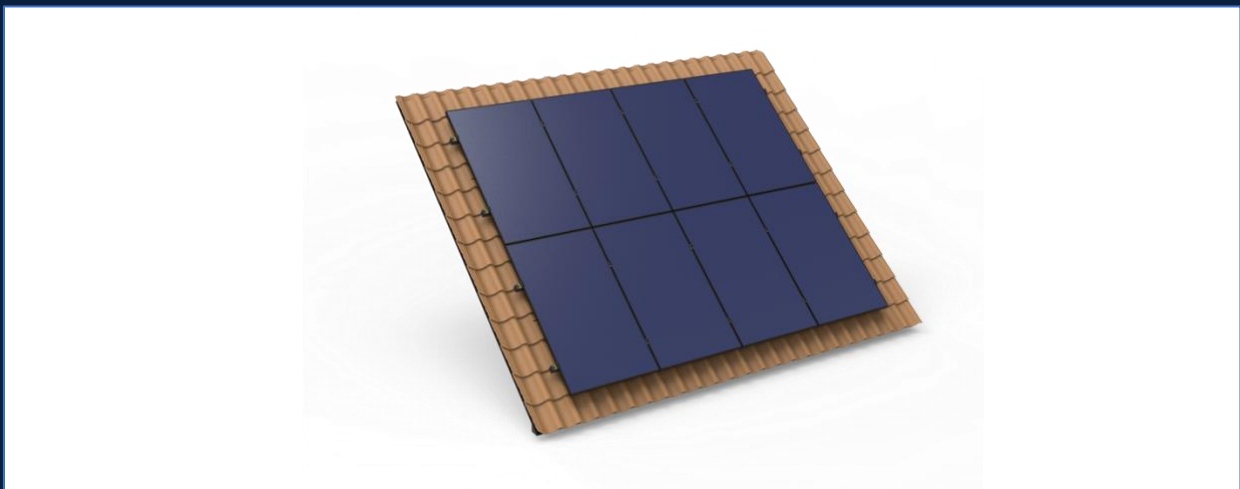


Environmental Product Declaration

Conform ISO 14025 and EN 15804+A2



Productverklaring:

Sunbeam Luna montagesysteem voor zonnepanelen (schuin dak – pannendak/ vezelcementdak)

Functionele Eenheid:

1 stuk montage systeem voor het monteren van 1 zonnepaneel

Verklaard door:

Sunbeam B.V.

Eigenaar declaratie:

Sunbeam B.V.

Verificateur:

Eochain Technologies B.V.

LCA-studie door:

EcoReview B.V.

Declaratienummer:

2024.040.

Datum van publicatie:

17/10/2024

Vervaldatum van publicatie:

17/10/2029

Algemene Informatie

Eigenaar van Declaratie

Naam Sunbeam B.V.
Straat Kryptonweg 8
Postcode 3812 RZ
Stad Amersfoort
Contact Luuk Eeftink



Declaratie voor

Declaratienummer 2024.040.
Datum van publicatie 17/10/2024
Vervaldatum van publicatie 17/10/2029
Product Luna systeem voor zonnepanelen (schuin dak – pannendak/vezelcementdak).
Functionele eenheid 1 stuk montage systeem voor het monteren van 1 zonnepaneel
Referentielevensduur 20 jaar
Schaalbaar product Nee
Productomschrijving Montagesysteem voor het monteren van zonnepanelen op een schuin dak.

Declaratie Informatie

Deze zelfstandig verklaarde EPD is overeenkomstig met ISO 14025:2006 en EN 15804+A2. Dit certificaat is gebaseerd op een LCA-dossier, overeenkomst met ISO14025:2006, ISO14040 en EN15804+A2 en de NMD Bepalingsmethode 1.1. Een EPD van een constructief product is niet vergelijkbaar, wanneer deze niet is opgesteld conform EN15804+A2 en de Bepalingsmethode 1.1. Zeer zorgwekkende stoffen die opgenomen zijn in de 'Candidate List of Substances of Very High Concern for authorization' zijn opgenomen indien toxische inhoud de gestelde limieten voor ECHA-registratie overschrijdt.

Deze LCA-studie is uitgevoerd door: Stijn Mulder, EcoReview B.V.

Bewijs van Verificatie

Verificateur Extern
Naam Lex Roes, Ecochain Technologies B.V.
Verklaring Verificatie van de declaratie en data is onafhankelijk uitgevoerd volgens EN15804+A2 en NMD Bepalingsmethode 1.1.

Handtekening:



LCA Informatie

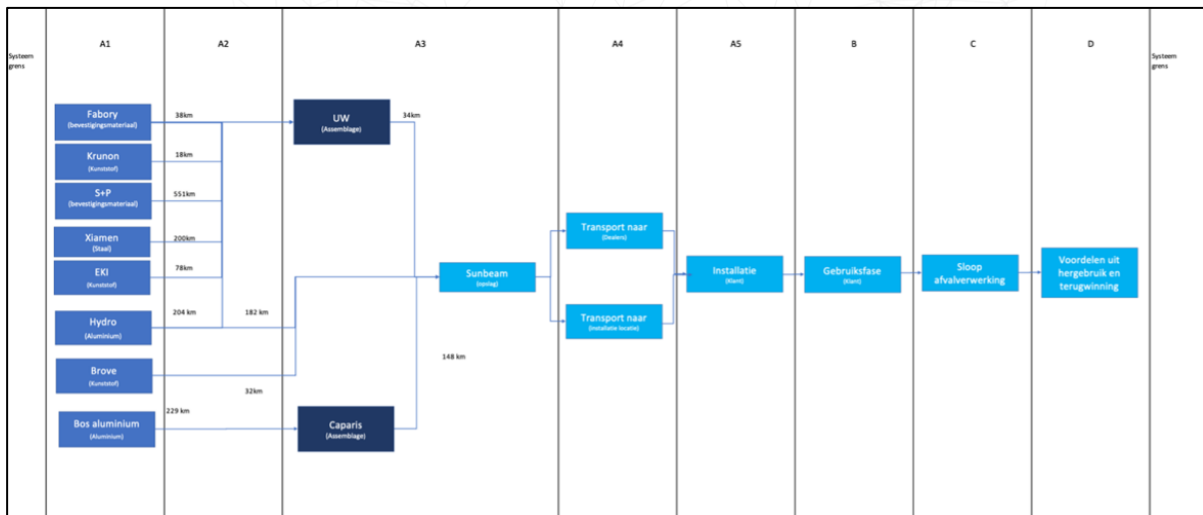
LCA standaard ISO 14040:2006
Product Category Rules (PCR) EN 15804+A2/NMD Bepalingsmethode 1.1
Aanvullende PCR Niet van toepassing
Standaard database Ecoinvent 3.6 + NMD 3.8
LCA-software SimaPro 9.6.0.1
Jaar van datacollectie 2024

Scope van Declaratie

Productie Fase	A1	X	Winning van grondstoffen
	A2	X	Transport naar producent
	A3	X	Productieprocessen
Bouwfase	A4	X	Transport naar gebruikslocatie
	A4	X	Installatie op gebruikslocatie
Gebruiksfase	B1	X	Gebruik product
	B2	X	Onderhoud
	B3	X	Reparatie
	B4	X	Vervanging van onderdelen
	B5	X	Renovatie
	B6	X	Energiegebruik product
Einde Levensduurfase	B7	X	Watergebruik product
	C1	X	Sloop
	C2	X	Transport naar afvalverwerking
	C3	X	Afvalverwerkingsprocessen
Benefits and loads beyond the system boundaries	C4	X	Stort
	D	X	Herwinning van grondstoffen

X = Module toegepast
 MND = Module niet verklaard

Proces Diagram



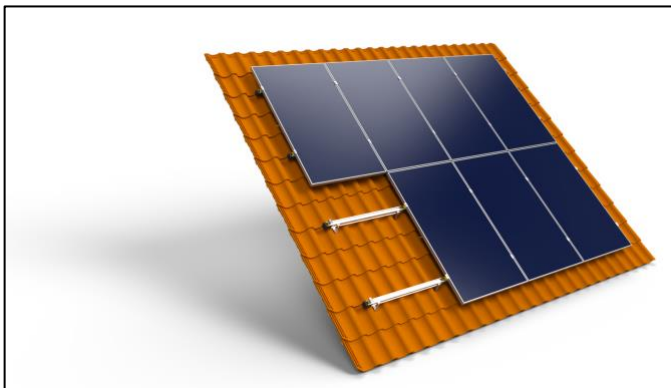
Gedetailleerde Productbeschrijving

Algemene Productinformatie

Sunbeam verkoopt diverse type montage systemen voor zonnepanelen. De diverse varianten verschillen in toepassing voor platte (Nova) of schuine (Luna) daken en ook in de oriëntatie van de panelen. In deze EPD zijn 4 typen opgenomen voor stalen schuine daken. Dit zijn de systemen Luna Landscape *Pannendak* en *Vezelcementdak* voor residentieel gebruik of commercieel gebruik.

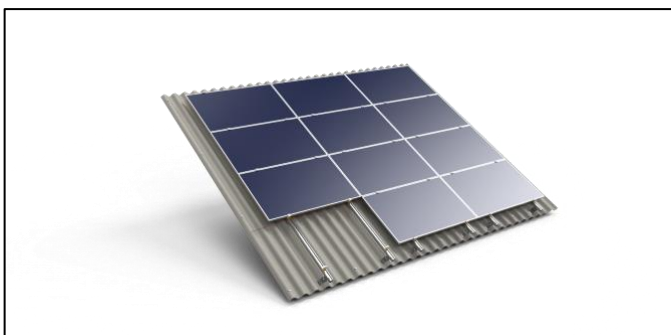
Luna	Pannendak 1	Pannendak 2	Vezelcementdak 1	Vezelcementdak 2
Componenten	Residentieel	Klein Commercieel	Residentieel	Klein Commercieel
Aantal panelen	10-99	100+	12-134	135+

Luna Pannendak



Figuur: Weergave Luna Pannendak systeem.

Luna Vezelcementdak



Figuur: Weergave Luna Vezelcementdak systeem..

Resultaten Luna Pannendak (Residentieel)

Set 1	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	€ 7,30	€ 0,03	€ 0,63	€ 7,97	€ 0,02	€ 0,25	€ -	€ 0,01	€ 0,26	€ 0,00	€ -5,89	€ 2,62
ECI	euro	7,30E+00	2,79E-02	6,34E-01	7,97E+00	2,07E-02	2,48E-01	0,00E+00	7,55E-03	2,63E-01	2,83E-03	-5,89E+00	2,62E+00
Core Impact Indicators													
ADPE	kg Sb eq	1,44E-04	5,82E-06	1,25E-04	2,75E-04	4,40E-06	9,68E-06	0,00E+00	1,60E-06	4,16E-05	1,69E-07	-3,02E-05	3,02E-04
ADPF	kg Sb eq	1,98E-01	1,68E-03	5,02E-02	2,49E-01	1,27E-03	7,79E-03	0,00E+00	4,60E-04	8,45E-03	1,18E-04	-1,32E-01	1,35E-01
GWP	kg CO2 eq	4,08E+01	2,29E-01	6,52E+00	4,76E+01	1,72E-01	1,51E+00	0,00E+00	6,26E-02	2,36E+00	3,26E-02	-3,05E+01	2,12E+01
ODP	kg CFC-11 eq	4,20E-06	4,07E-08	4,83E-07	4,72E-06	3,05E-08	1,47E-07	0,00E+00	1,11E-08	1,46E-07	2,23E-09	-2,79E-06	2,27E-06
POCP	kg C2H4	1,54E-02	1,40E-04	1,76E-03	1,73E-02	1,04E-04	5,45E-04	0,00E+00	3,78E-05	7,05E-04	1,11E-05	-1,18E-02	6,89E-03
AP	kg SO2 eq	1,90E-01	1,06E-03	2,65E-02	2,17E-01	7,57E-04	6,80E-03	0,00E+00	2,76E-04	8,46E-03	7,88E-05	-1,52E-01	8,19E-02
EP	kg PO4 ⁻⁻⁻ eq	1,62E-02	2,03E-04	3,45E-03	1,99E-02	1,49E-04	6,31E-04	0,00E+00	5,41E-05	9,13E-04	1,14E-05	-1,18E-02	9,90E-03
Toxicity Indicators for Dutch Market													
HTP	kg 1,4-DB eq	4,25E+01	9,69E-02	1,68E+00	4,43E+01	7,25E-02	1,36E+00	0,00E+00	2,64E-02	9,83E-01	7,45E-03	-3,56E+01	1,12E+01
FAETP	kg 1,4-DB eq	5,64E-01	2,81E-03	3,63E-02	6,03E-01	2,12E-03	1,96E-02	0,00E+00	7,69E-04	4,67E-02	2,34E-04	-4,65E-01	2,07E-01
MAETP	kg 1,4-DB eq	4,47E+03	1,01E+01	6,78E+01	4,54E+03	7,61E+00	1,40E+02	0,00E+00	2,76E+00	9,72E+01	6,31E-01	-3,87E+03	9,19E+02
TETP	kg 1,4-DB eq	7,80E-02	3,42E-04	1,59E-02	9,42E-02	2,56E-04	2,94E-03	0,00E+00	9,36E-05	3,47E-03	3,03E-05	-4,09E-02	6,02E-02

ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; POCP = Formation potential of tropospheric ozone photochemical oxidants; AP = Acidification potential of land and water; EP = Eutrophication potential; HTP = Human toxicity potential; FAETP = Freshwater aquatic ecotoxicity potential; MAETP = Marine aquatic ecotoxicity potential; TETP = Terrestrial ecotoxicity potential; ECI = Environmental Costs Indicator; ADPF = Abiotic depletion potential for fossil resources

Set 2	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	€ 7,48	€ 0,05	€ 1,01	€ 8,54	€ 0,04	€ 0,27	€ -	€ 0,01	€ 0,40	€ 0,03	€ -5,71	€ 3,57
ECI	euro	7,48E+00	4,73E-02	1,01E+00	8,54E+00	3,55E-02	2,70E-01	0,00E+00	1,29E-02	3,97E-01	2,61E-02	-5,71E+00	3,57E+00
GWP-Total	kg CO2 eq	4,17E+01	2,32E-01	6,25E+00	4,82E+01	1,74E-01	1,52E+00	0,00E+00	6,32E-02	2,37E+00	3,31E-02	-3,11E+01	2,13E+01
GWP-f	kg CO2 eq	4,14E+01	2,31E-01	6,52E+00	4,82E+01	1,74E-01	1,52E+00	0,00E+00	6,31E-02	2,37E+00	3,29E-02	-3,10E+01	2,13E+01
GWP-b	kg CO2 eq	2,36E-01	1,05E-04	-2,86E-01	-4,94E-02	8,01E-05	-1,53E-03	0,00E+00	2,92E-05	-1,86E-03	1,58E-04	-7,94E-02	-1,32E-01
GWP-luluc	kg CO2 eq	7,31E-02	8,55E-05	1,36E-02	8,67E-02	6,36E-05	2,64E-03	0,00E+00	2,32E-05	1,19E-03	1,22E-05	-5,84E-02	3,23E-02
ODP	kg CFC11 eq	5,62E-06	5,10E-08	3,72E-07	6,05E-06	3,83E-08	1,88E-07	0,00E+00	1,39E-08	1,64E-07	2,58E-09	-4,11E-06	2,34E-06
AP	mol H+ eq	2,27E-01	1,40E-03	3,21E-02	2,61E-01	1,01E-03	8,17E-03	0,00E+00	3,67E-04	1,02E-02	9,94E-05	-1,81E-01	9,92E-02
EP-fw	kg P eq	6,80E-04	2,32E-06	4,68E-04	1,15E-03	1,75E-06	3,66E-05	0,00E+00	6,37E-07	6,78E-05	4,67E-07	-4,01E-04	8,57E-04
EP-m	kg N eq	3,34E-02	4,86E-04	5,03E-03	3,90E-02	3,55E-04	1,24E-03	0,00E+00	1,29E-04	1,73E-03	2,55E-05	-2,49E-02	1,76E-02
EP-t	mol N eq	3,69E-01	5,36E-03	6,19E-02	4,36E-01	3,91E-03	1,38E-02	0,00E+00	1,43E-03	2,02E-02	2,85E-04	-2,78E-01	1,98E-01
POCP	kg NMVOC eq	1,12E-01	1,52E-03	1,54E-02	1,29E-01	1,12E-03	4,08E-03	0,00E+00	4,06E-04	5,67E-03	8,52E-05	-8,53E-02	5,48E-02
ADP-mm	kg Sb eq	3,19E-04	5,82E-06	1,18E-04	4,43E-04	4,40E-06	1,47E-05	0,00E+00	1,60E-06	4,16E-05	1,69E-07	-1,88E-04	3,18E-04
ADP-f	MJ	4,53E+02	3,48E+00	1,07E+02	5,64E+02	2,62E+00	1,75E+01	0,00E+00	9,53E-01	1,77E+01	2,24E-01	-2,99E+02	3,04E+02
WDP	m3 depriv.	6,91E+00	1,24E-02	3,54E+00	1,05E+01	9,37E-03	3,19E-01	0,00E+00	3,41E-03	1,62E-01	2,23E-03	-5,41E+00	5,55E+00
PM	disease inc.	2,54E-06	2,06E-08	1,77E-07	2,74E-06	1,56E-08	8,66E-08	0,00E+00	5,67E-09	1,25E-07	1,76E-09	-2,10E-06	8,69E-07
IR	kBq U-235 eq	1,85E+00	1,46E-02	6,12E-01	2,47E+00	1,10E-02	7,69E-02	0,00E+00	3,99E-03	7,54E-02	7,94E-04	-1,11E+00	1,53E+00
ETP-fw	CTUe	1,14E+03	3,10E+00	1,52E+02	1,29E+03	2,33E+00	4,53E+01	0,00E+00	8,49E-01	5,78E+01	1,59E+02	-9,21E+02	6,35E+02
HTP-c	CTUh	1,04E-07	1,01E-10	8,72E-10	1,04E-07	7,57E-11	3,18E-09	0,00E+00	2,76E-11	1,35E-09	1,81E-11	-7,80E-08	3,12E-08
HTP-nc	CTUh	1,47E-06	3,38E-09	4,43E-08	1,52E-06	2,55E-09	4,73E-08	0,00E+00	9,27E-10	5,91E-08	4,67E-10	-1,25E-06	3,75E-07
SQP	Pt	2,03E+02	3,00E+00	6,58E+01	2,71E+02	2,27E+00	8,76E+00	0,00E+00	8,26E-01	1,73E+01	2,80E-01	-1,04E+02	1,97E+02

GWP-total = Climate change; GWP-f = Climate change - Fossil; GWP-b = Climate change - Biogenic; GWP-luluc = Climate change - Land use and LU change; ODP = Ozone depletion; AP = Acidification; EP-fw = Eutrophication, freshwater; EP-m = Eutrophication, marine; EP-T = Eutrophication, terrestrial; POCP = Photochemical ozone formation; ADP-mm = Resource use, minerals and metals; ADP-f = Resource use, fossils; WDP = Water use; PM = Particulate matter; IR = Ionising radiation; ETP-fw = Ecotoxicity, freshwater; HTP-c = Human toxicity, cancer; HTP-nc = Human toxicity, non-cancer; SQP = Land use;

Parameter	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
Resource Use													
PERE	MJ	5,23E+02	0,00E+00	-2,07E+01	5,03E+02	0,00E+00	1,51E+01	0,00E+00	1,18E-02	1,94E+00	9,70E-03	-4,50E+02	6,97E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	5,24E+02	4,34E-02	8,51E-01	5,25E+02	3,28E-02	1,58E+01	0,00E+00	1,19E-02	1,94E+00	1,12E-02	-4,50E+02	9,22E+01
PENRE	MJ	4,25E+02	0,00E+00	-1,15E+01	4,13E+02	0,00E+00	1,30E+01	0,00E+00	1,00E+00	1,88E+01	2,24E-01	-2,68E+02	1,78E+02
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	4,26E+02	3,70E+00	1,16E+02	5,46E+02	2,78E+00	1,71E+01	0,00E+00	1,01E+00	1,89E+01	2,38E-01	-2,68E+02	3,18E+02
PET	MJ	9,50E+02	3,74E+00	1,17E+02	1,07E+03	2,81E+00	3,29E+01	0,00E+00	1,02E+00	2,08E+01	2,50E-01	-7,18E+02	4,10E+02
SM	kg	1,59E-02	0,00E+00	7,58E-03	2,35E-02	0,00E+00	7,04E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,42E-02
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	4,33E+00	4,22E-04	-4,17E-02	4,29E+00	3,19E-04	1,29E-01	0,00E+00	1,16E-04	9,30E-03	8,37E-05	-3,82E+00	6,04E-01
Waste Categories													
HWD	kg	3,82E-04	8,78E-06	1,60E-02	1,64E-02	6,63E-06	2,08E-03	0,00E+00	2,41E-06	5,28E-02	3,06E-07	-2,24E-04	7,11E-02
NHWD	kg	1,99E+01	2,19E-01	3,28E-01	2,05E+01	1,66E-01	6,48E-01	0,00E+00	6,04E-02	6,39E-01	2,65E-01	-1,71E+01	5,14E+00
RWD	kg	1,99E-03	2,29E-05	4,86E-04	2,50E-03	1,72E-05	7,81E-05	0,00E+00	6,25E-06	8,33E-05	1,00E-06	-1,28E-03	1,40E-03
Output Flows													
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	3,83E+00	0,00E+00	3,70E-01	4,20E+00	0,00E+00	3,68E-01	0,00E+00	0,00E+00	8,06E+00	0,00E+00	0,00E+00	1,26E+01
MER	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE-E	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE-T	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; PERM = Use of renewable primary energy resources used as raw materials [MJ]; PERT = Total use of renewable primary energy resources [MJ]; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; PENRM = Use of non-renewable primary energy resources used as raw materials [MJ]; PENRT = Total use of non-renewable primary energy resources [MJ]; PET = Total Energy [MJ]; SM = Use of secondary material [kg]; RSF = Use of renewable secondary fuels [MJ]; NRSF = Use of non-renewable secondary fuels [MJ]; FW = Use of net fresh water [m3]; HWD = Hazardous waste disposed [kg]; NHWD = Non-hazardous waste disposed [kg]; RWD = Radioactive waste disposed [kg]; CRU = Components for re-use [kg]; MFR = Materials for recycling [kg]; MER = Materials for energy recovery [kg]; EE = Exported energy [MJ]

Resultaten Luna Pannendak (Klein Commercieel)

Set 1	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	€ 7,60	€ 0,03	€ 0,66	€ 8,29	€ 0,02	€ 0,26	€ -	€ 0,01	€ 0,27	€ 0,00	€ -6,14	€ 2,71
ECI	euro	7,60E+00	2,76E-02	6,59E-01	8,29E+00	2,16E-02	2,58E-01	0,00E+00	7,86E-03	2,74E-01	2,40E-03	-6,14E+00	2,71E+00
Core Impact Indicators													
ADPE	kg Sb eq	1,38E-04	5,77E-06	1,35E-04	2,79E-04	4,58E-06	9,87E-06	0,00E+00	1,66E-06	4,34E-05	1,65E-07	-3,06E-05	3,08E-04
ADPF	kg Sb eq	2,06E-01	1,67E-03	5,20E-02	2,60E-01	1,32E-03	8,11E-03	0,00E+00	4,79E-04	8,80E-03	1,20E-04	-1,38E-01	1,41E-01
GWP	kg CO2 eq	4,25E+01	2,27E-01	6,76E+00	4,95E+01	1,79E-01	1,57E+00	0,00E+00	6,52E-02	2,46E+00	2,45E-02	-3,18E+01	2,20E+01
ODP	kg CFC-11 eq	4,38E-06	4,03E-08	5,01E-07	4,92E-06	3,18E-08	1,53E-07	0,00E+00	1,15E-08	1,52E-07	2,04E-09	-2,91E-06	2,36E-06
POCP	kg C2H4	1,61E-02	1,39E-04	1,83E-03	1,80E-02	1,08E-04	5,67E-04	0,00E+00	3,93E-05	7,34E-04	1,13E-05	-1,23E-02	7,15E-03
AP	kg SO2 eq	1,97E-01	1,04E-03	2,75E-02	2,26E-01	7,89E-04	7,08E-03	0,00E+00	2,87E-04	8,82E-03	7,90E-05	-1,58E-01	8,50E-02
EP	kg PO4-- eq	1,69E-02	2,00E-04	3,59E-03	2,07E-02	1,55E-04	6,56E-04	0,00E+00	5,63E-05	9,52E-04	1,14E-05	-1,23E-02	1,03E-02
Toxicity Indicators for Dutch Market													
HTP	kg 1,4-DB eq	4,42E+01	9,60E-02	1,75E+00	4,61E+01	7,55E-02	1,42E+00	0,00E+00	2,74E-02	1,02E+00	7,16E-03	-3,71E+01	1,15E+01
FAETP	kg 1,4-DB eq	5,88E-01	2,79E-03	3,77E-02	6,28E-01	2,20E-03	2,04E-02	0,00E+00	8,01E-04	4,87E-02	2,10E-04	-4,85E-01	2,15E-01
MAETP	kg 1,4-DB eq	4,65E+03	1,00E+01	7,00E+01	4,73E+03	7,93E+00	1,45E+02	0,00E+00	2,88E+00	1,01E+02	5,57E-01	-4,04E+03	9,56E+02
TETP	kg 1,4-DB eq	8,10E-02	3,39E-04	1,66E-02	9,79E-02	2,67E-04	3,06E-03	0,00E+00	9,74E-05	3,61E-03	3,01E-05	-4,28E-02	6,22E-02

ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; POCP = Formation potential of tropospheric ozone photochemical oxidants; AP = Acidification potential of land and water; EP = Eutrophication potential; HTP = Human toxicity potential; FAETP = Freshwater aquatic ecotoxicity potential; MAETP = Marine aquatic ecotoxicity potential; TETP = Terrestrial ecotoxicity potential; ECI = Environmental Costs Indicator; ADPF = Abiotic depletion potential for fossil resources

Set 2	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	€ 7,79	€ 0,05	€ 1,05	€ 8,89	€ 0,04	€ 0,28	€ -	€ 0,01	€ 0,41	€ 0,03	€ -5,95	€ 3,71
ECI	euro	7,79E+00	4,69E-02	1,05E+00	8,89E+00	3,70E-02	2,81E-01	0,00E+00	1,34E-02	4,14E-01	2,61E-02	-5,95E+00	3,71E+00
GWP-Total	kg CO2 eq	4,35E+01	2,29E-01	6,49E+00	5,02E+01	1,81E-01	1,59E+00	0,00E+00	6,58E-02	2,47E+00	2,51E-02	-3,24E+01	2,21E+01
GWP-f	kg CO2 eq	4,32E+01	2,29E-01	6,77E+00	5,02E+01	1,81E-01	1,59E+00	0,00E+00	6,57E-02	2,47E+00	2,49E-02	-3,23E+01	2,22E+01
GWP-b	kg CO2 eq	2,46E-01	1,04E-04	-2,96E-01	-5,06E-02	8,35E-05	-1,57E-03	0,00E+00	3,04E-05	-1,92E-03	1,63E-04	-8,29E-02	-1,37E-01
GWP-luluc	kg CO2 eq	7,62E-02	8,46E-05	1,41E-02	9,03E-02	6,63E-05	2,75E-03	0,00E+00	2,41E-05	1,24E-03	1,20E-05	-6,09E-02	3,35E-02
ODP	kg CFC11 eq	5,86E-06	5,06E-08	3,85E-07	6,30E-06	3,99E-08	1,96E-07	0,00E+00	1,45E-08	1,71E-07	2,41E-09	-4,29E-06	2,43E-06
AP	mol H+ eq	2,37E-01	1,38E-03	3,33E-02	2,71E-01	1,05E-03	8,51E-03	0,00E+00	3,82E-04	1,07E-02	9,96E-05	-1,89E-01	1,03E-01
EP-fw	kg P eq	7,08E-04	2,30E-06	4,86E-04	1,20E-03	1,82E-06	3,81E-05	0,00E+00	6,63E-07	7,07E-05	4,60E-07	-4,19E-04	8,90E-04
EP-m	kg N eq	3,48E-02	4,80E-04	5,22E-03	4,05E-02	3,70E-04	1,29E-03	0,00E+00	1,34E-04	1,80E-03	2,55E-05	-2,59E-02	1,82E-02
EP-t	mol N eq	3,84E-01	5,30E-03	6,43E-02	4,53E-01	4,08E-03	1,44E-02	0,00E+00	1,48E-03	2,10E-02	2,85E-04	-2,90E-01	2,05E-01
POCP	kg NMVOC eq	1,16E-01	1,51E-03	1,60E-02	1,34E-01	1,16E-03	4,25E-03	0,00E+00	4,23E-04	5,91E-03	8,56E-05	-8,90E-02	5,68E-02
ADP-mm	kg Sb eq	3,21E-04	5,77E-06	1,27E-04	4,54E-04	4,58E-06	1,51E-05	0,00E+00	1,66E-06	4,34E-05	1,65E-07	-1,95E-04	3,25E-04
ADP-f	MJ	4,72E+02	3,45E+00	1,11E+02	5,87E+02	2,73E+00	1,83E+01	0,00E+00	9,92E-01	1,84E+01	2,27E-01	-3,12E+02	3,16E+02
WDP	m3 depriv.	7,20E+00	1,23E-02	3,67E+00	1,09E+01	9,76E-03	3,32E-01	0,00E+00	3,55E-03	1,68E-01	1,86E-03	-5,64E+00	5,76E+00
PM	disease inc.	2,65E-06	2,05E-08	1,84E-07	2,85E-06	1,62E-08	9,02E-08	0,00E+00	5,91E-09	1,31E-07	1,80E-09	-2,19E-06	9,02E-07
IR	kBq U-235 eq	1,92E+00	1,45E-02	6,35E-01	2,57E+00	1,14E-02	8,00E-02	0,00E+00	4,16E-03	7,86E-02	8,00E-04	-1,15E+00	1,60E+00
ETP-fw	CTUe	1,18E+03	3,07E+00	1,58E+02	1,34E+03	2,43E+00	4,72E+01	0,00E+00	8,84E-01	6,03E+01	1,66E+02	-9,60E+02	6,61E+02
HTP-c	CTUh	1,08E-07	1,00E-10	9,23E-10	1,09E-07	7,89E-11	3,31E-09	0,00E+00	2,87E-11	1,41E-09	1,71E-11	-8,13E-08	3,23E-08
HTP-nc	CTUh	1,53E-06	3,36E-09	4,61E-08	1,58E-06	2,66E-09	4,93E-08	0,00E+00	9,65E-10	6,16E-08	4,50E-10	-1,30E-06	3,89E-07
SQP	Pt	2,11E+02	2,98E+00	6,83E+01	2,82E+02	2,37E+00	9,12E+00	0,00E+00	8,60E-01	1,80E+01	2,90E-01	-1,08E+02	2,05E+02

GWP-total = Climate change; GWP-f = Climate change - Fossil; GWP-b = Climate change - Biogenic; GWP-luluc = Climate change - Land use and LU change; ODP = Ozone depletion; AP = Acidification; EP-fw = Eutrophication, freshwater; EP-m = Eutrophication, marine; EP-T = Eutrophication, terrestrial; POCP = Photochemical ozone formation; ADP-mm = Resource use, minerals and metals; ADP-f = Resource use, fossils; WDP = Water use; PM = Particulate matter; IR = Ionising radiation; ETP-fw = Ecotoxicity, freshwater; HTP-c = Human toxicity, cancer; HTP-nc = Human toxicity, non-cancer; SQP = Land use;

Parameter	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
Resource Use													
PERE	MJ	5,46E+02	0,00E+00	-2,15E+01	5,24E+02	0,00E+00	1,58E+01	0,00E+00	1,23E-02	2,02E+00	1,01E-02	-4,69E+02	7,27E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	5,46E+02	4,31E-02	8,39E-01	5,47E+02	3,41E-02	1,65E+01	0,00E+00	1,24E-02	2,03E+00	1,09E-02	-4,69E+02	9,60E+01
PENRE	MJ	4,43E+02	0,00E+00	-1,19E+01	4,31E+02	0,00E+00	1,36E+01	0,00E+00	1,05E+00	1,96E+01	2,33E-01	-2,80E+02	1,86E+02
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	4,44E+02	3,67E+00	1,21E+02	5,68E+02	2,90E+00	1,78E+01	0,00E+00	1,05E+00	1,96E+01	2,42E-01	-2,80E+02	3,30E+02
PET	MJ	9,90E+02	3,71E+00	1,22E+02	1,12E+03	2,93E+00	3,42E+01	0,00E+00	1,07E+00	2,17E+01	2,53E-01	-7,49E+02	4,26E+02
SM	kg	1,15E-02	0,00E+00	8,34E-03	1,99E-02	0,00E+00	5,96E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,04E-02
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	4,51E+00	4,19E-04	-4,36E-02	4,47E+00	3,32E-04	1,34E-01	0,00E+00	1,21E-04	9,69E-03	7,34E-05	-3,98E+00	6,29E-01
Waste Categories													
HWD	kg	3,96E-04	8,71E-06	1,66E-02	1,70E-02	6,91E-06	2,16E-03	0,00E+00	2,51E-06	5,51E-02	3,07E-07	-2,33E-04	7,40E-02
NHWD	kg	2,08E+01	2,17E-01	3,41E-01	2,13E+01	1,73E-01	6,75E-01	0,00E+00	6,29E-02	6,65E-01	2,76E-01	-1,78E+01	5,34E+00
RWD	kg	2,07E-03	2,27E-05	5,04E-04	2,60E-03	1,79E-05	8,13E-05	0,00E+00	6,51E-06	8,68E-05	1,02E-06	-1,34E-03	1,45E-03
Output Flows													
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	3,99E+00	0,00E+00	3,84E-01	4,38E+00	0,00E+00	3,83E-01	0,00E+00	0,00E+00	8,40E+00	0,00E+00	0,00E+00	1,32E+01
MER	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE-E	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE-T	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; PERM = Use of renewable primary energy resources used as raw materials [MJ]; PERT = Total use of renewable primary energy resources [MJ]; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; PENRM = Use of non-renewable primary energy resources used as raw materials [MJ]; PENRT = Total use of non-renewable primary energy resources [MJ]; PET = Total Energy [MJ]; SM = Use of secondary material [kg]; RSF = Use of renewable secondary fuels [MJ]; NRSF = Use of non-renewable secondary fuels [MJ]; FW = Use of net fresh water [m3]; HWD = Hazardous waste disposed [kg]; NHWD = Non-hazardous waste disposed [kg]; RWD = Radioactive waste disposed [kg]; CRU = Components for re-use [kg]; MFR = Materials for recycling [kg]; MER = Materials for energy recovery [kg]; EE = Exported energy [MJ]

Resultaten Luna Vezelcementdak (Residentieel)

Set 1	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	€ 11,73	€ 0,04	€ 1,07	€ 12,85	€ 0,03	€ 0,40	€ -	€ 0,01	€ 0,41	€ 0,00	€ -9,18	€ 4,53
ECI	euro	1,17E+01	4,36E-02	1,07E+00	1,28E+01	3,33E-02	3,99E-01	0,00E+00	1,21E-02	4,09E-01	4,74E-03	-9,18E+00	4,53E+00
Core Impact Indicators													
ADPE	kg Sb eq	1,95E-04	9,14E-06	8,20E-05	2,86E-04	7,05E-06	1,08E-05	0,00E+00	2,56E-06	6,51E-05	2,70E-07	-2,71E-04	1,01E-04
ADPF	kg Sb eq	3,18E-01	2,64E-03	8,60E-02	4,07E-01	2,03E-03	1,27E-02	0,00E+00	7,37E-04	1,32E-02	1,87E-04	-2,07E-01	2,28E-01
GWP	kg CO2 eq	6,57E+01	3,59E-01	1,12E+01	7,73E+01	2,76E-01	2,44E+00	0,00E+00	1,00E-01	3,67E+00	5,61E-02	-4,77E+01	3,61E+01
ODP	kg CFC-11 eq	6,77E-06	6,37E-08	8,31E-07	7,66E-06	4,90E-08	2,39E-07	0,00E+00	1,77E-08	2,27E-07	3,68E-09	-4,34E-06	3,86E-06
POCP	kg C2H4	2,48E-02	2,19E-04	2,96E-03	2,80E-02	1,67E-04	8,80E-04	0,00E+00	6,05E-05	1,10E-03	1,76E-05	-1,93E-02	1,09E-02
AP	kg SO2 eq	3,05E-01	1,63E-03	4,51E-02	3,52E-01	1,21E-03	1,10E-02	0,00E+00	4,41E-04	1,32E-02	1,25E-04	-2,36E-01	1,42E-01
EP	kg PO4-- eq	2,61E-02	3,15E-04	5,81E-03	3,23E-02	2,38E-04	1,02E-03	0,00E+00	8,66E-05	1,43E-03	1,83E-05	-1,84E-02	1,67E-02
Toxicity Indicators for Dutch Market													
HTP	kg 1,4-DB eq	6,81E+01	1,52E-01	2,73E+00	7,10E+01	1,16E-01	2,18E+00	0,00E+00	4,22E-02	1,54E+00	1,21E-02	-5,54E+01	1,95E+01
FAETP	kg 1,4-DB eq	9,08E-01	4,41E-03	6,09E-02	9,74E-01	3,39E-03	3,15E-02	0,00E+00	1,23E-03	7,26E-02	4,41E-04	-7,17E-01	3,66E-01
MAETP	kg 1,4-DB eq	7,20E+03	1,59E+01	1,23E+02	7,33E+03	1,22E+01	2,25E+02	0,00E+00	4,43E+00	1,52E+02	1,05E+00	-5,99E+03	1,74E+03
TETP	kg 1,4-DB eq	1,25E-01	5,35E-04	2,55E-02	1,51E-01	4,11E-04	4,70E-03	0,00E+00	1,50E-04	5,42E-03	4,82E-05	-3,88E-02	1,23E-01

ADPE = Abiotic depletion potential for non-fossil resources; **ADPF** = Abiotic depletion potential for fossil resources; **GWP** = Global warming potential; **ODP** = Depletion potential of the stratospheric ozone layer; **POCP** = Formation potential of tropospheric ozone photochemical oxidants; **AP** = Acidification potential of land and water; **EP** = Eutrophication potential; **HTP** = Human toxicity potential; **FAETP** = Freshwater aquatic ecotoxicity potential; **MAETP** = Marine aquatic ecotoxicity potential; **TETP** = Terrestrial ecotoxicity potential; **ECI** = Environmental Costs Indicator; **ADPF** = Abiotic depletion potential for fossil resources

Set 2	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	€ 12,04	€ 0,07	€ 1,73	€ 13,84	€ 0,06	€ 0,44	€ -	€ 0,02	€ 0,62	€ 0,04	€ -8,90	€ 6,11
ECI	euro	1,20E+01	7,41E-02	1,73E+00	1,38E+01	5,69E-02	4,37E-01	0,00E+00	2,07E-02	6,18E-01	4,11E-02	-8,90E+00	6,11E+00
GWP-Total	kg CO2 eq	6,72E+01	3,63E-01	1,07E+01	7,83E+01	2,79E-01	2,47E+00	0,00E+00	1,01E-01	3,68E+00	5,69E-02	-4,86E+01	3,62E+01
GWP-f	kg CO2 eq	6,67E+01	3,62E-01	1,12E+01	7,83E+01	2,78E-01	2,47E+00	0,00E+00	1,01E-01	3,68E+00	5,66E-02	-4,85E+01	3,64E+01
GWP-b	kg CO2 eq	3,80E-01	1,65E-04	-4,92E-01	-1,12E-01	1,28E-04	-3,45E-03	0,00E+00	4,68E-05	-3,54E-03	2,55E-04	-1,18E-01	-2,36E-01
GWP-luluc	kg CO2 eq	1,18E-01	1,34E-04	2,31E-02	1,41E-01	1,02E-04	4,29E-03	0,00E+00	3,71E-05	1,86E-03	1,93E-05	-9,01E-02	5,71E-02
ODP	kg CFC11 eq	9,06E-06	8,00E-08	6,42E-07	9,79E-06	6,14E-08	3,04E-07	0,00E+00	2,23E-08	2,55E-07	4,24E-09	-6,38E-06	4,06E-06
AP	mol H+ eq	3,66E-01	2,17E-03	5,43E-02	4,22E-01	1,61E-03	1,32E-02	0,00E+00	5,87E-04	1,60E-02	1,58E-04	-2,83E-01	1,71E-01
EP-fw	kg P eq	1,09E-03	3,64E-06	7,99E-04	1,90E-03	2,81E-06	6,02E-05	0,00E+00	1,02E-06	1,06E-04	7,42E-07	-6,39E-04	1,43E-03
EP-m	kg N eq	5,38E-02	7,55E-04	8,59E-03	6,32E-02	5,69E-04	2,00E-03	0,00E+00	2,06E-04	2,70E-03	4,08E-05	-3,89E-02	2,98E-02
EP-t	mol N eq	5,92E-01	8,33E-03	1,02E-01	7,03E-01	6,27E-03	2,23E-02	0,00E+00	2,28E-03	3,16E-02	4,56E-04	-4,34E-01	3,32E-01
POCP	kg NMVOC eq	1,80E-01	2,37E-03	2,63E-02	2,09E-01	1,79E-03	6,60E-03	0,00E+00	6,50E-04	8,88E-03	1,36E-04	-1,35E-01	9,18E-02
ADP-mm	kg Sb eq	4,77E-04	9,14E-06	6,99E-05	5,56E-04	7,05E-06	1,89E-05	0,00E+00	2,56E-06	6,51E-05	2,70E-07	-5,15E-04	1,36E-04
ADP-f	MJ	7,29E+02	5,46E+00	1,84E+02	9,19E+02	4,20E+00	2,86E+01	0,00E+00	1,53E+00	2,75E+01	3,56E-01	-4,66E+02	5,15E+02
WDP	m3 depriv.	1,11E+01	1,95E-02	6,06E+00	1,72E+01	1,50E-02	5,24E-01	0,00E+00	5,46E-03	2,52E-01	3,75E-03	-8,47E+00	9,54E+00
PM	disease inc.	4,09E-06	3,24E-08	2,96E-07	4,42E-06	2,50E-08	1,40E-07	0,00E+00	9,09E-09	1,96E-07	2,78E-09	-3,29E-06	1,51E-06
IR	kBq U-235 eq	2,98E+00	2,29E-02	1,05E+00	4,05E+00	1,76E-02	1,26E-01	0,00E+00	6,39E-03	1,18E-01	1,27E-03	-1,70E+00	2,61E+00
ETP-fw	CTUe	1,83E+03	4,86E+00	2,58E+02	2,09E+03	3,74E+00	7,30E+01	0,00E+00	1,36E+00	9,02E+01	2,47E+02	-1,44E+03	1,06E+03
HTP-c	CTUh	1,66E-07	1,58E-10	1,00E-09	1,67E-07	1,21E-10	5,09E-09	0,00E+00	4,41E-11	2,11E-09	2,92E-11	-1,21E-07	5,41E-08
HTP-nc	CTUh	2,36E-06	5,31E-09	7,04E-08	2,44E-06	4,09E-09	7,61E-08	0,00E+00	1,49E-09	9,23E-08	7,65E-10	-1,84E-06	7,73E-07
SQP	Pt	3,26E+02	4,71E+00	1,13E+02	4,44E+02	3,64E+00	1,43E+01	0,00E+00	1,32E+00	2,70E+01	4,49E-01	-1,62E+02	3,29E+02

GWP-total = Climate change; GWP-f = Climate change - Fossil; GWP-b = Climate change - Biogenic; GWP-luluc = Climate change - Land use and LU change; ODP = Ozone depletion; AP = Acidification; EP-fw = Eutrophication, freshwater; EP-m = Eutrophication, marine; EP-T = Eutrophication, terrestrial; POCP = Photochemical ozone formation; ADP-mm = Resource use, minerals and metals; ADP-f = Resource use, fossils; WDP = Water use; PM = Particulate matter; IR = Ionising radiation; ETP-fw = Ecotoxicity, freshwater; HTP-c = Human toxicity, cancer; HTP-nc = Human toxicity, non-cancer; SQP = Land use;

Parameter	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
Resource Use													
PERE	MJ	8,44E+02	0,00E+00	-3,45E+01	8,09E+02	0,00E+00	2,44E+01	0,00E+00	1,83E-02	3,00E+00	1,50E-02	-6,97E+02	1,40E+02
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	8,44E+02	6,82E-02	2,52E+00	8,47E+02	5,26E-02	2,55E+01	0,00E+00	1,91E-02	3,04E+00	1,80E-02	-6,97E+02	1,78E+02
PENRE	MJ	6,85E+02	0,00E+00	-1,91E+01	6,66E+02	0,00E+00	2,09E+01	0,00E+00	1,55E+00	2,91E+01	3,46E-01	-4,15E+02	3,02E+02
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	6,86E+02	5,80E+00	2,00E+02	8,92E+02	4,46E+00	2,78E+01	0,00E+00	1,62E+00	2,94E+01	3,79E-01	-4,18E+02	5,37E+02
PET	MJ	1,53E+03	5,87E+00	2,02E+02	1,74E+03	4,51E+00	5,33E+01	0,00E+00	1,64E+00	3,24E+01	3,97E-01	-1,12E+03	7,16E+02
SM	kg	2,08E-02	0,00E+00	0,00E+00	2,08E-02	0,00E+00	6,23E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,14E-02
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	6,98E+00	6,63E-04	-6,32E-02	6,91E+00	5,11E-04	2,08E-01	0,00E+00	1,86E-04	1,45E-02	1,45E-04	-5,92E+00	1,22E+00
Waste Categories													
HWD	kg	6,09E-04	1,38E-05	2,73E-02	2,80E-02	1,06E-05	3,29E-03	0,00E+00	3,86E-06	8,18E-02	4,89E-07	-4,07E-04	1,13E-01
NHWD	kg	3,21E+01	3,44E-01	5,74E-01	3,30E+01	2,66E-01	1,04E+00	0,00E+00	9,68E-02	9,94E-01	4,34E-01	-2,65E+01	9,31E+00
RWD	kg	3,20E-03	3,59E-05	8,35E-04	4,08E-03	2,76E-05	1,27E-04	0,00E+00	1,00E-05	1,30E-04	1,61E-06	-1,99E-03	2,39E-03
Output Flows													
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	6,17E+00	0,00E+00	6,15E-01	6,79E+00	0,00E+00	5,91E-01	0,00E+00	0,00E+00	1,29E+01	0,00E+00	0,00E+00	2,03E+01
MER	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE-E	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE-T	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; PERM = Use of renewable primary energy resources used as raw materials [MJ]; PERT = Total use of renewable primary energy resources [MJ]; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; PENRM = Use of non-renewable primary energy resources used as raw materials [MJ]; PENRT = Total use of non-renewable primary energy resources [MJ]; PET = Total Energy [MJ]; SM = Use of secondary material [kg]; RSF = Use of renewable secondary fuels [MJ]; NRSF = Use of non-renewable secondary fuels [MJ]; FW = Use of net fresh water [m3]; HWD = Hazardous waste disposed [kg]; NHWD = Non-hazardous waste disposed [kg]; RWD = Radioactive waste disposed [kg]; CRU = Components for re-use [kg]; MFR = Materials for recycling [kg]; MER = Materials for energy recovery [kg]; EE = Exported energy [MJ]

Resultaten Luna Vezelcementdak (Klein Commercieel)

Set 1	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	€ 8,61	€ 0,03	€ 0,79	€ 9,43	€ 0,02	€ 0,29	€ -	€ 0,01	€ 0,30	€ 0,00	€ -6,75	€ 3,31
ECI	euro	8,61E+00	3,03E-02	7,86E-01	9,43E+00	2,44E-02	2,93E-01	0,00E+00	8,86E-03	3,01E-01	2,92E-03	-6,75E+00	3,31E+00
Core Impact Indicators													
ADPE	kg Sb eq	1,51E-04	6,34E-06	6,01E-05	2,17E-04	5,17E-06	8,16E-06	0,00E+00	1,87E-06	4,79E-05	1,87E-07	-1,86E-04	9,47E-05
ADPF	kg Sb eq	2,33E-01	1,83E-03	6,30E-02	2,98E-01	1,49E-03	9,30E-03	0,00E+00	5,40E-04	9,67E-03	1,34E-04	-1,52E-01	1,67E-01
GWP	kg CO2 eq	4,82E+01	2,50E-01	8,20E+00	5,67E+01	2,02E-01	1,79E+00	0,00E+00	7,35E-02	2,70E+00	3,17E-02	-3,51E+01	2,64E+01
ODP	kg CFC-11 eq	4,96E-06	4,42E-08	6,09E-07	5,62E-06	3,59E-08	1,75E-07	0,00E+00	1,30E-08	1,67E-07	2,41E-09	-3,19E-06	2,82E-06
POCP	kg C2H4	1,82E-02	1,52E-04	2,17E-03	2,05E-02	1,22E-04	6,45E-04	0,00E+00	4,43E-05	8,09E-04	1,26E-05	-1,42E-02	7,99E-03
AP	kg SO2 eq	2,24E-01	1,14E-03	3,30E-02	2,58E-01	8,90E-04	8,07E-03	0,00E+00	3,24E-04	9,71E-03	8,88E-05	-1,74E-01	1,03E-01
EP	kg PO4-- eq	1,92E-02	2,20E-04	4,26E-03	2,36E-02	1,75E-04	7,49E-04	0,00E+00	6,35E-05	1,05E-03	1,29E-05	-1,35E-02	1,22E-02
Toxicity Indicators for Dutch Market													
HTP	kg 1,4-DB eq	5,01E+01	1,05E-01	2,00E+00	5,22E+01	8,52E-02	1,60E+00	0,00E+00	3,09E-02	1,13E+00	8,25E-03	-4,07E+01	1,43E+01
FAETP	kg 1,4-DB eq	6,66E-01	3,06E-03	4,46E-02	7,14E-01	2,49E-03	2,31E-02	0,00E+00	9,03E-04	5,33E-02	2,86E-04	-5,28E-01	2,67E-01
MAETP	kg 1,4-DB eq	5,28E+03	1,10E+01	8,95E+01	5,38E+03	8,95E+00	1,65E+02	0,00E+00	3,25E+00	1,11E+02	6,70E-01	-4,41E+03	1,26E+03
TETP	kg 1,4-DB eq	9,16E-02	3,72E-04	1,87E-02	1,11E-01	3,01E-04	3,45E-03	0,00E+00	1,10E-04	3,98E-03	3,39E-05	-3,00E-02	8,86E-02

ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; POCP = Formation potential of tropospheric ozone photochemical oxidants; AP = Acidification potential of land and water; EP = Eutrophication potential; HTP = Human toxicity potential; FAETP = Freshwater aquatic ecotoxicity potential; MAETP = Marine aquatic ecotoxicity potential; TETP = Terrestrial ecotoxicity potential
; ECI = Environmental Costs Indicator; ADPF = Abiotic depletion potential for fossil resources

Set 2	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
ECI	euro	€ 8,83	€ 0,05	€ 1,26	€ 10,15	€ 0,04	€ 0,32	€ -	€ 0,02	€ 0,45	€ 0,03	€ -6,55	€ 4,46
ECI	euro	8,83E+00	5,15E-02	1,26E+00	1,02E+01	4,17E-02	3,21E-01	0,00E+00	1,51E-02	4,54E-01	2,91E-02	-6,55E+00	4,46E+00
GWP-Total	kg CO2 eq	4,93E+01	2,52E-01	7,87E+00	5,74E+01	2,04E-01	1,81E+00	0,00E+00	7,42E-02	2,71E+00	3,23E-02	-3,58E+01	2,65E+01
GWP-f	kg CO2 eq	4,90E+01	2,52E-01	8,21E+00	5,74E+01	2,04E-01	1,81E+00	0,00E+00	7,41E-02	2,71E+00	3,21E-02	-3,57E+01	2,66E+01
GWP-b	kg CO2 eq	2,79E-01	1,15E-04	-3,61E-01	-8,19E-02	9,42E-05	-2,53E-03	0,00E+00	3,43E-05	-2,56E-03	1,85E-04	-8,69E-02	-1,74E-01
GWP-luluc	kg CO2 eq	8,63E-02	9,29E-05	1,69E-02	1,03E-01	7,48E-05	3,15E-03	0,00E+00	2,72E-05	1,37E-03	1,35E-05	-6,63E-02	4,17E-02
ODP	kg CFC11 eq	6,65E-06	5,55E-08	4,71E-07	7,17E-06	4,50E-08	2,23E-07	0,00E+00	1,63E-08	1,88E-07	2,83E-09	-4,69E-06	2,96E-06
AP	mol H+ eq	2,68E-01	1,51E-03	3,98E-02	3,10E-01	1,18E-03	9,70E-03	0,00E+00	4,30E-04	1,18E-02	1,12E-04	-2,08E-01	1,25E-01
EP-fw	kg P eq	8,03E-04	2,53E-06	5,86E-04	1,39E-03	2,06E-06	4,42E-05	0,00E+00	7,48E-07	7,77E-05	5,18E-07	-4,69E-04	1,05E-03
EP-m	kg N eq	3,95E-02	5,26E-04	6,29E-03	4,63E-02	4,17E-04	1,47E-03	0,00E+00	1,51E-04	1,99E-03	2,89E-05	-2,86E-02	2,18E-02
EP-t	mol N eq	4,35E-01	5,80E-03	7,50E-02	5,16E-01	4,60E-03	1,64E-02	0,00E+00	1,67E-03	2,32E-02	3,23E-04	-3,19E-01	2,43E-01
POCP	kg NMVOC eq	1,32E-01	1,65E-03	1,93E-02	1,53E-01	1,31E-03	4,84E-03	0,00E+00	4,77E-04	6,52E-03	9,66E-05	-9,91E-02	6,71E-02
ADP-mm	kg Sb eq	3,58E-04	6,34E-06	5,12E-05	4,16E-04	5,17E-06	1,41E-05	0,00E+00	1,87E-06	4,79E-05	1,87E-07	-3,65E-04	1,20E-04
ADP-f	MJ	5,35E+02	3,79E+00	1,35E+02	6,74E+02	3,08E+00	2,10E+01	0,00E+00	1,12E+00	2,02E+01	2,55E-01	-3,43E+02	3,77E+02
WDP	m3 depriv.	8,17E+00	1,35E-02	4,44E+00	1,26E+01	1,10E-02	3,85E-01	0,00E+00	4,00E-03	1,85E-01	2,28E-03	-6,23E+00	6,98E+00
PM	disease inc.	3,00E-06	2,25E-08	2,17E-07	3,24E-06	1,83E-08	1,02E-07	0,00E+00	6,66E-09	1,44E-07	2,01E-09	-2,42E-06	1,10E-06
IR	kBq U-235 eq	2,18E+00	1,59E-02	7,71E-01	2,97E+00	1,29E-02	9,22E-02	0,00E+00	4,69E-03	8,64E-02	9,07E-04	-1,25E+00	1,91E+00
ETP-fw	CTUe	1,34E+03	3,37E+00	1,89E+02	1,53E+03	2,74E+00	5,36E+01	0,00E+00	9,97E-01	6,63E+01	1,81E+02	-1,06E+03	7,78E+02
HTP-c	CTUh	1,22E-07	1,10E-10	7,26E-10	1,23E-07	8,91E-11	3,74E-09	0,00E+00	3,24E-11	1,55E-09	1,98E-11	-8,89E-08	3,95E-08
HTP-nc	CTUh	1,73E-06	3,68E-09	5,14E-08	1,79E-06	3,00E-09	5,58E-08	0,00E+00	1,09E-09	6,79E-08	5,25E-10	-1,36E-06	5,57E-07
SQP	Pt	2,39E+02	3,27E+00	8,29E+01	3,26E+02	2,67E+00	1,05E+01	0,00E+00	9,70E-01	1,99E+01	3,28E-01	-1,19E+02	2,41E+02

GWP-total = Climate change; GWP-f = Climate change - Fossil; GWP-b = Climate change - Biogenic; GWP-luluc = Climate change - Land use and LU change; ODP = Ozone depletion; AP = Acidification; EP-fw = Eutrophication, freshwater; EP-m = Eutrophication, marine; EP-T = Eutrophication, terrestrial; POCP = Photochemical ozone formation; ADP-mm = Resource use, minerals and metals; ADP-f = Resource use, fossils; WDP = Water use; PM = Particulate matter; IR = Ionising radiation; ETP-fw = Ecotoxicity, freshwater; HTP-c = Human toxicity, cancer; HTP-nc = Human toxicity, non-cancer; SQP = Land use;

Parameter	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D	A1-D
Resource Use													
PERE	MJ	6,19E+02	0,00E+00	-2,53E+01	5,94E+02	0,00E+00	1,79E+01	0,00E+00	1,35E-02	2,21E+00	1,10E-02	-5,13E+02	1,01E+02
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	6,19E+02	4,73E-02	1,79E+00	6,21E+02	3,85E-02	1,87E+01	0,00E+00	1,40E-02	2,23E+00	1,25E-02	-5,13E+02	1,29E+02
PENRE	MJ	5,02E+02	0,00E+00	-1,40E+01	4,88E+02	0,00E+00	1,53E+01	0,00E+00	1,14E+00	2,14E+01	2,55E-01	-3,05E+02	2,21E+02
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	5,04E+02	4,02E+00	1,46E+02	6,54E+02	3,27E+00	2,04E+01	0,00E+00	1,19E+00	2,16E+01	2,72E-01	-3,08E+02	3,93E+02
PET	MJ	1,12E+03	4,07E+00	1,48E+02	1,27E+03	3,31E+00	3,91E+01	0,00E+00	1,20E+00	2,38E+01	2,84E-01	-8,20E+02	5,22E+02
SM	kg	1,22E-02	0,00E+00	0,00E+00	1,22E-02	0,00E+00	3,67E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,26E-02
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	5,12E+00	4,60E-04	-4,69E-02	5,07E+00	3,75E-04	1,52E-01	0,00E+00	1,36E-04	1,06E-02	9,20E-05	-4,35E+00	8,81E-01
Waste Categories													
HWD	kg	4,48E-04	9,56E-06	2,01E-02	2,05E-02	7,80E-06	2,42E-03	0,00E+00	2,83E-06	6,02E-02	3,46E-07	-2,96E-04	8,28E-02
NHWD	kg	2,35E+01	2,39E-01	4,18E-01	2,42E+01	1,95E-01	7,65E-01	0,00E+00	7,10E-02	7,30E-01	3,18E-01	-1,95E+01	6,76E+00
RWD	kg	2,35E-03	2,49E-05	6,12E-04	2,99E-03	2,02E-05	9,33E-05	0,00E+00	7,34E-06	9,55E-05	1,16E-06	-1,46E-03	1,74E-03
Output Flows													
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	4,53E+00	0,00E+00	4,52E-01	4,98E+00	0,00E+00	4,34E-01	0,00E+00	0,00E+00	9,48E+00	0,00E+00	0,00E+00	1,49E+01
MER	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE-E	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE-T	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; PERM = Use of renewable primary energy resources used as raw materials [MJ]; PERT = Total use of renewable primary energy resources [MJ]; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; PENRM = Use of non-renewable primary energy resources used as raw materials [MJ]; PENRT = Total use of non-renewable primary energy resources [MJ]; PET = Total Energy [MJ]; SM = Use of secondary material [kg]; RSF = Use of renewable secondary fuels [MJ]; NRSF = Use of non-renewable secondary fuels [MJ]; FW = Use of net fresh water [m3]; HWD = Hazardous waste disposed [kg]; NHWD = Non-hazardous waste disposed [kg]; RWD = Radioactive waste disposed [kg]; CRU = Components for re-use [kg]; MFR = Materials for recycling [kg]; MER = Materials for energy recovery [kg]; EE = Exported energy [MJ]

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