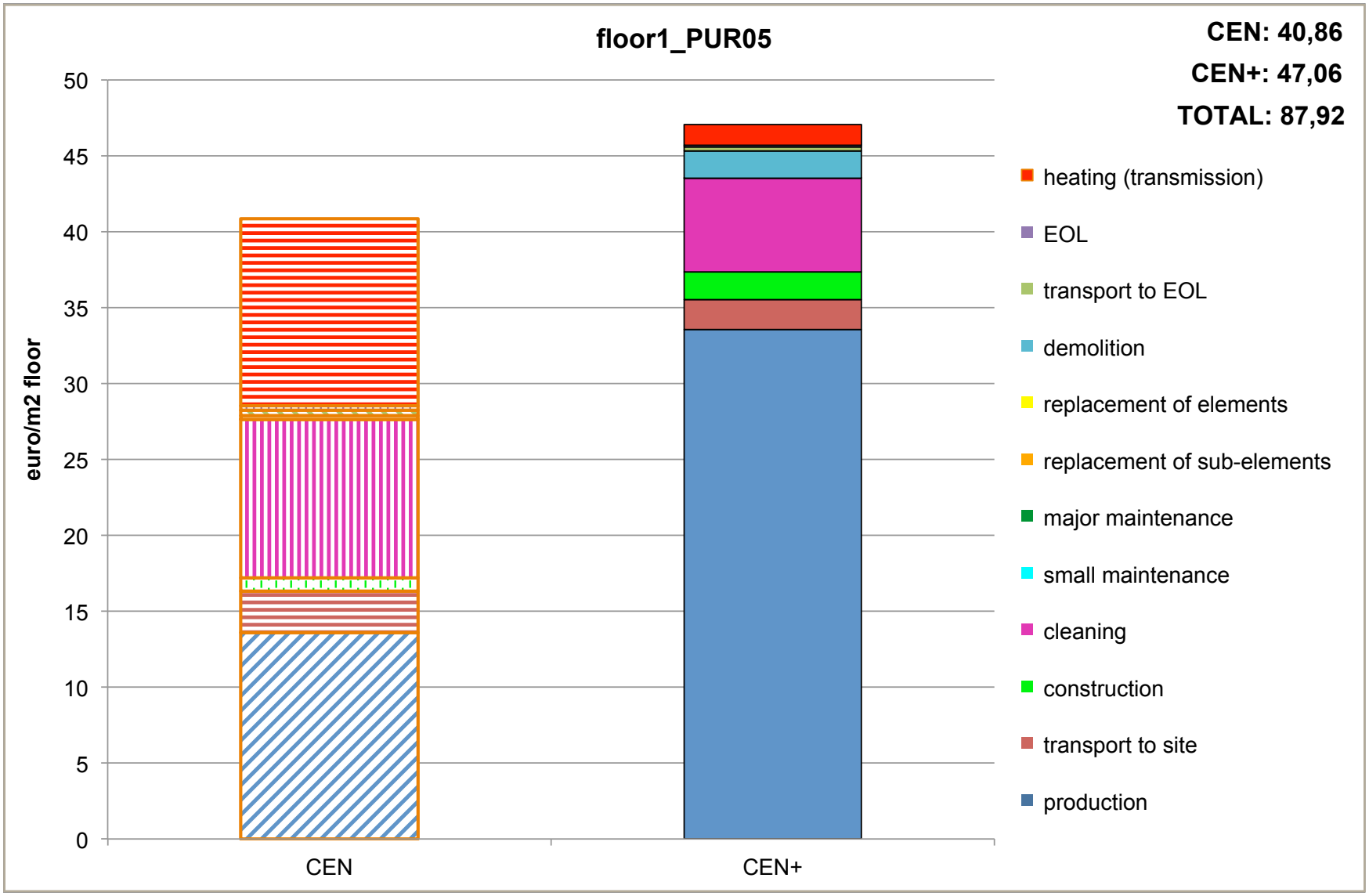

Figure floor 1.1.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor1_PUR05' per life cycle stage, expressed in monetary units.

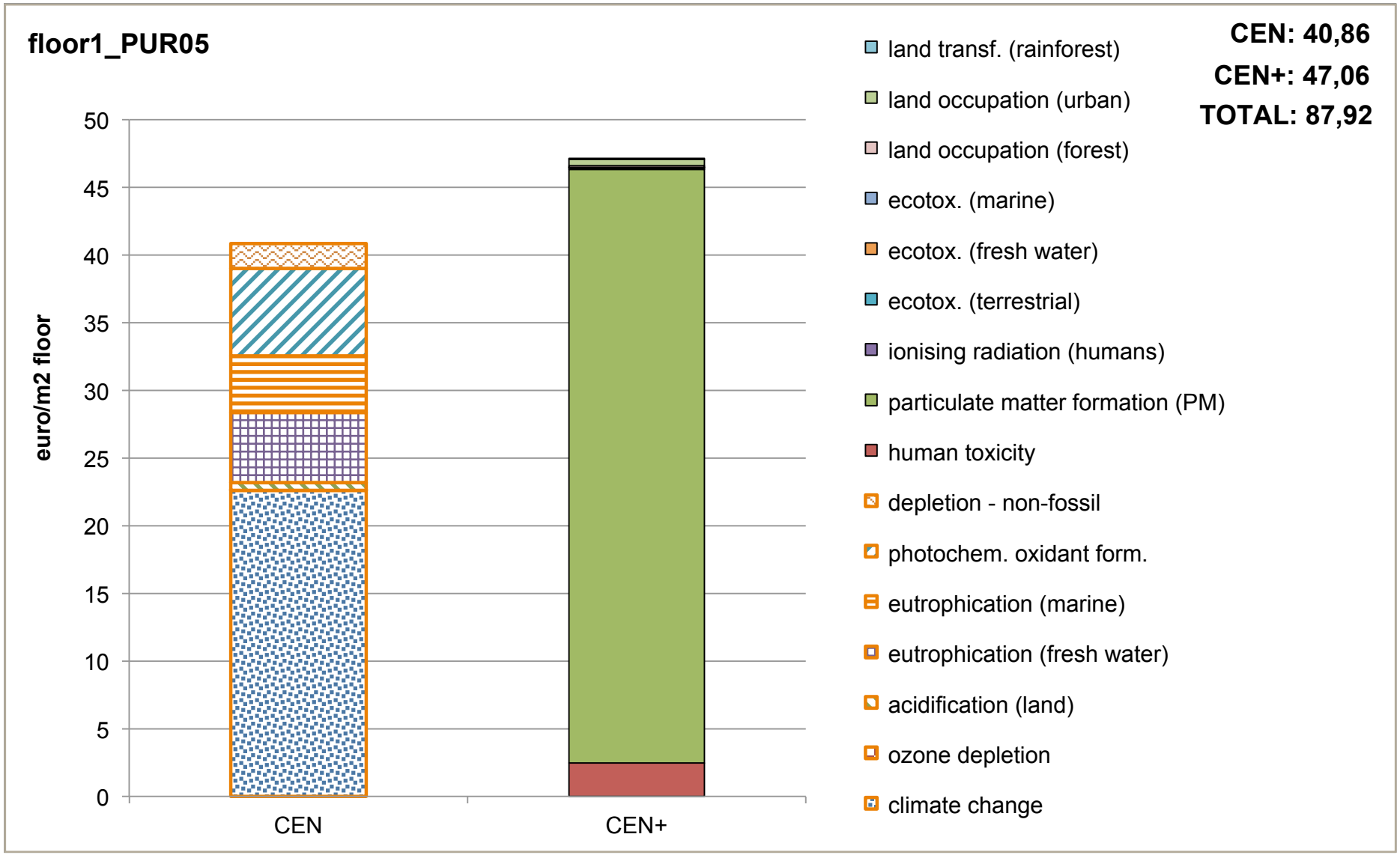

Figure floor 1.1.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor1_PUR05' per environmental indicator, expressed in monetary units.

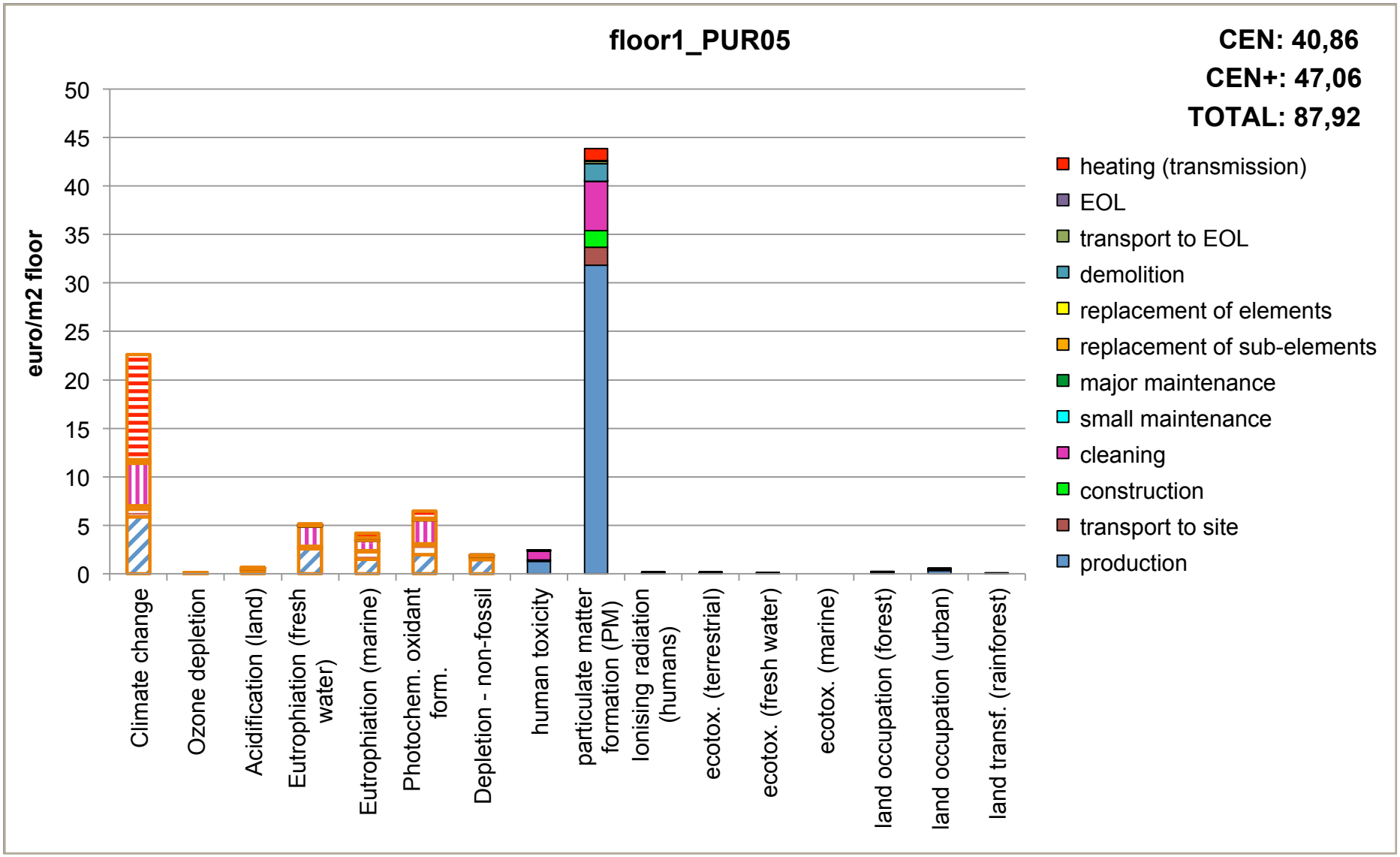

Figure floor 1.1.3: Aggregated environmental profile (split into CEN and CEN+) of variant 'floor1_PUR05' per life cycle stage and per individual environmental indicator, expressed in monetary units.

1.2. Floor2_PUR15

Table 1.2: overview of the detailed composition of variant 'floor2_PUR15'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
floor2_PUR15									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.3	0.3	na	
Infrastructure for floor beds - filling with sand (compacted) - with machine	m³			120	necessary	0.03	0.03	na	
Floor bed - reinforced concrete 15 cm (2 x 150 x 150 - 8mm), poured by pump	m²			120	necessary	1	0.15	1.95	0.08
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - tiles - ceramic (extruded, glazed stoneware) 30 x 30cm - glued	m²		15	60	aesthetic	1	0.01	1.2	0.01
Floor, supporting structure for finish - screed - cement based - 5cm	m²			120	necessary	1	0.05	0.84	0.06
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	
Floor finishes - thermal insulation - upon floor bed - injected PUR 15 cm	m²			120	necessary	1	0.15	0.023	6.52

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

overview overview CEN overview CEN+

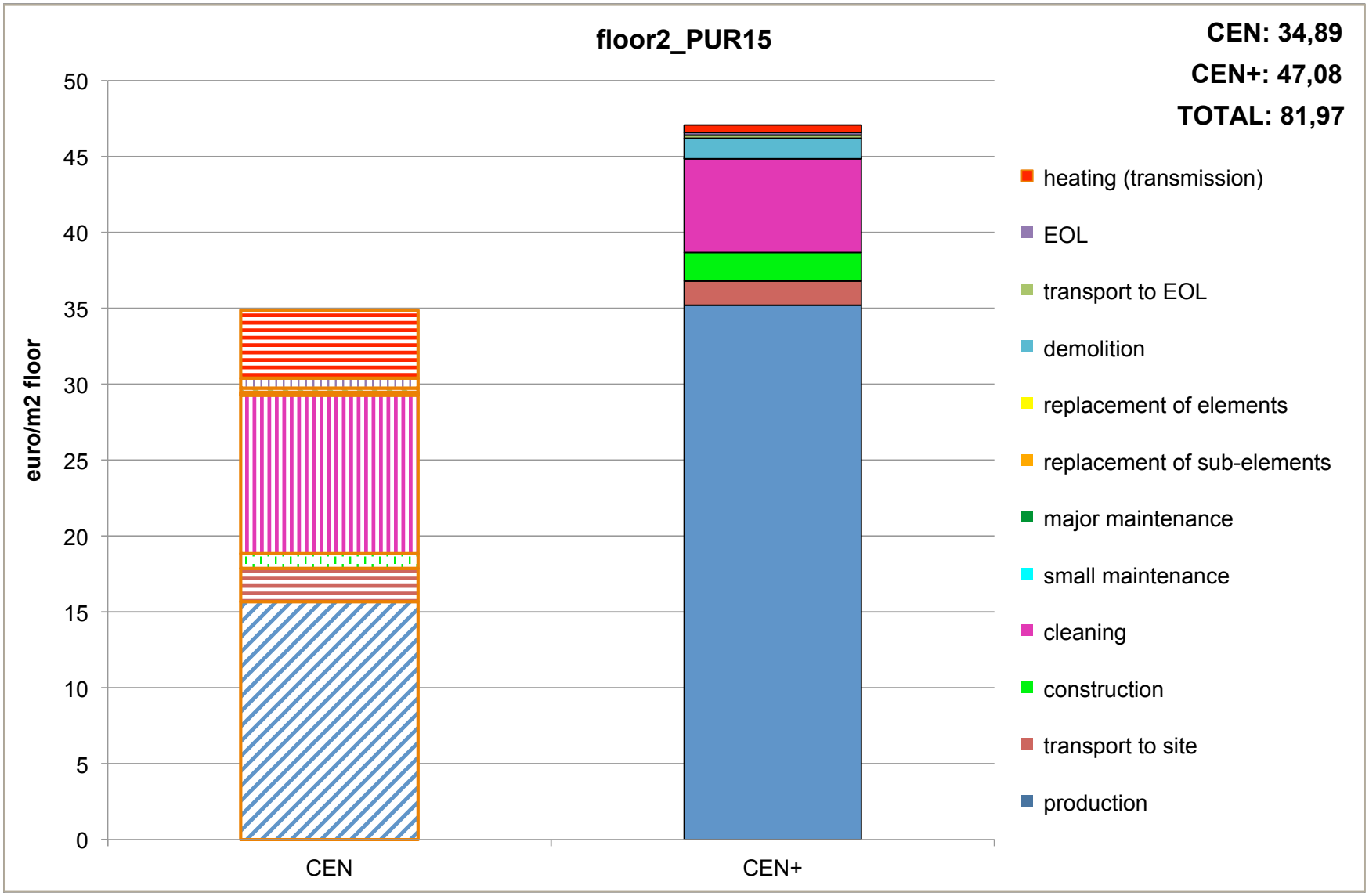

Figure floor 1.2.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor2_PUR15' per life cycle stage, expressed in monetary units.

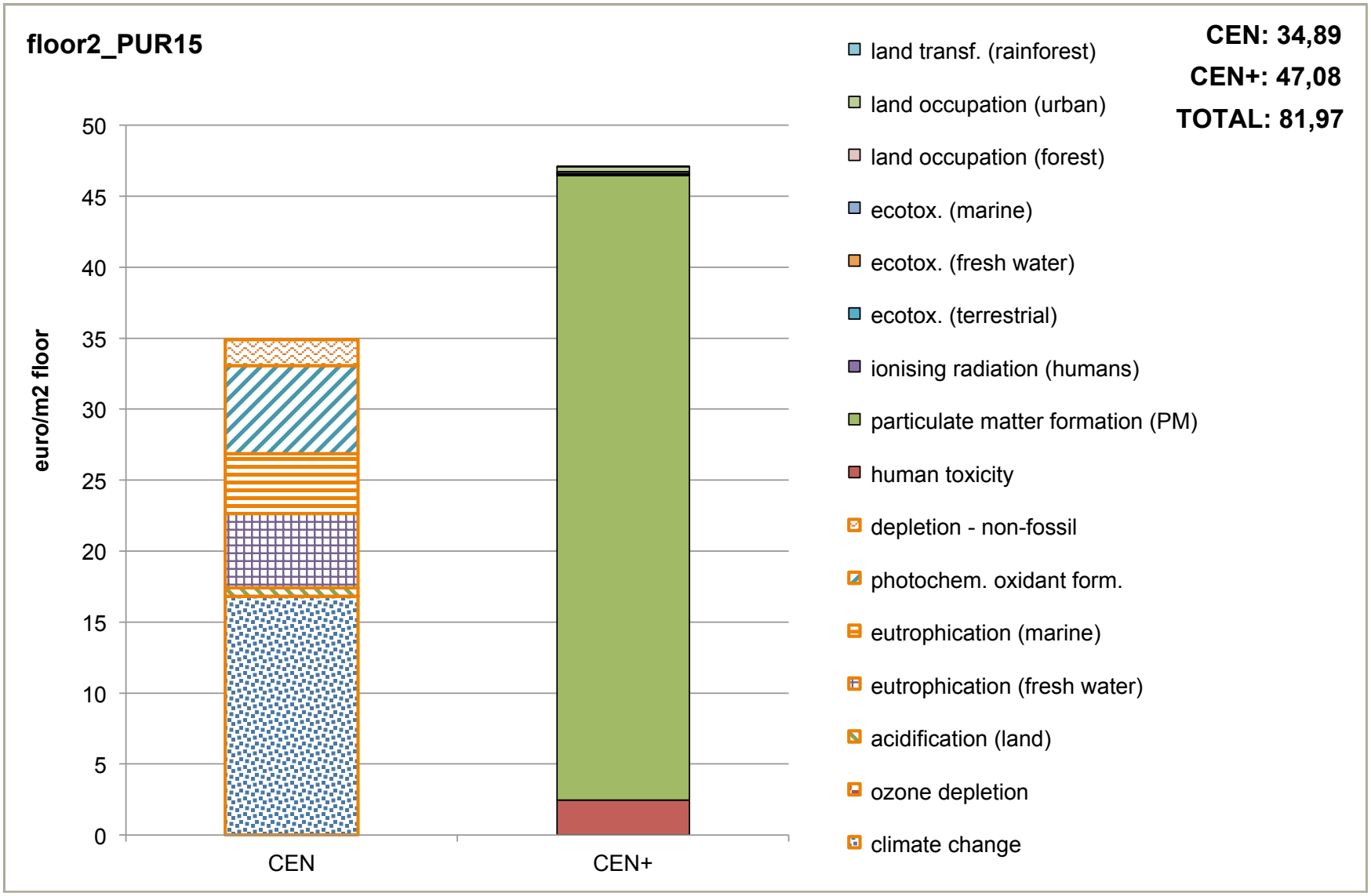

Figure floor 1.2.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor2_PUR15' per environmental indicator, expressed in monetary units.

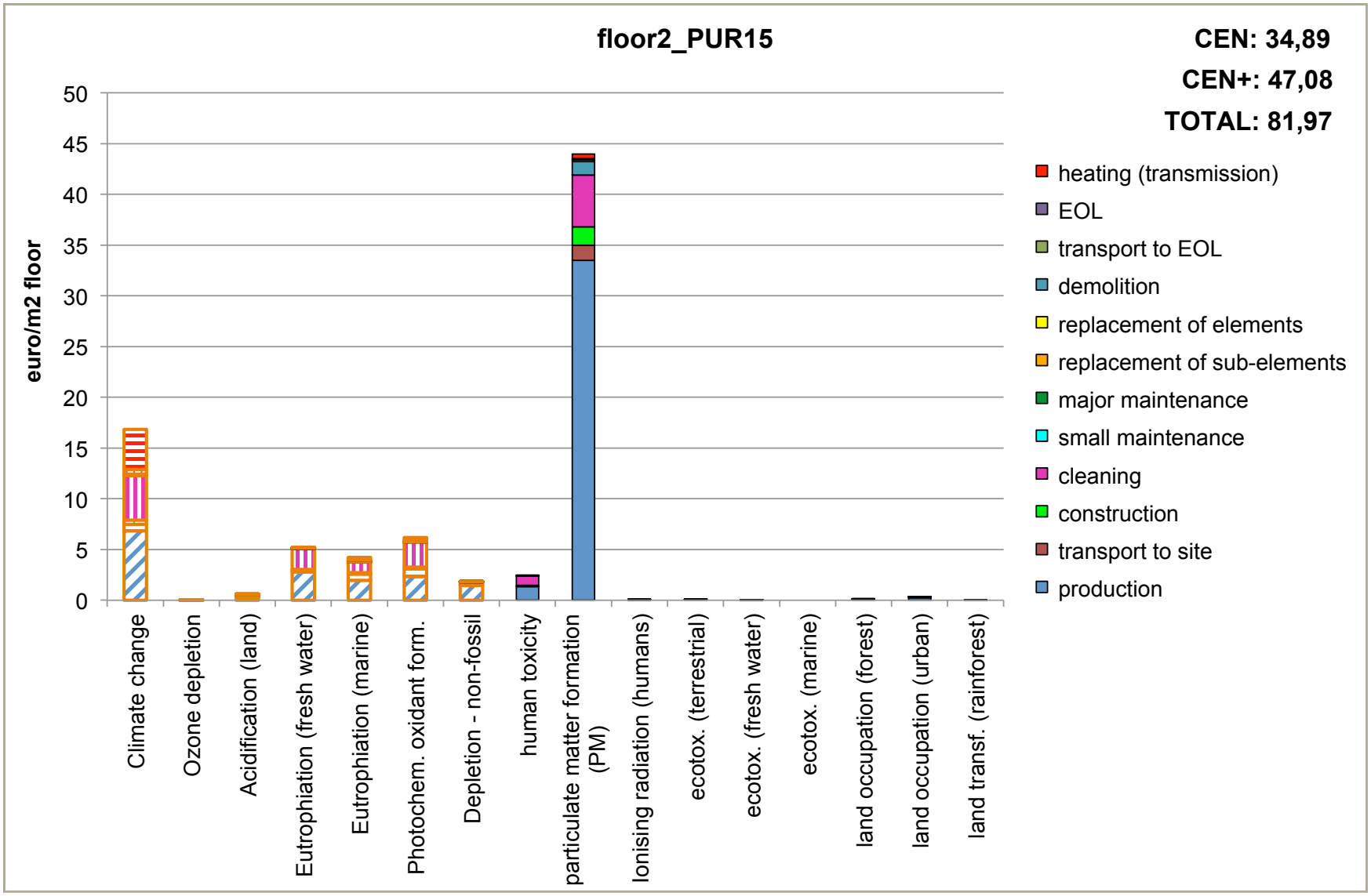

Figure floor 1.2.3: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor2_PUR15' per life cycle stage and per individual environmental indicator, expressed in monetary units.

1.3. Floor3_XPS8

Table 1.3: overview of the detailed composition of variant 'floor3_XPS8'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
floor3_XPS8									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.3	0.3	na	
Infrastructure for floor beds - filling with sand (compacted) - with machine	m³			120	necessary	0.1	0.1	na	
Floor bed - reinforced concrete 15 cm (2 x 150 x 150 - 8mm), poured by pump	m²			120	necessary	1	0.15	1.95	0.08
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - tiles - ceramic (extruded, glazed stoneware) 30 x 30cm - glued	m²		15	60	aesthetic	1	0.01	1.2	0.01
Floor, supporting structure for finish - screed - cement based - 5cm	m²			120	necessary	2	0.05	0.84	0.06
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	
Floor bed, thermal insulation - upon floor bed - extruded polystyrene (XPS 8 cm)	m²			120	necessary	1	0.08	0.035	2.29

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

overview overview CEN overview CEN+

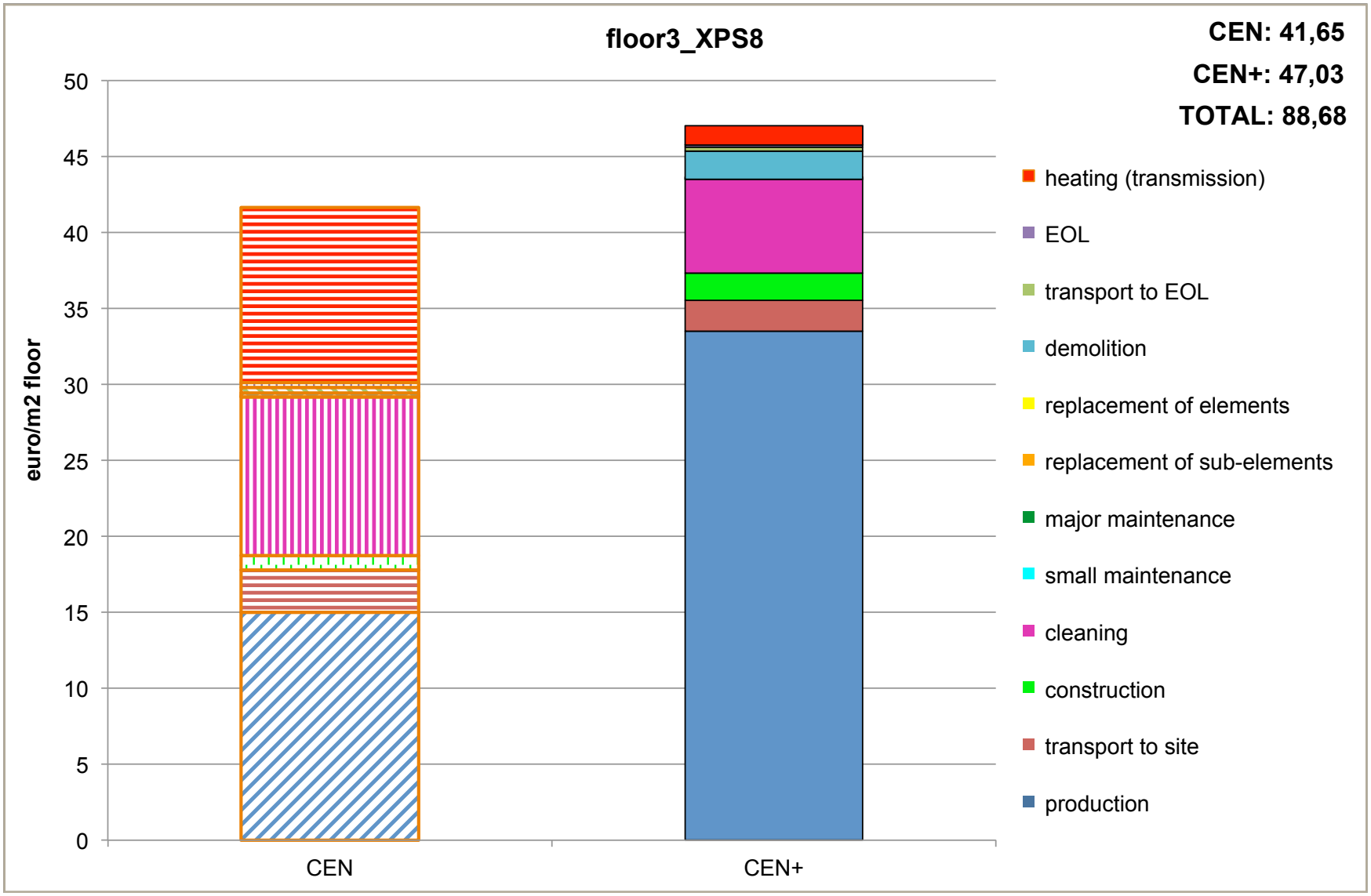

Figure floor 1.3.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor3_XPS8' per life cycle stage, expressed in monetary units.

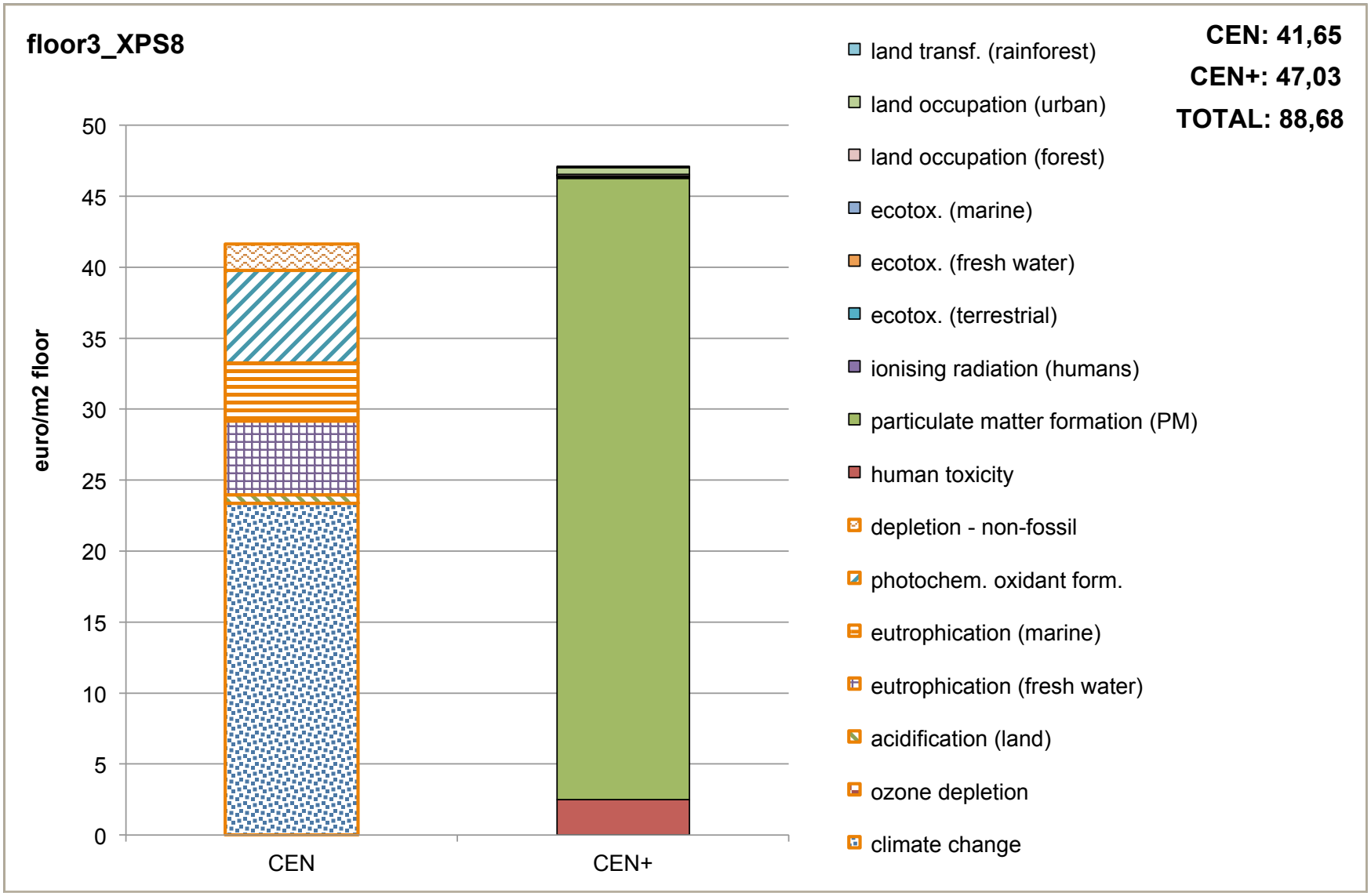

Figure floor 1.3.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor3_XPS8' per environmental indicator, expressed in monetary units.

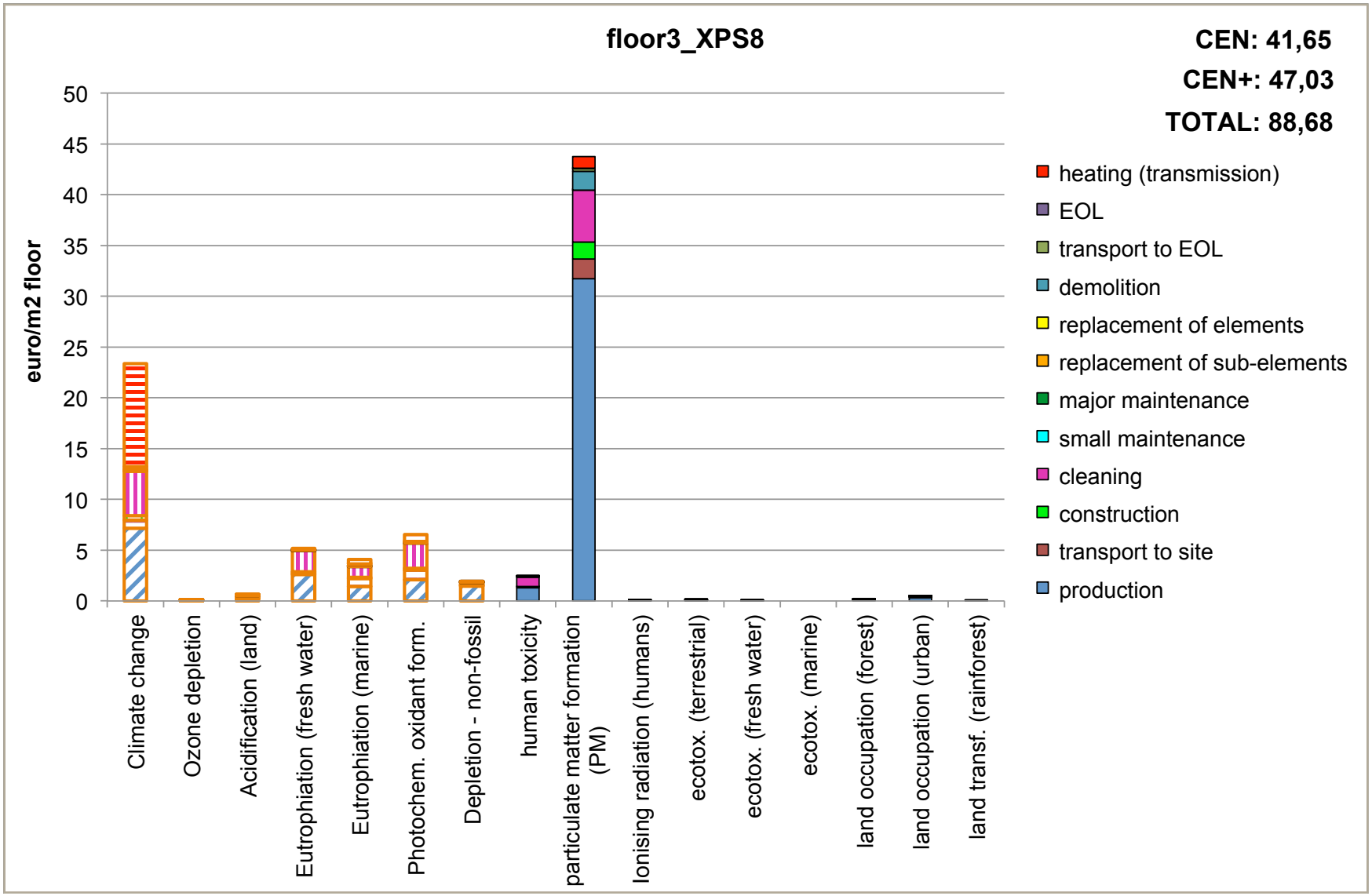

Figure floor 1.3.3: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor3_XPS8' per life cycle stage and per individual environmental indicator, expressed in monetary units.

1.4. Floor4_REC_PUR05

Table 1.4: overview of the detailed composition of variant 'floor4_REC_PUR05'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
floor4_REC_PUR05									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.3	0.3	na	
Infrastructure for floor beds - filling with sand (compacted) - with machine	m³			120	necessary	0.13	0.13	na	
Floor bed - recycled reinforced concrete 15 cm (2 x 150 x 150 - 8mm), poured by pump	m²			120	necessary	1	0.15	1.95	0.08
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - tiles - ceramic (extruded, glazed stoneware) 30 x 30cm - glued	m²		15	60	aesthetic	1	0.01	1.2	0.01
Floor, supporting structure for finish - screed - cement based - 5cm	m²			120	necessary	1	0.05	0.84	0.06
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	
Floor finishes - thermal insulation - upon floor bed - injected PUR 05 cm	m²			120	necessary	1	0.05	0.023	2.17

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

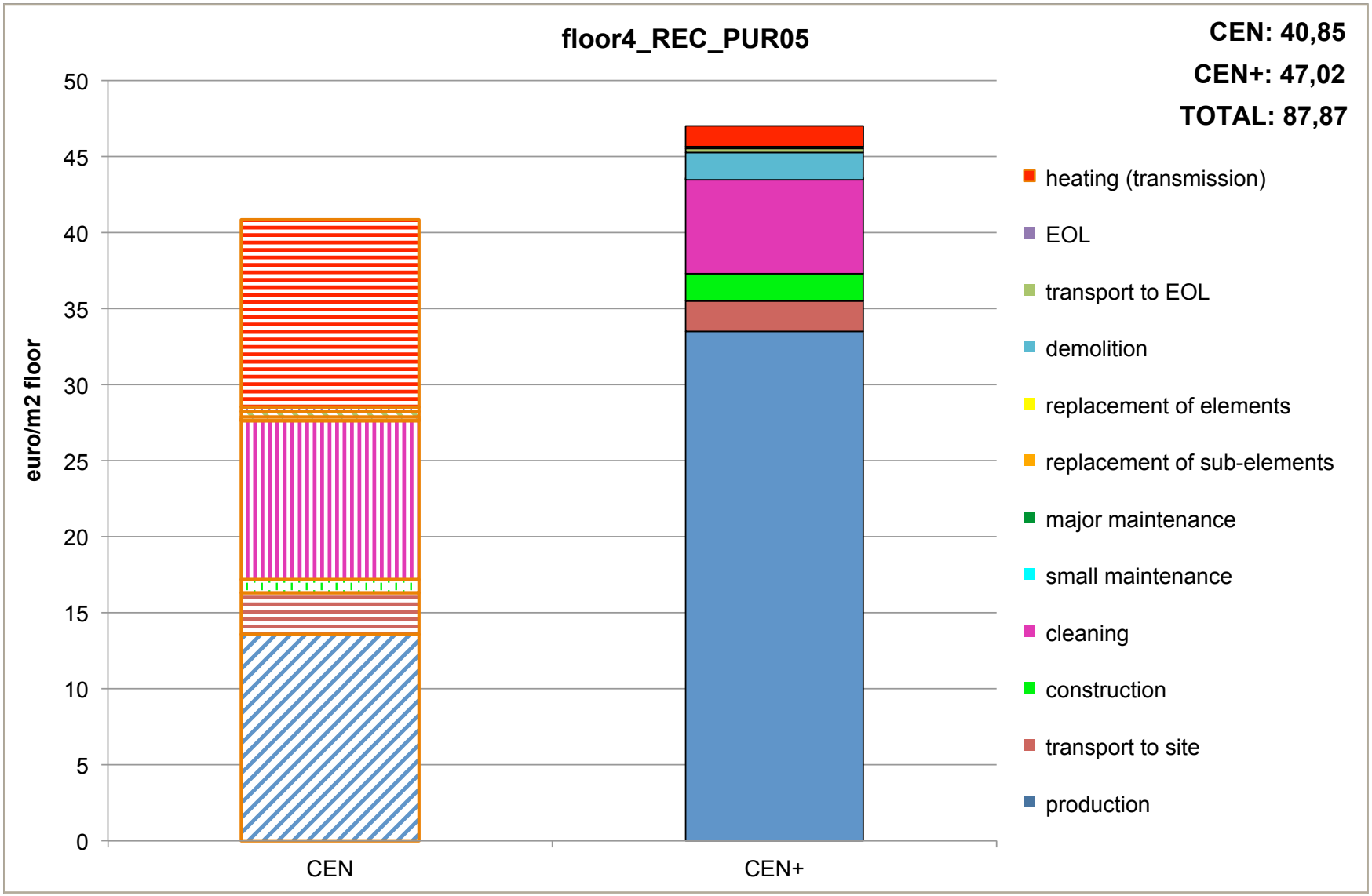

Figure floor 1.4.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor4_REC_PUR05' per life cycle stage, expressed in monetary units.

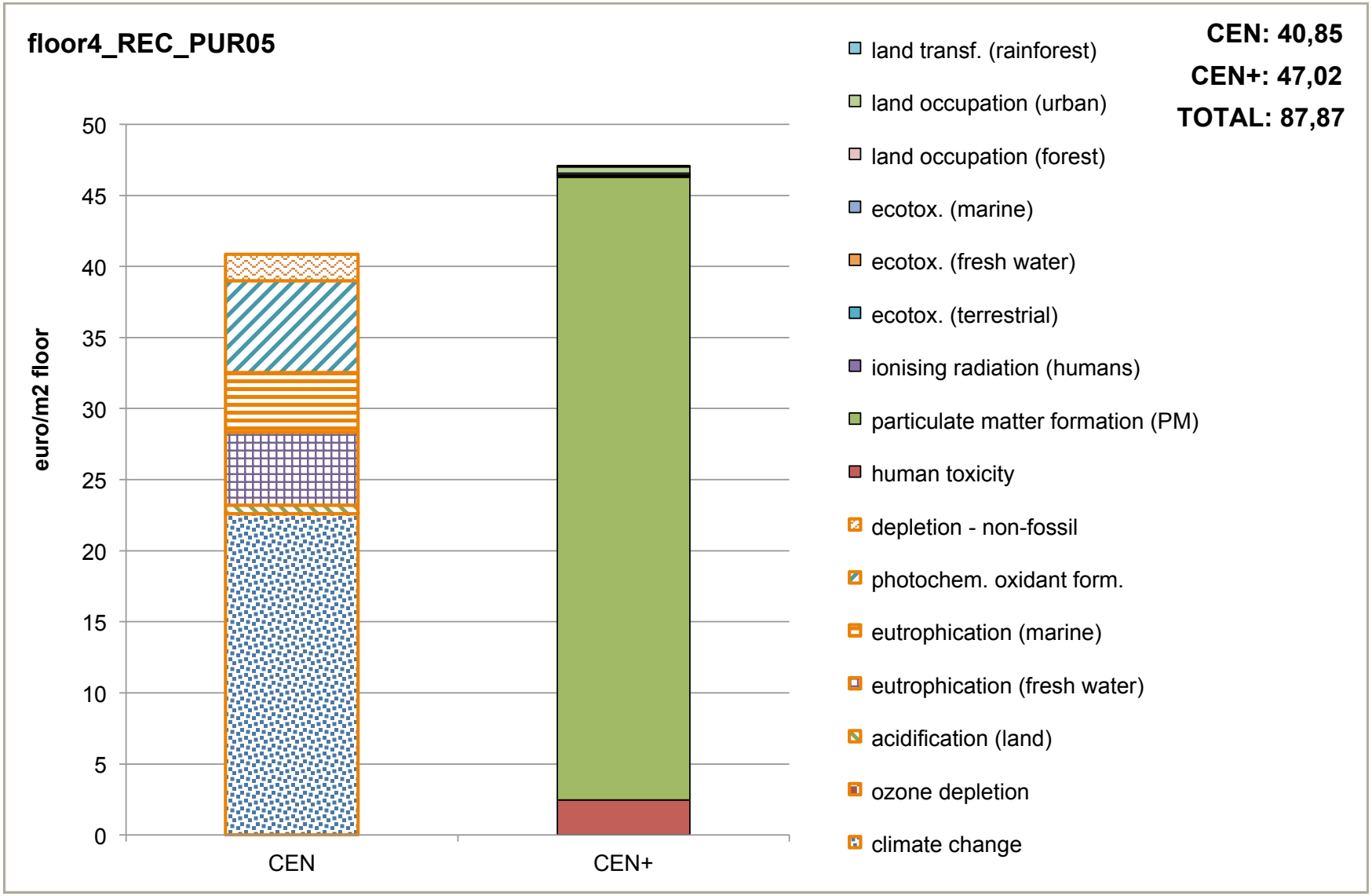

Figure floor 1.4.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor4_REC_PUR05' per environmental indicator, expressed in monetary units.

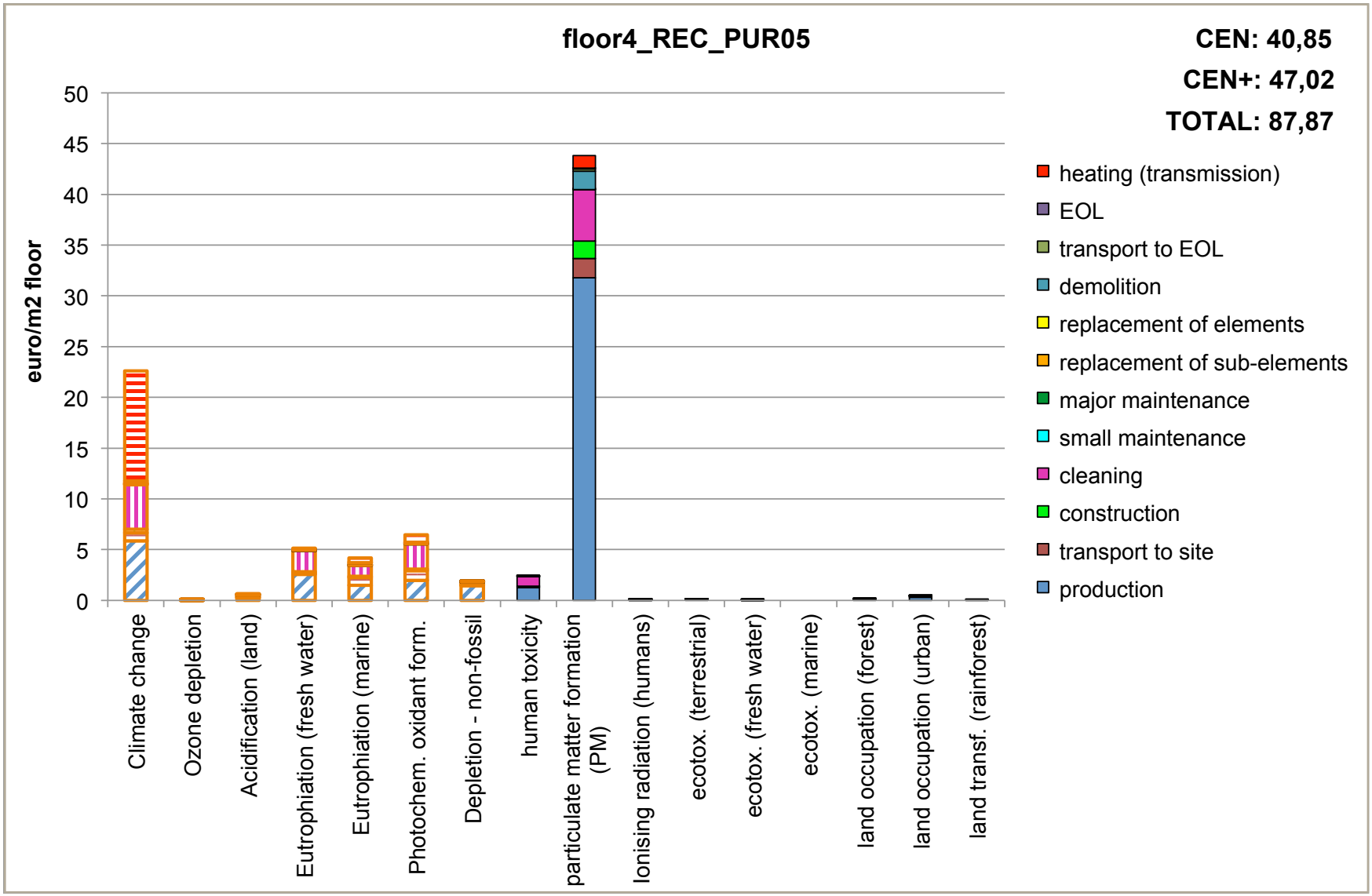

Figure floor 1.4.3: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor4_REC_PUR05' per life cycle stage and per individual environmental indicator, expressed in monetary units.

1.5. Floor5_trass lime

Table 1.5: overview of the detailed composition of variant 'Floor5_trass lime'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
Floor5_trass lime									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.47	0.47	na	
Infrastructure for floor beds - filling with gravel - with machine	m³			120	necessary	0.1	0.1	na	
Infrastructure for floor beds - filling with expanded clay - with machine	m³			120	necessary	0.32	0.32	0.13	2.46
Floor bed - expanded clay grains with traskalk mortar	m³			120	necessary	0.05	0.47	0.13	3.62
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - tiles - ceramic (extruded, glazed stoneware) 30 x 30cm - glued	m²		15	60	aesthetic	1	0.01	1.2	0.01
Floor, supporting structure for finish - screed - cement based - 5cm	m²			120	necessary	1	0.05	0.84	0.06
Floor, supporting structure for finish - traskalkmortel - 3 cm	m²			120	necessary	1	0.03	na	
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

overview overview CEN overview CEN+

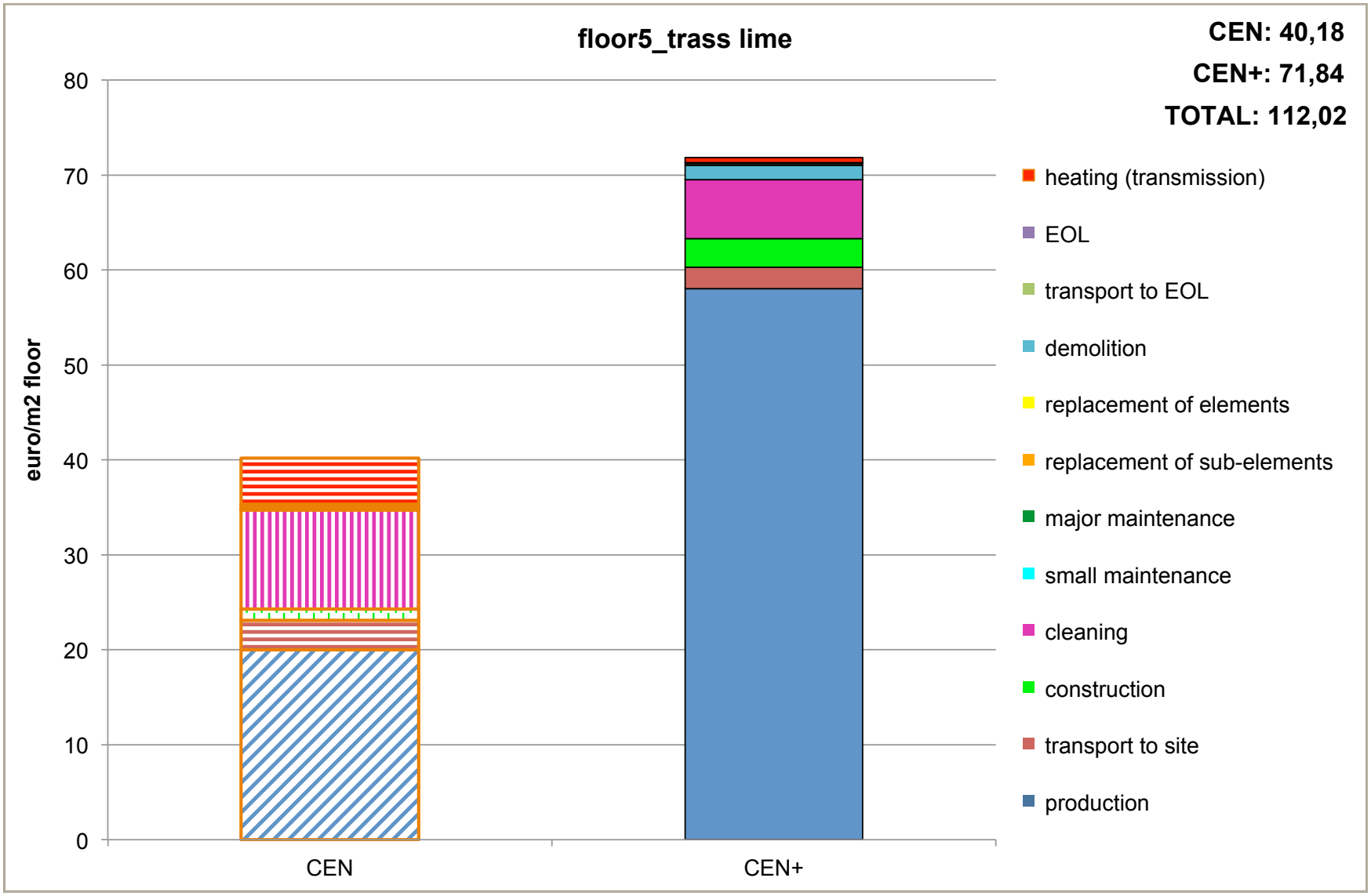

Figure floor 1.5.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'Floor5_trass lime' per life cycle stage, expressed in monetary units.

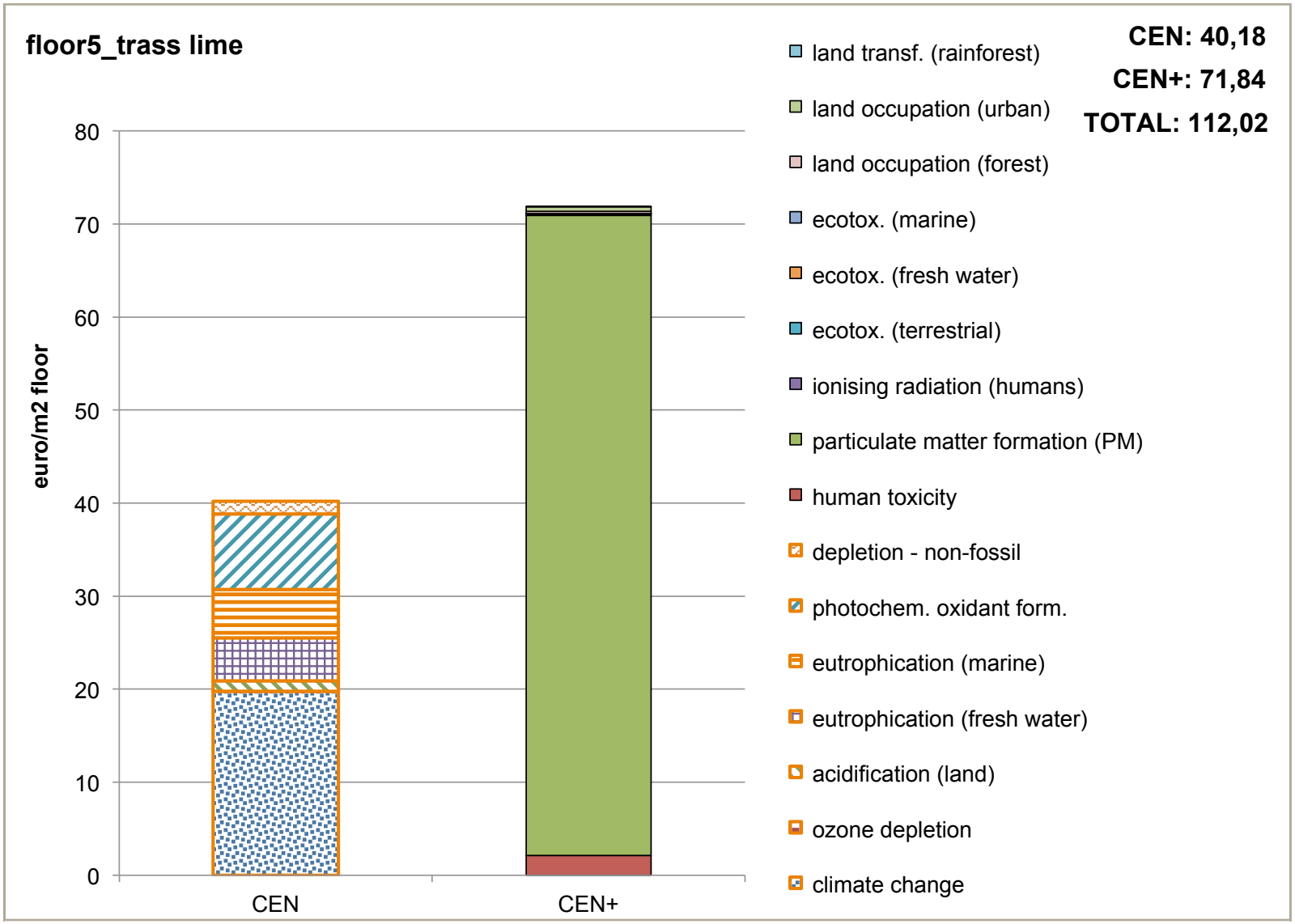

Figure floor 1.5.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'Floor5_trass lime' per environmental indicator, expressed in monetary units.

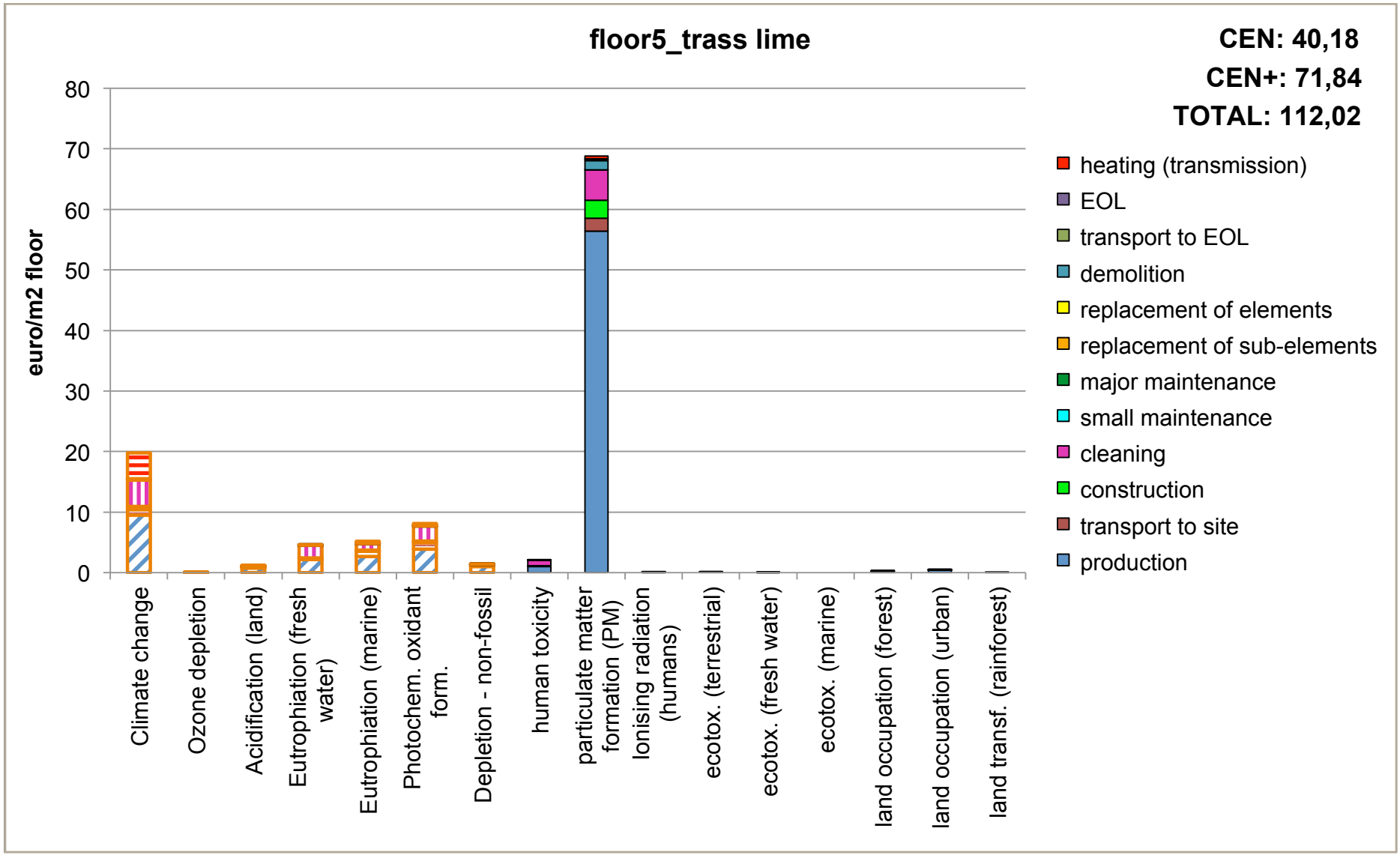

Figure floor 1.5.3: Aggregated environmental profile (divided into CEN and CEN+) of variant 'Floor5_trass lime' per life cycle stage and per individual environmental indicator, expressed in monetary units.

1.6. Floor6_PUR04_screed floor EPS

Table 1.6: overview of the detailed composition of variant 'Floor6_PUR04_screed floor EPS'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
Floor6_PUR04_screed floor EPS									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.3	0.3	na	
Infrastructure for floor beds - filling with sand (compacted) - with machine	m³			120	necessary	0.14	0.14	na	
Floor bed - reinforced concrete 15 cm (2 x 150 x 150 - 8mm), poured by pump	m²			120	necessary	1	0.15	1.95	0.08
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - tiles - ceramic (extruded, glazed stoneware) 30 x 30cm - glued	m²		15	60	aesthetic	1	0.01	1.2	0.01
Floor, supporting structure for finish - insulating screed with EPS grains - only upon floor slab - 5 cm	m²			120	necessary	1	0.05	0.075	0.67
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	
Floor finishes - thermal insulation - upon floor bed - injected PUR 04 cm	m²			120	necessary	1	0.04	0.023	1.74

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

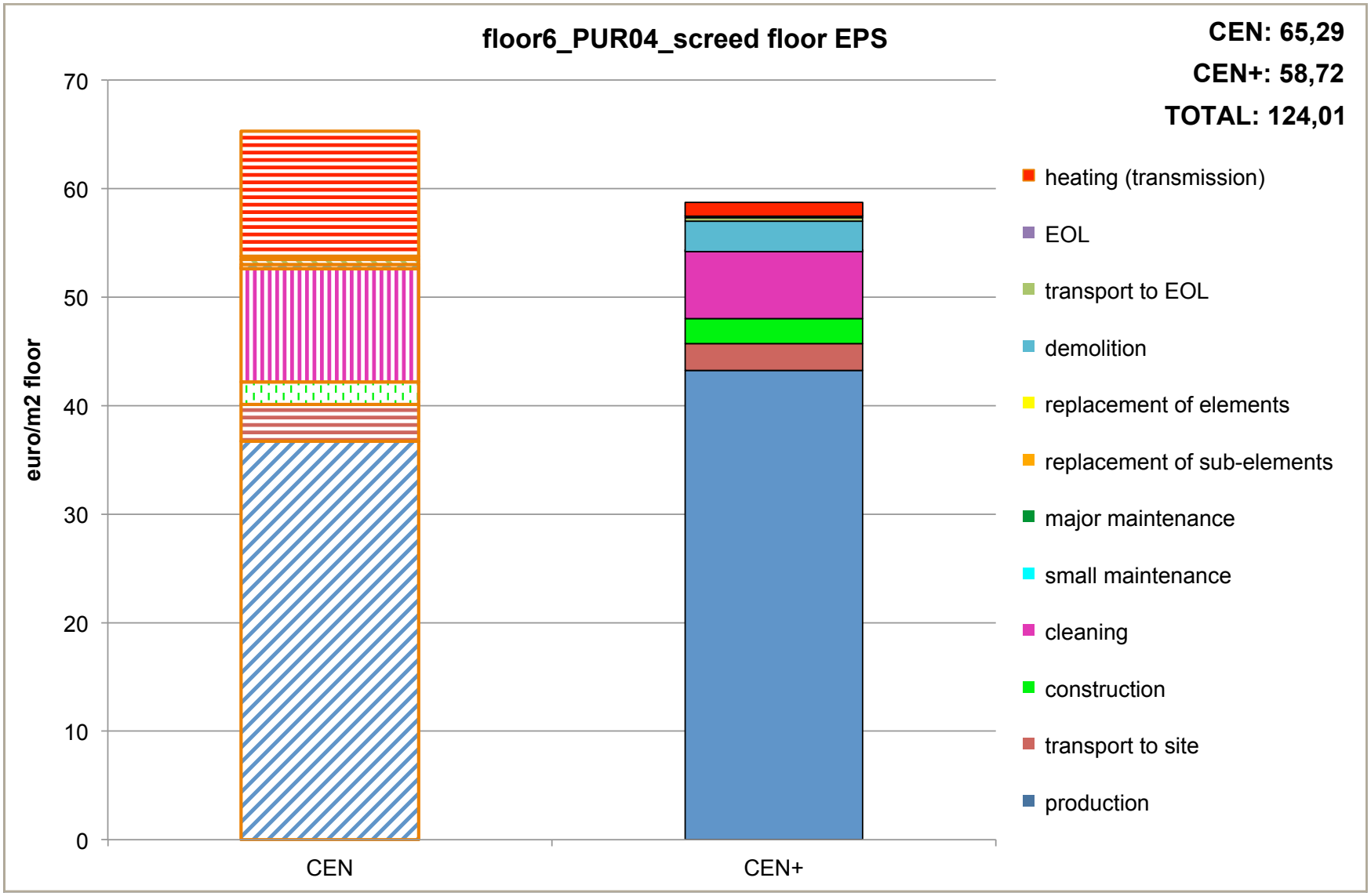

Figure floor 1.6.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'Floor6_PUR04_screed floor EPS' per life cycle stage, expressed in monetary units.

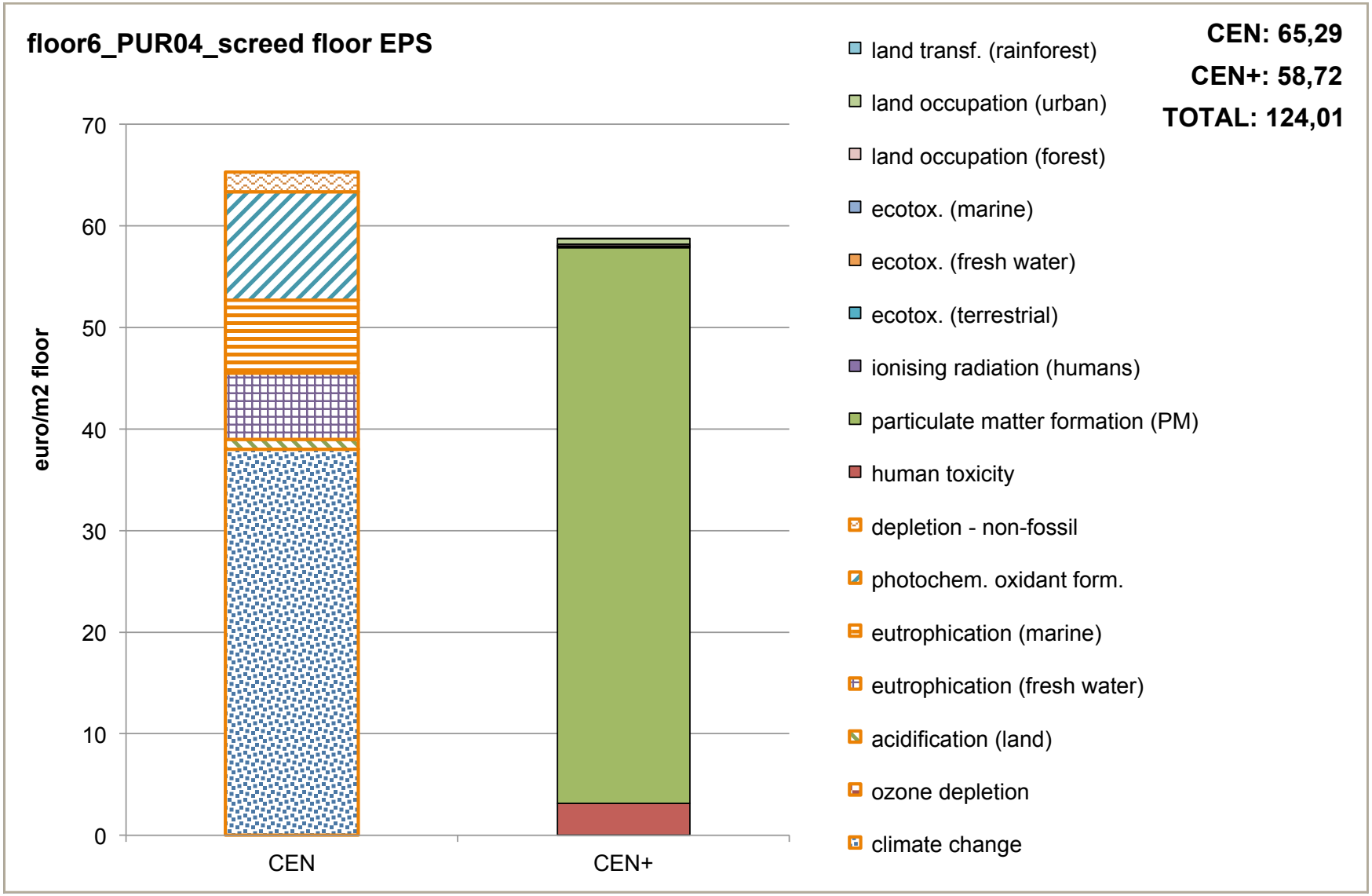

Figure floor 1.6.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'Floor6_PUR04_screed floor EPS' per environmental indicator, expressed in monetary units.

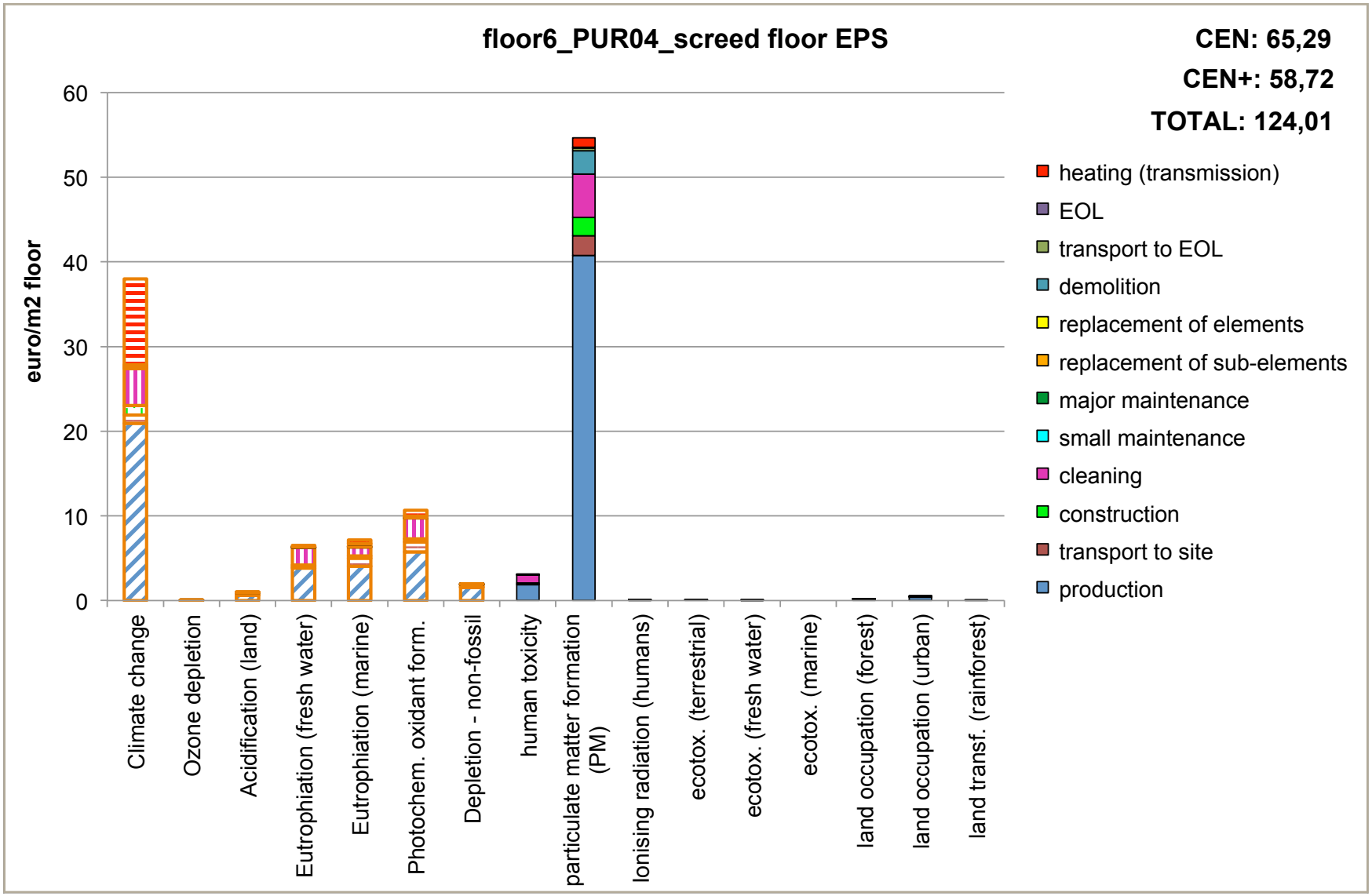

Figure floor 1.6.3: Aggregated environmental profile (divided into CEN and CEN+) of variant 'Floor6_PUR04_screed floor EPS' per life cycle stage and per individual environmental indicator, expressed in monetary units.

1.7. Floor7_PUR05_screed anhydrite

Table 1.7: overview of the detailed composition of variant 'Floor7_PUR05_screed anhydrite'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
Floor7_PUR05_screed anhydrite									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.3	0.3	na	
Infrastructure for floor beds - filling with sand (compacted) - with machine	m³			120	necessary	0.13	0.13	na	
Floor bed - reinforced concrete 15 cm (2 x 150 x 150 - 8mm), poured by pump	m²			120	necessary	1	0.15	1.95	0.08
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - tiles - ceramic (extruded, glazed stoneware) 30 x 30cm - glued	m²		15	60	aesthetic	1	0.01	1.2	0.01
Floor, supporting structure for finish - screed - anhydrite binder - 5 cm	m²			120	necessary	1	0.05	2	0.02
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	
Floor finishes - thermal insulation - upon floor bed - injected PUR 05 cm	m²			120	necessary	1	0.05	0.023	2.17

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

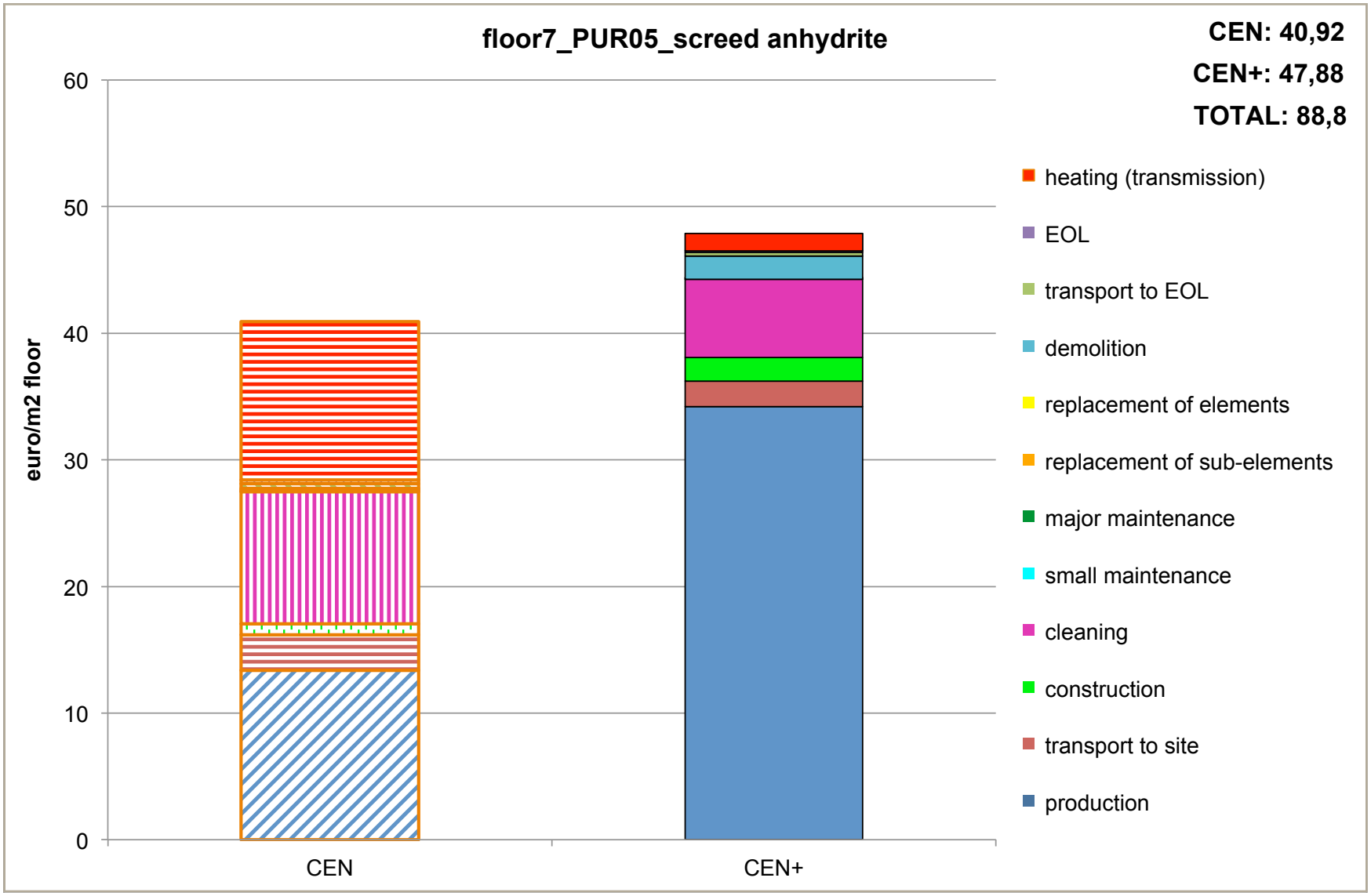

Figure floor 1.7.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'Floor7_PUR05_screed anhydrite' per life cycle stage, expressed in monetary units.

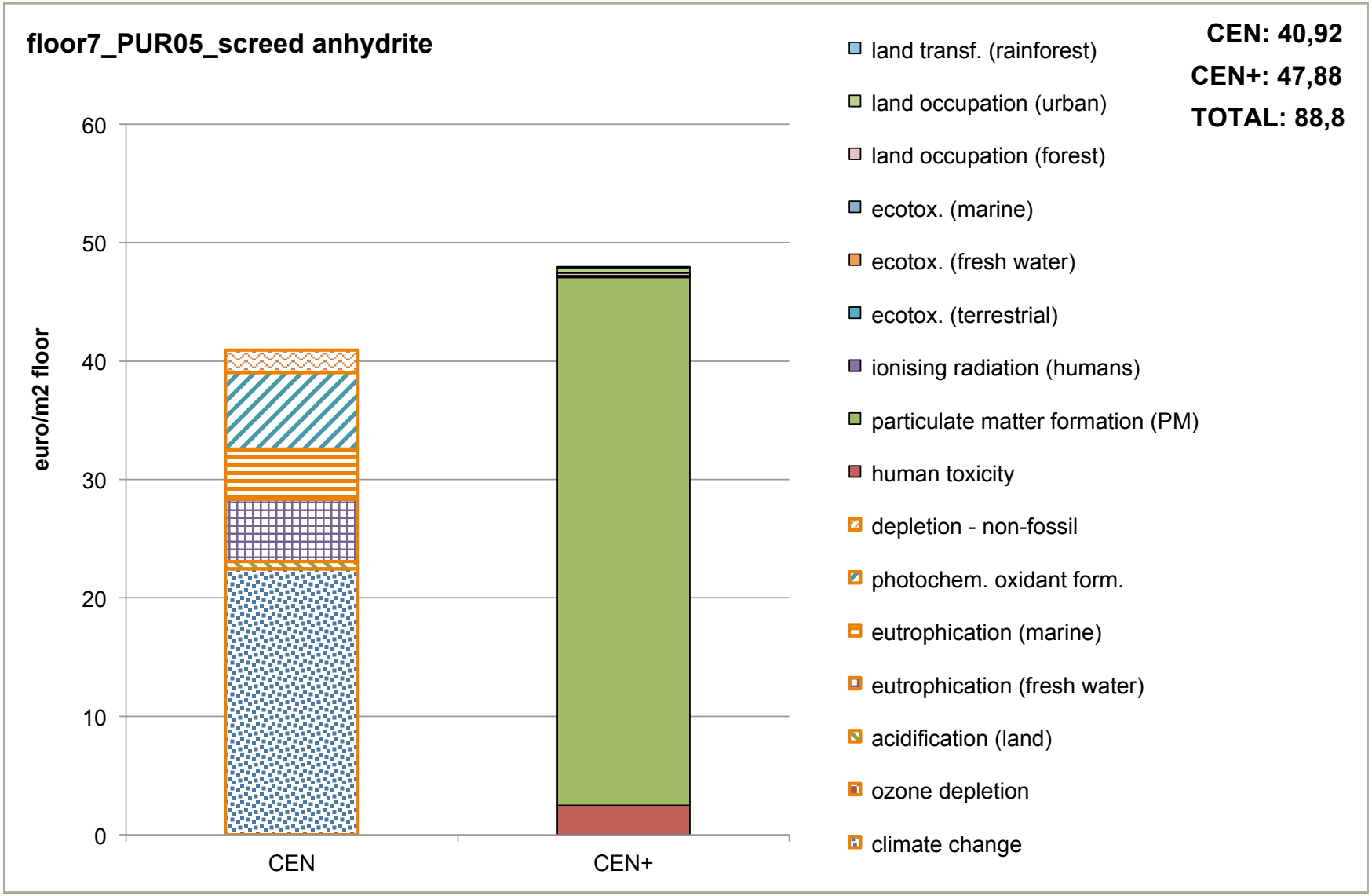

Figure floor 1.7.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'Floor7_PUR05_screed anhydrite' per environmental indicator, expressed in monetary units.

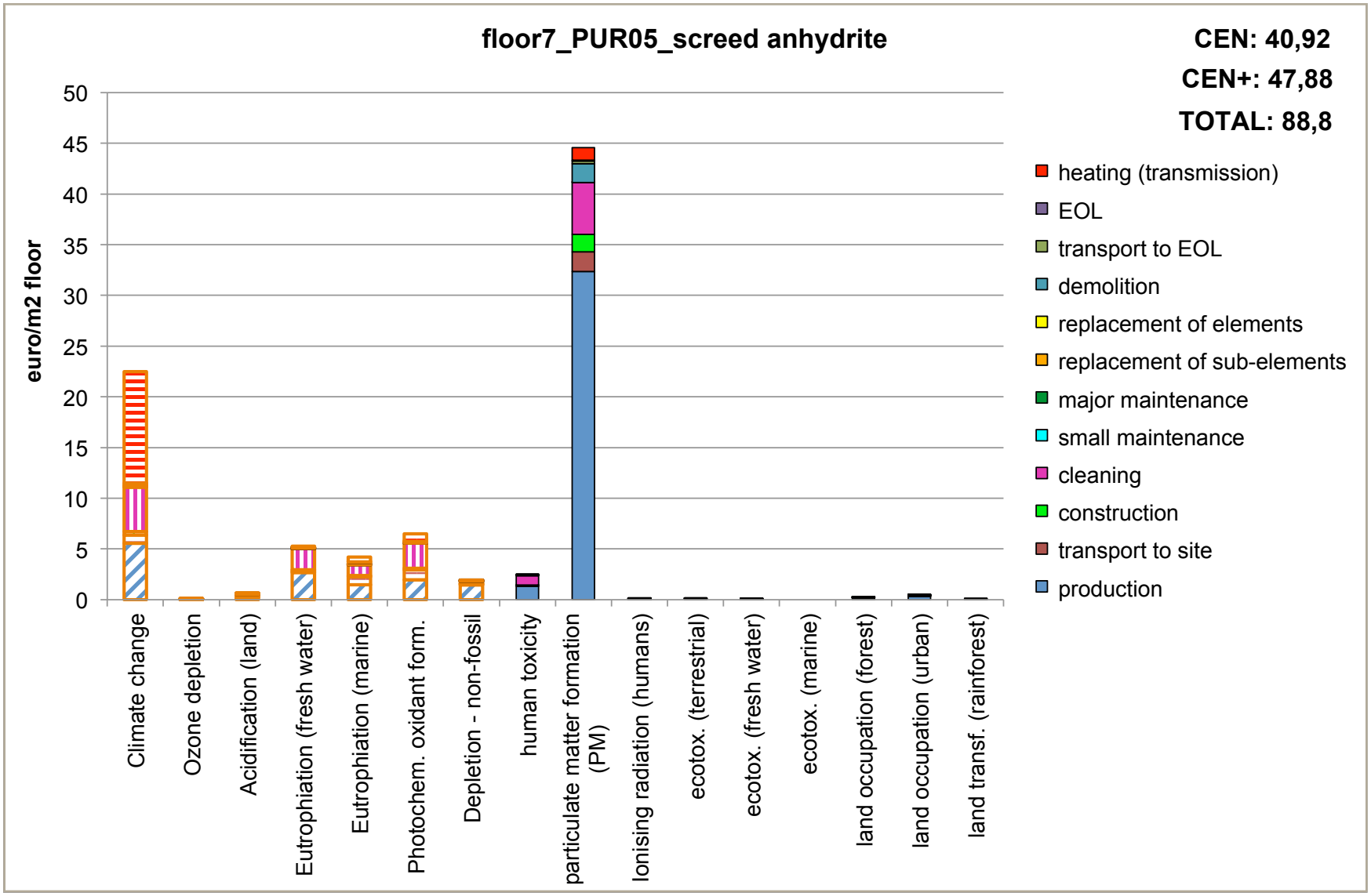

Figure floor 1.7.3: Aggregated environmental profile (divided into CEN and CEN+) of variant 'Floor7_PUR05_screed anhydrite' per life cycle stage and per individual environmental indicator, expressed in monetary units.

1.8. Floor8_PUR05_parquet

Table 1.8: overview of the detailed composition of variant 'floor8_PUR05_parquet'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
floor8_PUR05_parquet									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.3	0.3	na	
Infrastructure for floor beds - filling with sand (compacted) - with machine	m³			120	necessary	0.13	0.13	na	
Floor bed - reinforced concrete 15 cm (2 x 150 x 150 - 8mm), poured by pump	m²			120	necessary	1	0.15	1.95	0.08
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - parquet - hardwood (Belgian mix) - glued	m²	1	15	30	aesthetic	1	0.02	0.13	0.17
Floor, supporting structure for finish - screed - cement based - 5cm	m²			120	necessary	1	0.05	0.84	0.06
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	
Floor finishes - thermal insulation - upon floor bed - injected PUR 05 cm	m²			120	necessary	1	0.05	0.023	2.17

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

overview overview CEN overview CEN+

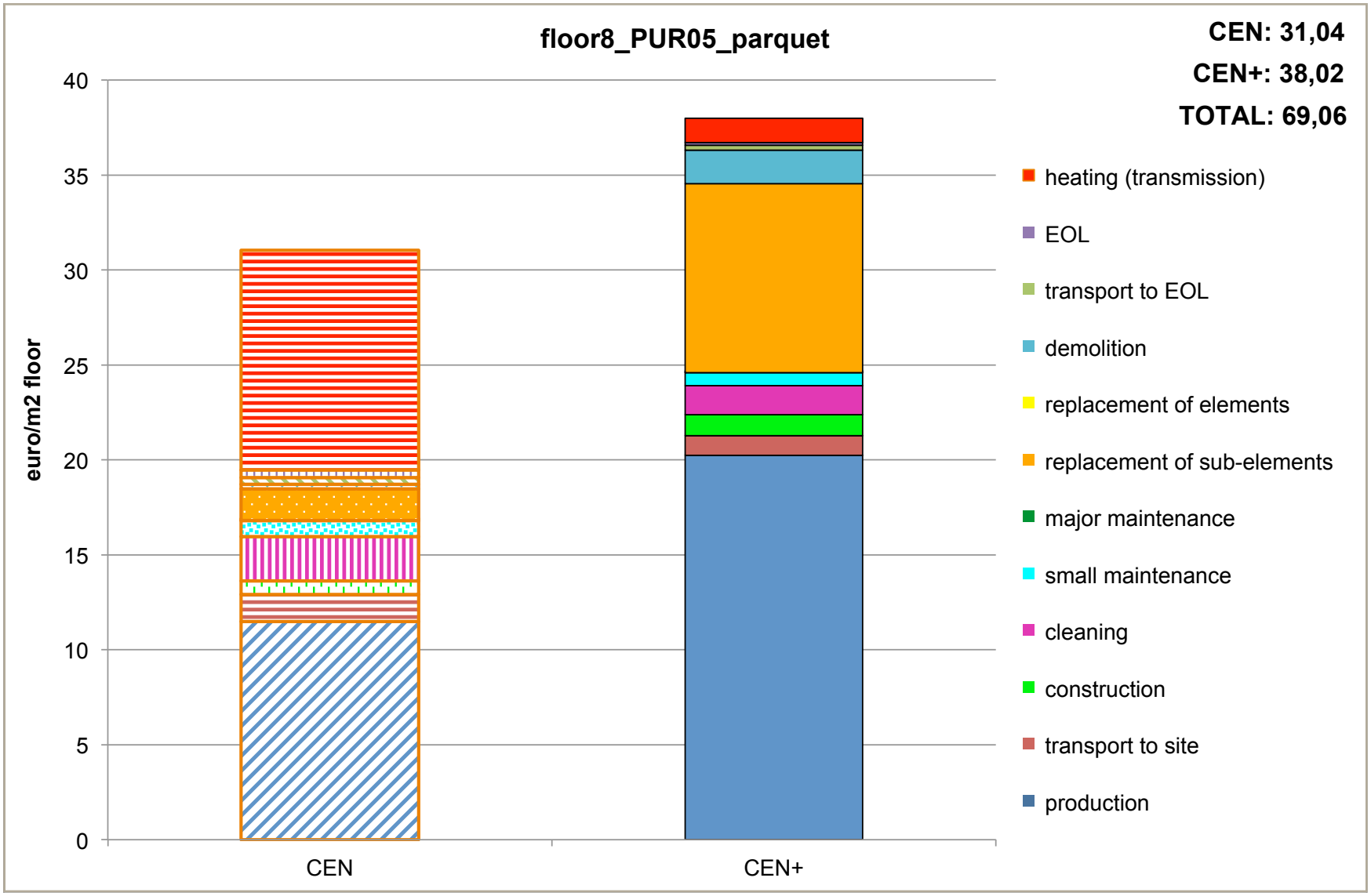

Figure floor 1.8.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor8_PUR05_parquet' per life cycle stage, expressed in monetary units.

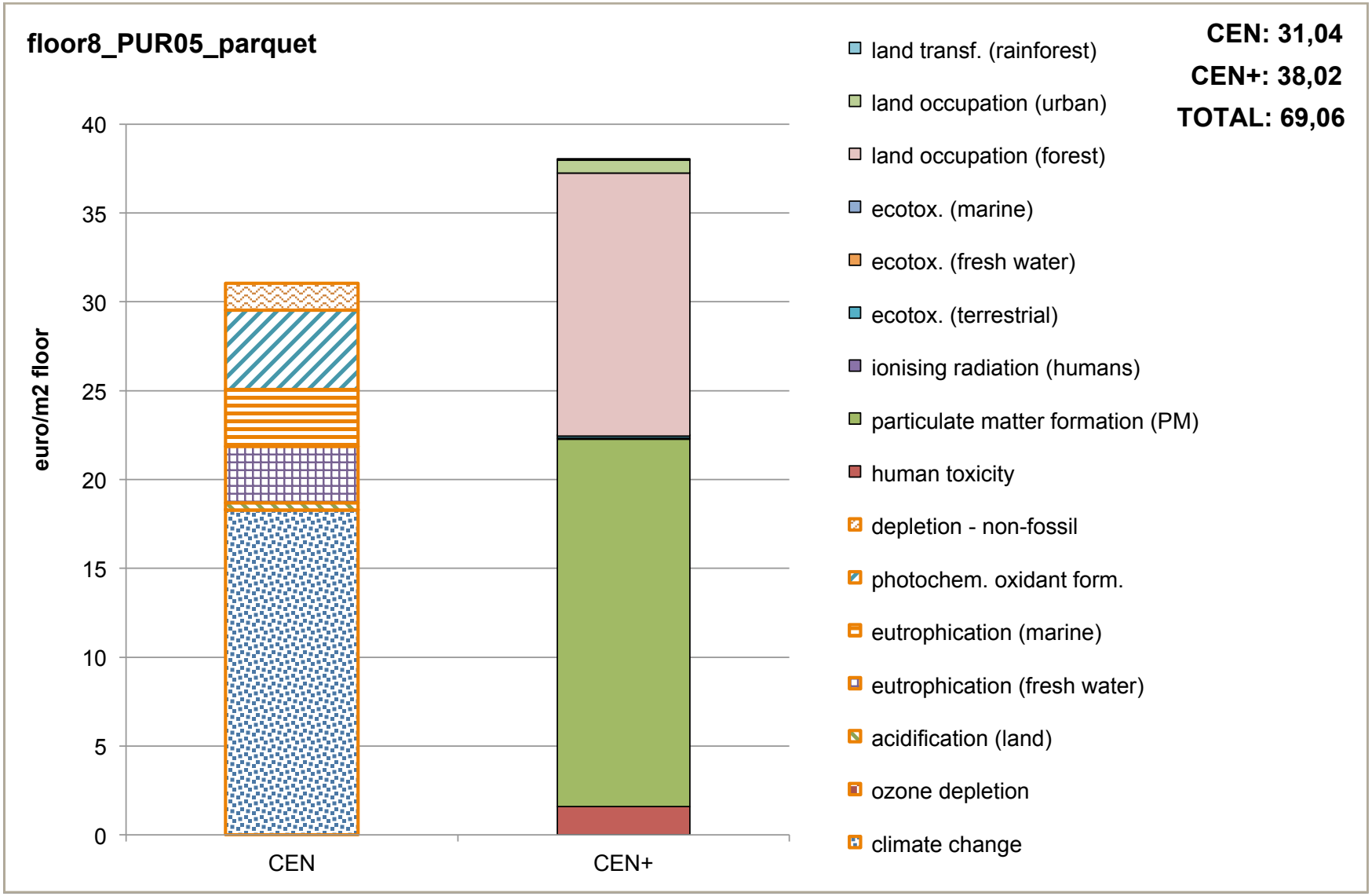

Figure floor 1.8.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor8_PUR05_parquet' per environmental indicator, expressed in monetary units.

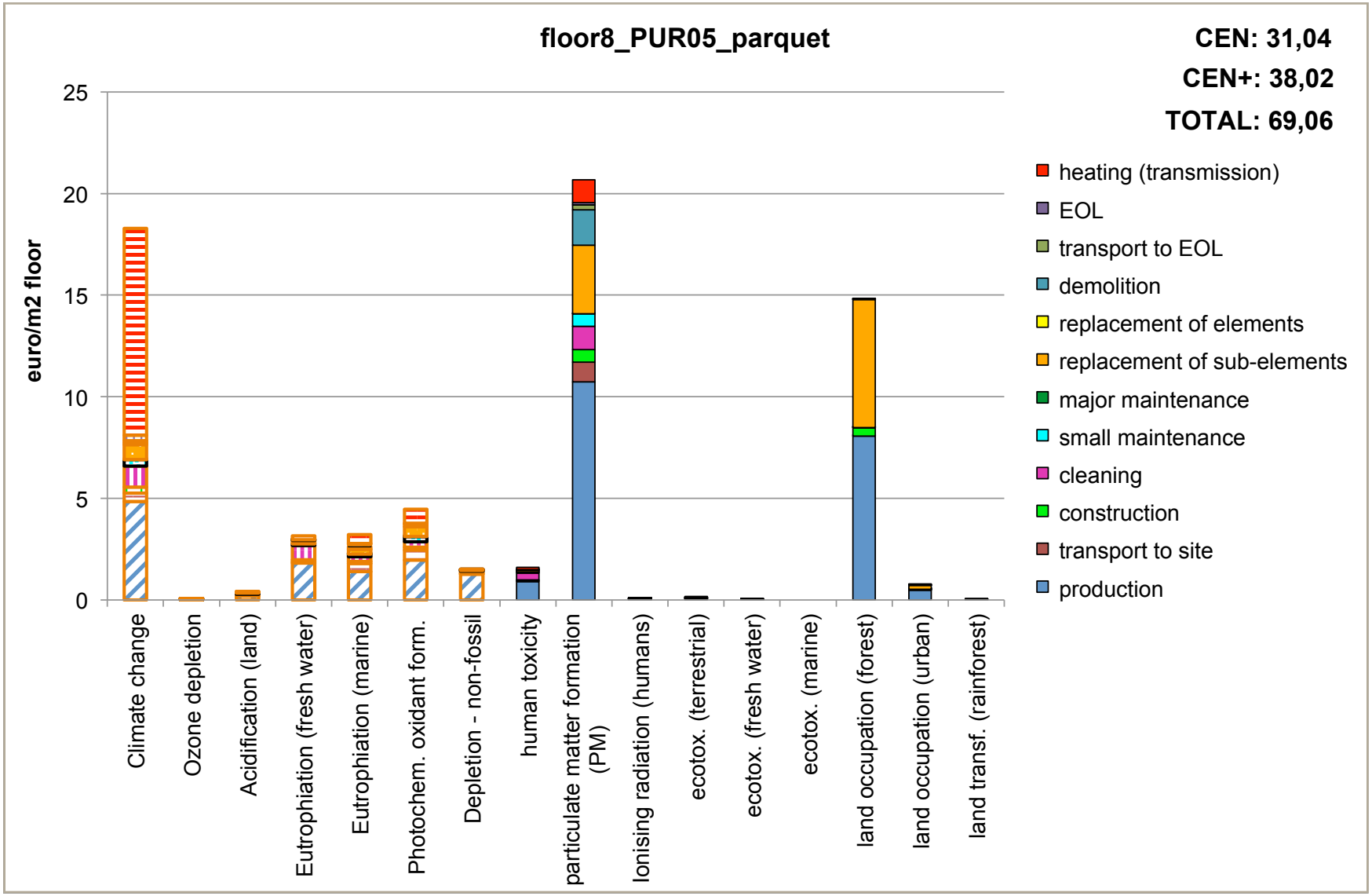

Figure floor 1.8.3: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor8_PUR05_parquet' per life cycle stage and per individual environmental indicator, expressed in monetary units.

1.9. Floor9_PUR05_parquet

Table 1.9: overview of the detailed composition of variant 'floor9_PUR05_parquet'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
floor9_PUR05_parquet									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.3	0.3	na	
Infrastructure for floor beds - filling with sand (compacted) - with machine	m³			120	necessary	0.098	0.13	na	
Infrastructure for floor beds - zuiverheidsbeton 5 cm	m²			120	necessary	0.25	0.05	0.84	0.06
Floor bed - reinforced concrete 15 cm (2 x 150 x 150 - 8mm), poured by pump	m²			120	necessary	1	0.15	1.95	0.08
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - parquet - hardwood (Belgian mix) - glued	m²	1	15	30	aesthetic	1	0.02	0.13	0.17
Floor, supporting structure for finish - screed - cement based - 5cm	m²			120	necessary	1	0.05	0.84	0.06
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	
Floor finishes - thermal insulation - upon floor bed - injected PUR 05 cm	m²			120	necessary	1	0.05	0.023	2.17

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

overview overview CEN overview CEN+

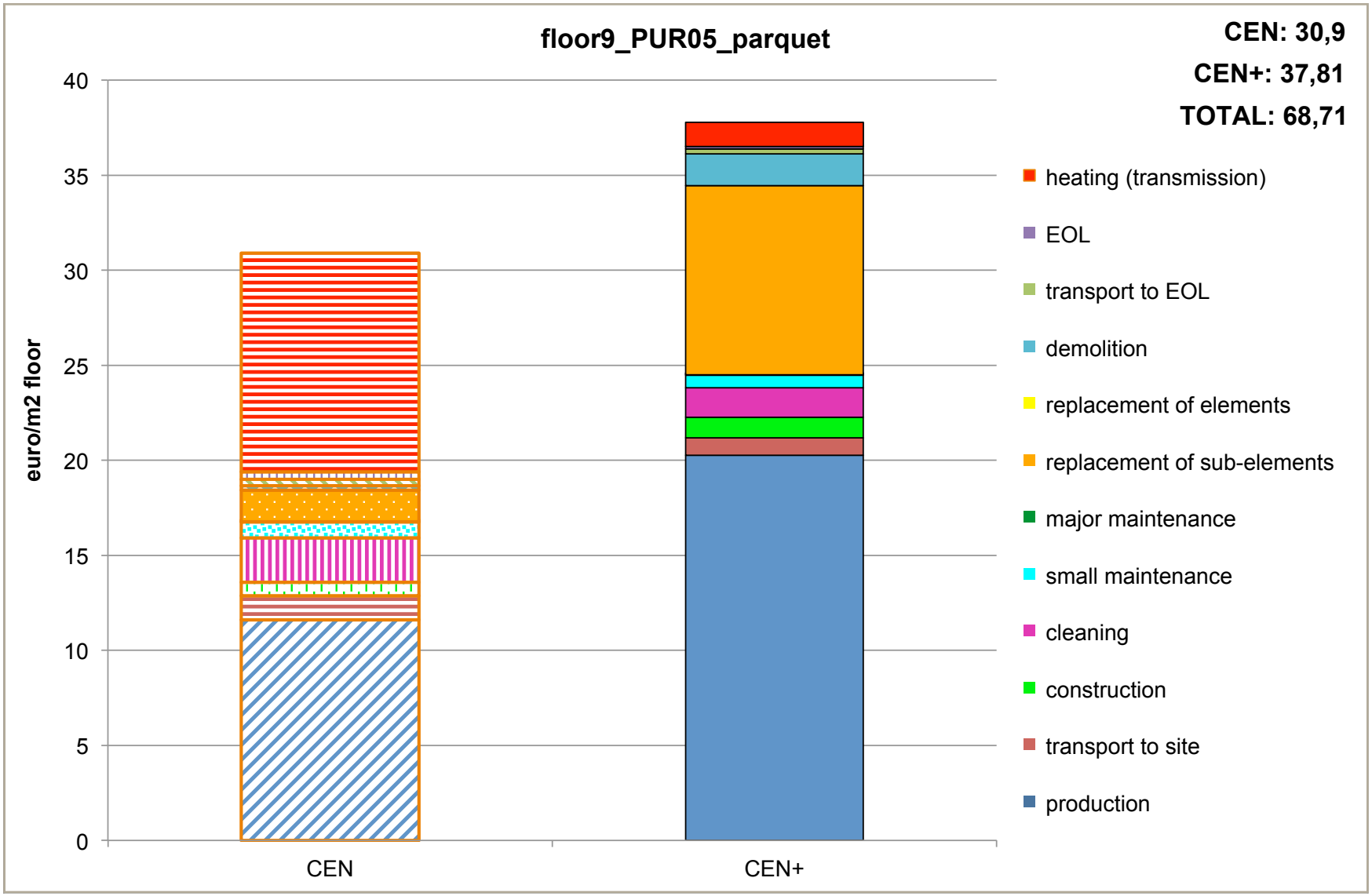

Figure floor 1.9.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor9_PUR05_parquet' per life cycle stage, expressed in monetary units.

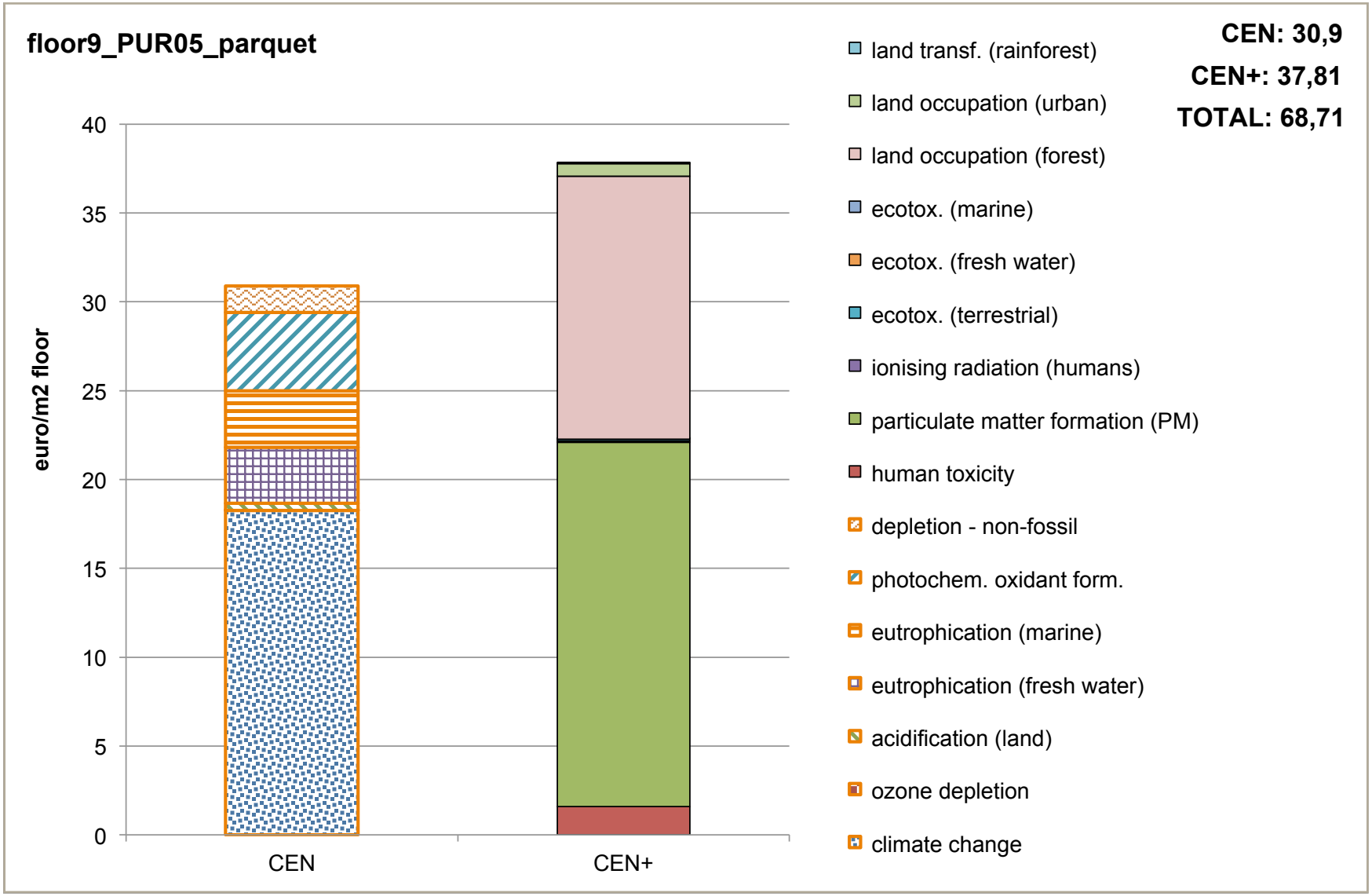

Figure floor 1.9.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor9_PUR05_parquet' per environmental indicator, expressed in monetary units.

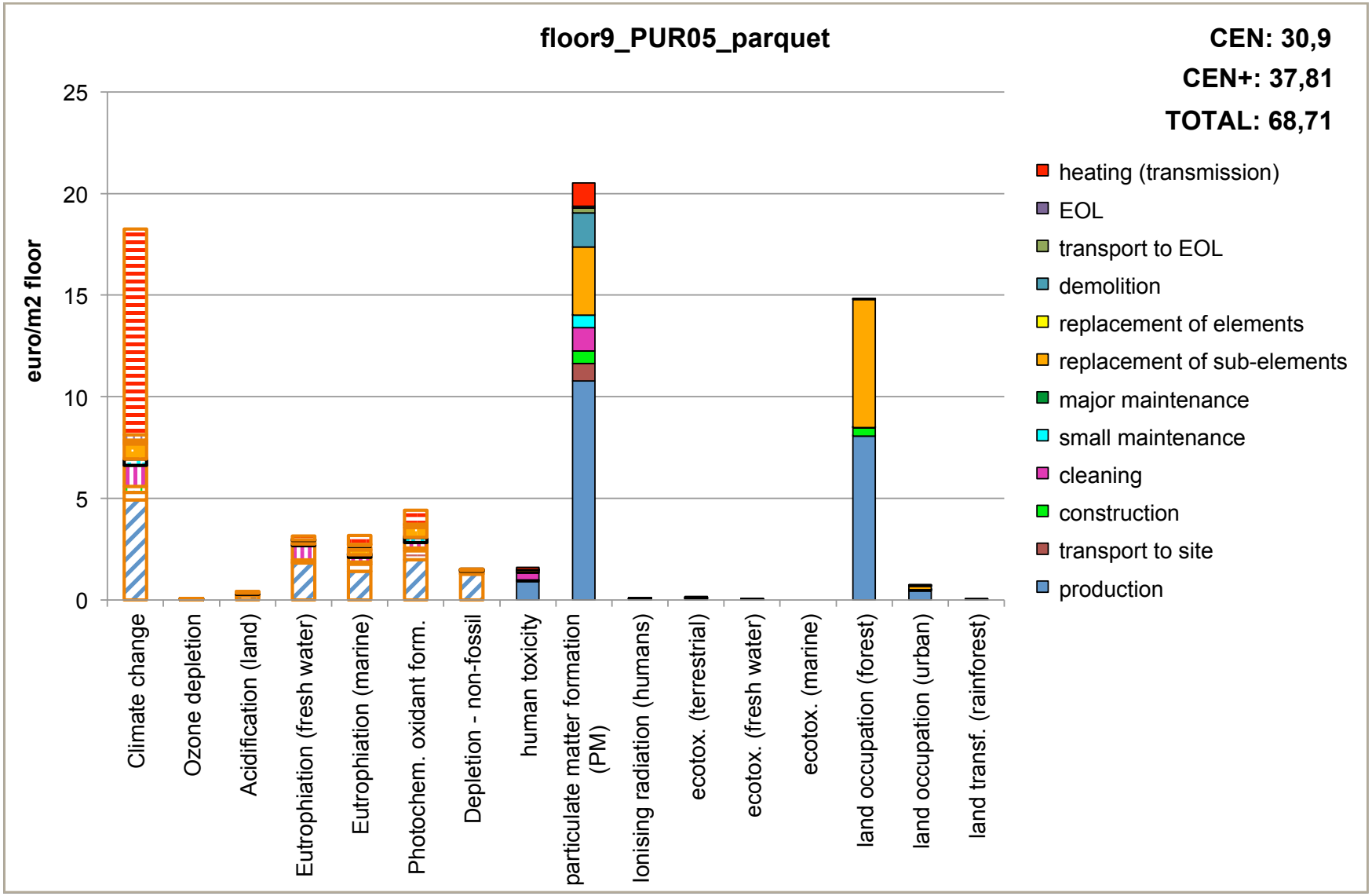

Figure floor 1.9.3: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor9_PUR05_parquet' per life cycle stage and per individual environmental indicator, expressed in monetary units.

1.10. Floor10_cork08_parquet

Table 1.10: overview of the detailed composition of variant 'floor10_cork08_parquet'

Description	u	MiM	MaM	Repl	Repl Type	Ratio	t (m)	λ (W/m.K)	R (m².K/W)
floor10_cork08_parquet									
Excavations for floor beds - with machine - without transport	m³			120	necessary	0.3	0.3	na	
Infrastructure for floor beds - filling with sand (compacted) - with machine	m³			120	necessary	0.1	0.1	na	
Floor bed - reinforced concrete 15 cm (2 x 150 x 150 - 8mm), poured by pump	m²			120	necessary	1	0.15	1.95	0.08
Infrastructure for floor beds - egalisation of ground surface	m²			120	necessary	1		na	
Floor bed - sealing membrane - PE 2/10	m²			120	necessary	1	0	na	
Floor finish - parquet - hardwood (Belgian mix) - glued	m²	1	15	30	aesthetic	1	0.02	0.13	0.17
Floor, supporting structure for finish - screed - cement based - 5cm	m²			120	necessary	2	0.05	0.84	0.06
Floor, supporting structure for chape - reinforcement net	m²			120	necessary	1	0	na	
Floor bed, thermal insulation - upon floor bed - expanded cork 8 cm	m²			120	necessary	1	0.15	0.023	6.52

- u: unit;
- MiM: minor maintenance frequency;
- MaM: major maintenance frequency;
- Repl: replacement frequency;
- type Repl: type of replacement (necessary or aesthetic);
- ratio: quantity per m²;
- t: layer thickness (in m);
- λ: heat conduction coefficient (in W/m.K);
- R: thermal resistance = t/λ (in m2.K/W)

overview overview CEN overview CEN+

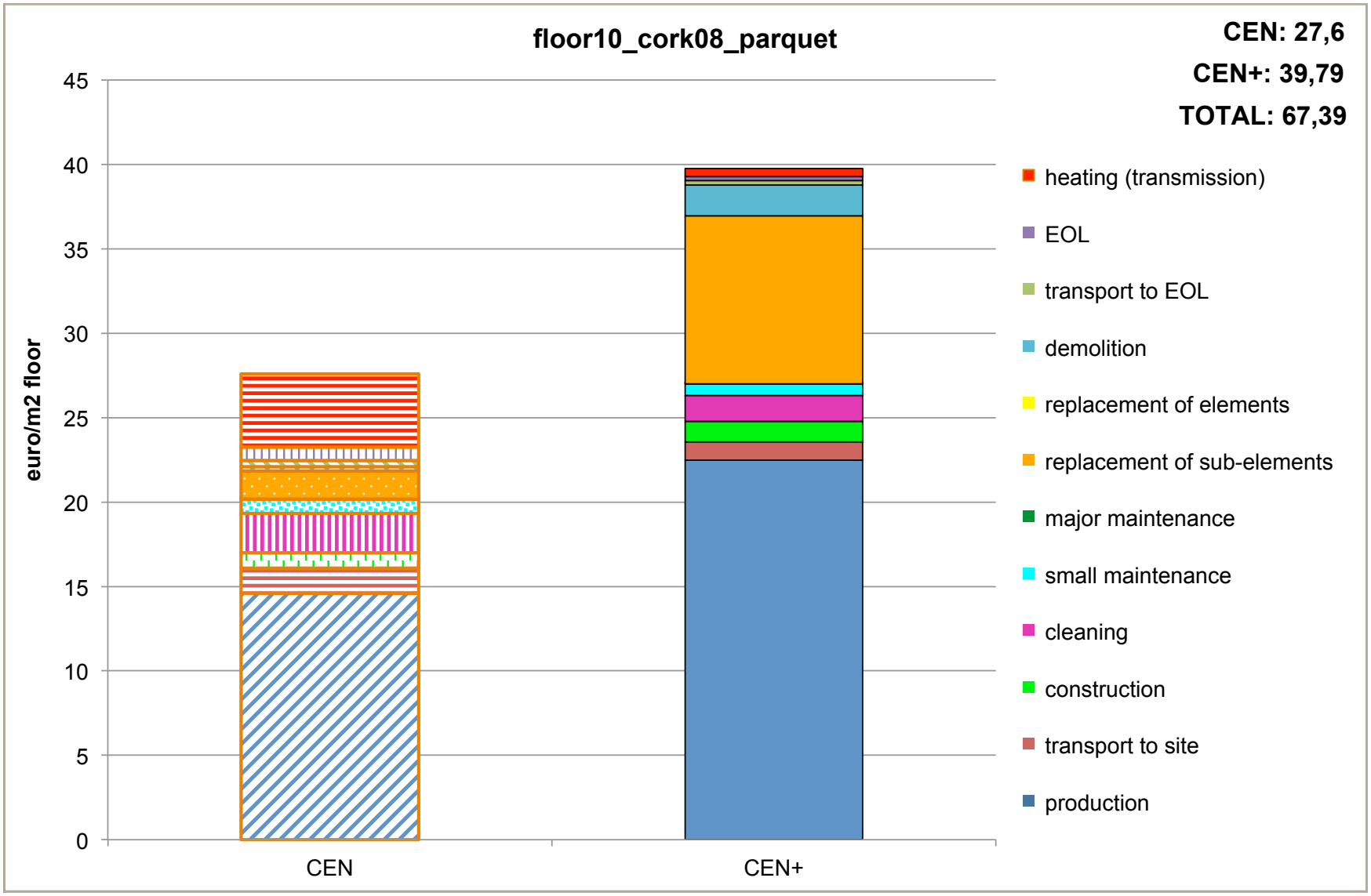

Figure floor 1.10.1: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor10_cork08_parquet' per life cycle stage, expressed in monetary units.

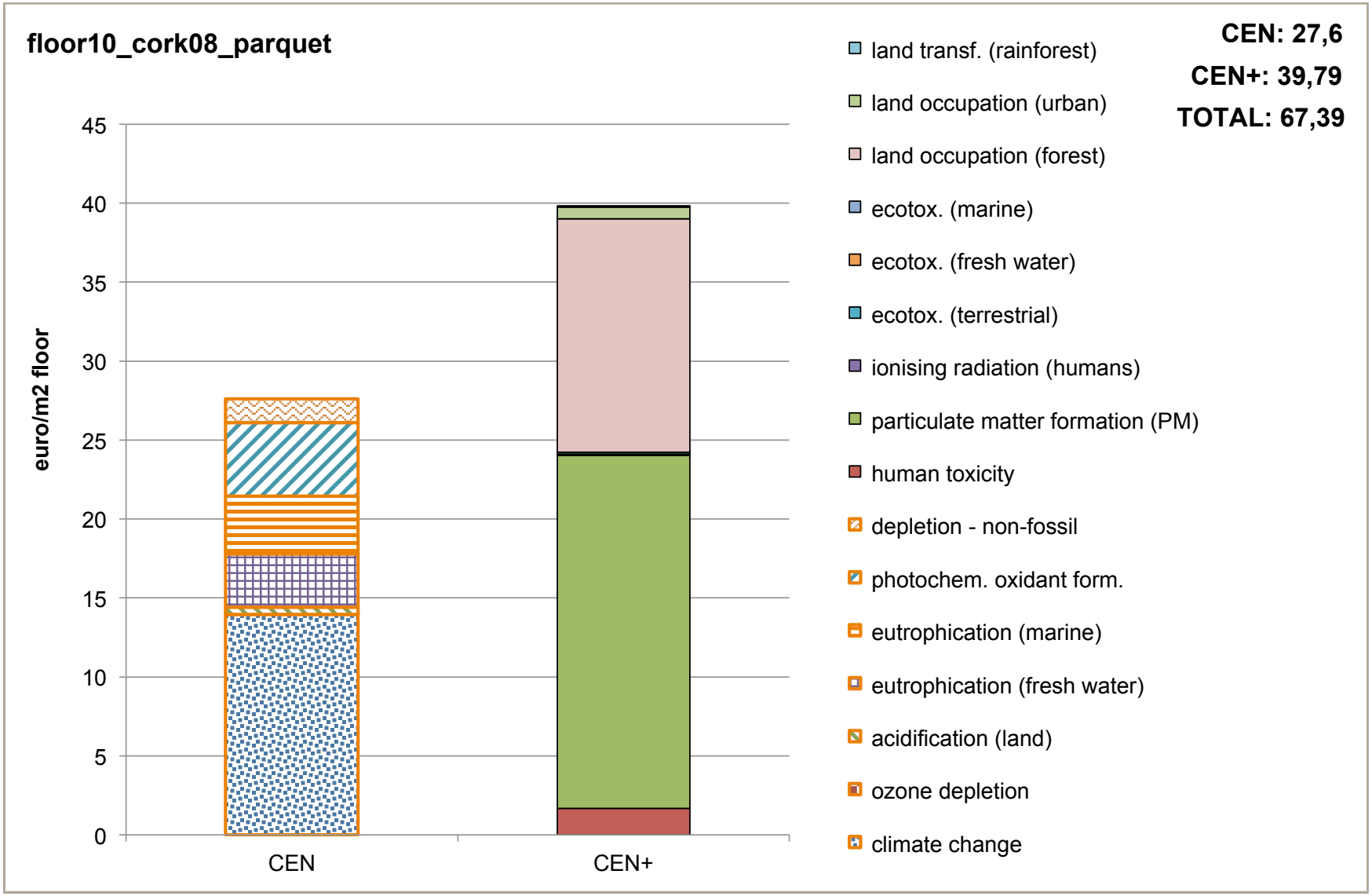

Figure floor 1.10.2: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor10_cork08_parquet' per environmental indicator, expressed in monetary units.

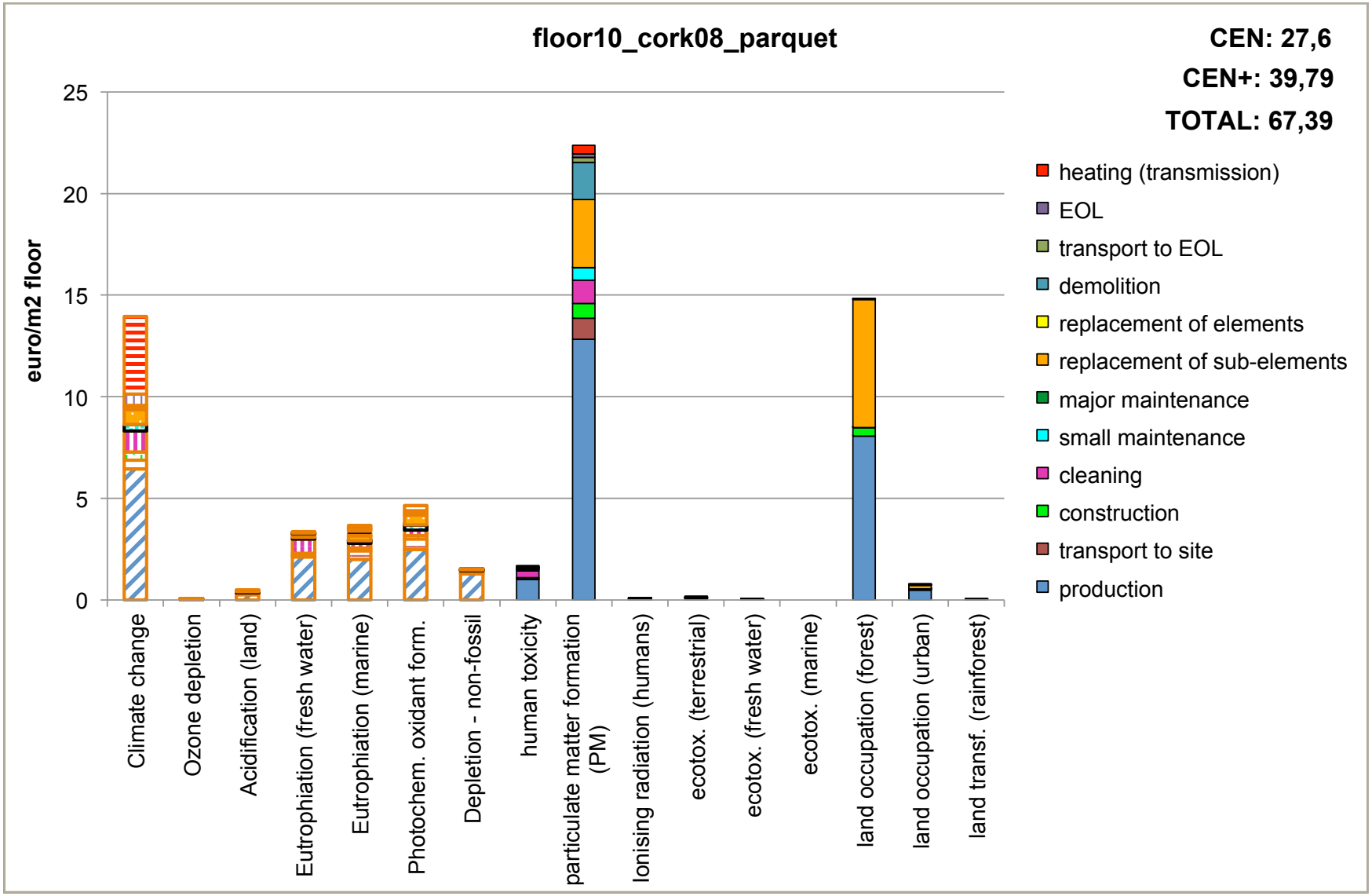

Figure floor 1.10.3: Aggregated environmental profile (divided into CEN and CEN+) of variant 'floor10_cork08_parquet' *per life cycle stage and per individual environmental indicator, expressed in monetary units.*

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