



This is the **submitted version** of the article:

Verónica Arcas Pilz, Verónica; Rufí Salís, Martí; Parada, Felipe; [et al.]. «Assessing the environmental behavior of alternative fertigation methods in soilless systems : the case of Phaseolus vulgaris with Struvite and Rhizobia inoculation». Science of the total environment, Vol. 770 (May 2021), art. 1447442021. DOI 10.1016/j.scitotenv.2020.144744

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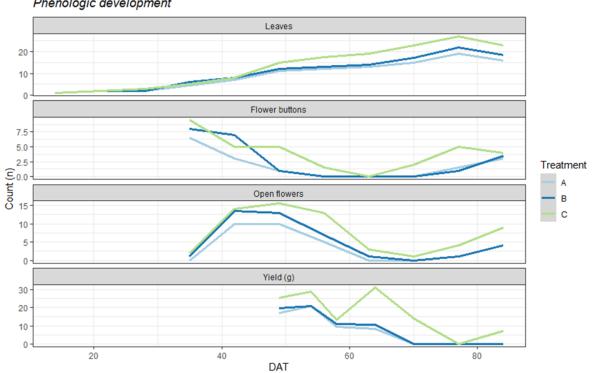
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## Supplementary Information:

## Table 1

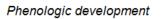
TEMPERATURE	2019	2020
AVERAGE T ºC	18.94	20.48
MINIMUM T ≌C	4.48	11.23
MAXIMUM T ºC	29.89	29.48
STANDARD DEVIATION	2.09	4.68
REALATIVE HUMIDITY	2019	2020
<i>REALATIVE HUMIDITY</i> <i>AVERAGE (RH)</i>	<b>2019</b> 38.11	<b>2020</b> 38.78
AVERAGE (RH)	38.11	38.78
AVERAGE (RH) MINIMUM (RH)	38.11 5.65	38.78 7.51

Figure 1:



## Phenologic development





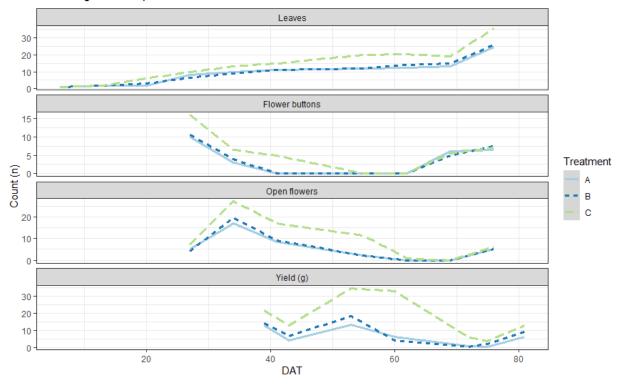


Table 2:

	SR2		
<u>Auxilary</u>		Amo	
<u>Equippment</u>	Materials/assemblies	unt	
		0.201	k
Iron Pump + PS	Cast iron {GLO}  market for   Cut-off, S	9	g
		0.023	k
•	Steel, low-alloyed {GLO}  market for   Cut-off, S	8	g
HDPE Pump +		0.011	k
PS	Polyethylene, HDPE, granulate, at plant/RER S	9	g
HDPE Digital		0.011	k
timer	Polyethylene, HDPE, granulate, at plant/RER S	8	g
Electronics		0.000	
Digital timer	Electronics, for control units {GLO}  market for   Cut-off, S	6	g
		0.036	
Dosatron	Polypropylene, granulate {GLO}  market for   Cut-off, S	6	g
D:	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.0	k
Pipe 32 mm	S	3	g
Dia e 25 mm	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.055	
Pipe 25 mm	S Debuie deblevide bulls achieve vised (CLO), we also for L Cut off	8	g
La inte	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.138	
Joints	S	6	g

l	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.187	k
Nutrient tank	off, S	1	g
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.346	-
Water Tank	off, S	2	g
Iron Flow Meter	Cast iron {GLO}  market for   Cut-off, S	0.109 3	к g
HDPE Flow	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.005	•
Meter	off, S	8	g
	Polyethylene, low density, granulate {GLO}  market for   Cut-	0.056	
Primary pipe	off, S Delvethylene, Jour density, granulate (CLO), market for L Cut	4	g
Secondary pipe	Polyethylene, low density, granulate {GLO}  market for   Cut- off, S	0.069 7	к g
secondary pipe	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.002	-
Joint	off, S	8	g
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.002	k
Joint insertion	off, S Polyethylene, high density, granulate {GLO}  market for   Cut-	8 0.002	g
Stopper	off, S	0.002	к g
stopper	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.023	-
Drip tube	S	6	g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.003	
Drip	S Debuire debleride, bulk returnspieled (CLO), menket for L Cut off	9	g
Gripping piece	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off, S	0.007 9	k g
dripping piece	5	0.006	-
Manometers	Cast iron {GLO}  market for   Cut-off, S	9	g
		0.004	k
Manometers	Bronze {GLO}  market for   Cut-off, S Glycerine {Europe without Switzerland}  esterification of rape	0.001 0.008	•
Manometers	oil   Cut-off, S	0.008	g
			U
Processes			
		0.066	
Transport	Transport, van <3.5t/RER S	33	
Transport to end of Life	Transport, van <3.5t/RER S	0.066 33	
Injetion		0.991	
moulding	Injection moulding/RER S	5	
	Metal working, average for metal product manufacturing {RER}	0.342	
Metal working	processing   Cut-off, S	8	g
<u>Energy</u>	Processes		
Water pump			k W
New Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	
Water pump			k
Leachates			W
Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	h
Waterproof			k
pump Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	W h
Fertilizers	Materials/assemblies	1.01	11
<u>1 CI LIIIZEI S</u>	ואומנכו ומוא מאשכו וושווכא		

I			k
КNO3	Potassium nitrate {GLO}  market for   Cut-off, S	0	g k
60,3% KPO4H2	Phosphate fertiliser, as P2O5 {GLO}  market for   Cut-off, S	0	g
K2SO4	Potassium sulfate, as K2O {GLO}   market for   Cut-off, S	0.93	k g k
CaNO32	Calcium nitrate {GLO}  market for   Cut-off, S	0	g k
CaCl2	Calcium chloride {RER}  market for calcium chloride   Cut-off, S	0.23	g k
MgNO32	Magnesium oxide {GLO}  market for   Cut-off, S	0 0.011	g
50,7% Hortilon	Iron sulfate {RER}  market for iron sulfate   Cut-off, S	0.011 1 0.005	g
23,6% Hortilon 4,7% Hortilon	Magnesium oxide {GLO}  market for   Cut-off, S Zinc monosulfate {RER}  market for zinc monosulfate   Cut-off, S		g k g
18,9% Hortilon	Copper oxide {GLO}  market for   Cut-off, S		g
2% Hortilon	Molybdenite {GLO}  market for   Cut-off, S	44	g k
Sequestrene	Iron sulfate {RER}  market for iron sulfate   Cut-off, S	0.022	g k
39,7% KPO4H2 MgCL2/ NaOH	Potassium fertiliser, as K2O {GLO}  market for   Cut-off, S Struvite	0 0.128	g p
Processes Fertilizer Transport	Transport, van <3.5t/RER S	0.066 58 0.000 0592	m
Emissions to Air	Ammonia	5 2.468	g
	Dinitrogen monoxide	75E- 05 0.000	g
Emissions to	Nitrogen oxides	1975 0.001	g
Water	Nitrogen	975 0.002	g
	Phosphorous	609	
<u>Greenhouse</u> <u>Structure</u>	Materials/assemblies		k
Concrete	Concrete roof tile {GLO}  market for   Cut-off, S Polyethylene, low density, granulate {GLO}  market for   Cut-	6.09	к g k
LDPE	off, S	2.24	g k
Polycarbonate	Polycarbonate {GLO}  market for   Cut-off, S	4.6	

Delevier	Glass fibre reinforced plastic, polyester resin, hand lay-up	0.004	k
Polyester	{GLO}  market for   Cut-off, S Aluminium, primary, ingot {IAI Area, Russia & RER w/o EU27 &	0.224	g k
Aluminium	EFTA}  aluminium production, primary, ingot   Cut-off, S Steel, low-alloyed {RER}  steel production, electric, low-alloyed	0.224	g k
	Cut-off, S	24.04	g
	Processes		
Transport	Transport, lorry >32t, EURO5/RER S	1.870 9	tk m
Transoceanic	Transport, freight, sea, transoceanic ship {GLO}  market for	9	tk
freight ship	Cut-off, S	3.71	
		0.011	k W
Machinery use	Energy, from diesel burned in machinery/RER Energy	5	h
			tk
End of Life	Transport, lorry 16-32t, EURO5/RER S	1.323	m
Pesticides	Materials/assemblies		k
Spintor	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
20% Potassium		0,04*	k
soap	Potassium sulfate, as K2O (GLO)   market for   Cut-off, S	0,2	g
80% Potassium	Water, deionised, from tap water, at user {Europe without Switzerland}  market for water, deionised, from tap water, at	0,04*	k
soap	user   Cut-off, S	0,8	g k
Costar	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
Wettable			k
sulphur	Sulfur {GLO}  market for   Cut-off, S	0	g k
MeemAzal	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
	Processes		
Pesticide Transport	Transport, van <3.5t/RER S	0.02	tk m
Rainwater		0.02	m
Harvesting			
<u>System</u>	Materials/assemblies		
Water tank	Glass fibre reinforced plastic, polyamide, injection moulded {GLO}  market for   Cut-off, S	3.01	k a
Water Lank		5.01	g k
Pipes	Polyethylene, HDPE, granulate, at plant/RER S	0.23	g k
Iron Pump	Cast iron {GLO}  market for   Cut-off, S	0.05	g k
Steel Pump	Steel, chromium steel 18/8 {GLO}  market for   Cut-off, S	0.01	
	Processes		
Transport GFRP	Transport, lorry 7.5-16t, EURO3/RER S	0.36	tk m
		0.50	

Transport pipes		0.02	tk
and pump	Transport, van <3.5t/RER S	0.03	m
Excavation Transport End	Excavation, hydraulic digger {GLO}  market for   Cut-off, S	0.07	m 3 tk
of Life Injection	Transport, lorry 3.5-7.5t, EURO5/RER S	0.2	-
moulding	Injection moulding/RER S Metal working, average for metal product manufacturing {RER}	3.23	g k
Metal working	processing   Cut-off, S	0.05	g
Struvite 1kg	Materials/assemblies		0
<u> </u>		0.423	k
MgO	Magnesium oxide {GLO}  market for   Cut-off, S	9	g k
рН	HCl Sodium hydroxide, without water, in 50% solution state {GLO}	0.766	g k
	market for   Cut-off, S	0.039	g k
	Tap water, at user/RER S	0.189	g
	Processes		
			k
Elictricity	Electricity, medium voltage {ES}  market for   Cut-off, S	0.523	W h tk
Transport	Transport, van <3.5t/RER S	0.003	
Substrate	Materials/assemblies		
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.40	k
HDPE Substrate	off, S	0.12	g k
Perlite	Perlite {GLO}  market for   Cut-off, S	4.39	
	Processes		
Transport	Transport Jorny 16 22t ELIDOE /DED S	2 5 4 4	tk m
Transport	Transport, lorry 16-32t, EURO5/RER S	3.544	m

## Table 3:

	SR5			
Auxilary		Amou		
<b>Equippment</b>	Materials/assemblies	nt		
		0.201 k		
Iron Pump + PS	Cast iron {GLO}  market for   Cut-off, S	9 g		
		0.023 k		
Steel Pump + PS	Steel, low-alloyed {GLO}  market for   Cut-off, S	8 g		
HDPE Pump +		0.011 k		
PS	Polyethylene, HDPE, granulate, at plant/RER S	9 g		
HDPE Digital		0.011 k		
timer	Polyethylene, HDPE, granulate, at plant/RER S	8 g		

Energy	Processes		
Metal working	{RER}  processing   Cut-off, S	8	g
	Metal working, average for metal product manufacturing	0.342	k
moulding	Injection moulding/RER S	5	g
Injetion	· · ·	0.991	
end of Life	Transport, van <3.5t/RER S		m
Transport to	. , , -	0.066	
Transport	Transport, van <3.5t/RER S	33	
	Processes	0.066	tk
Manometers	oil   Cut-off, S	7	g
Manometers	Bronze {GLO}  market for   Cut-off, S Glycerine {Europe without Switzerland}  esterification of rape	0.001 0.008	-
			k
Manometers	Cast iron {GLO}  market for   Cut-off, S	0.006 9	
Gripping piece	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off, S	0.007 9	k g
Drip	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off, S	0.003	k g
Drip tube	S	6	g
Stopper	off, S Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	2 0.023	g k
loint insertion	off, S Polyethylene, high density, granulate {GLO}  market for   Cut-	8 0.002	g k
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.002	k
Joint	Polyethylene, high density, granulate {GLO}  market for   Cut- off, S	0.002 8	-
Secondary pipe	Polyethylene, low density, granulate {GLO}  market for   Cut- off, S	0.069 7	k g
Primary pipe	Polyethylene, low density, granulate {GLO}  market for   Cut- off, S	0.056 4	k g
Meter	off, S	8	g
Iron Flow Meter HDPE Flow	Cast iron {GLO}  market for   Cut-off, S Polyethylene, high density, granulate {GLO}  market for   Cut-	3 0.005	g k
Water Tank	off, S	2 0.109	g k
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.346	k
Nutrient tank	Polyethylene, high density, granulate {GLO}  market for   Cut- off, S	0.187 1	k g
Joints	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off, S	0.138 6	k g
Pipe 25 mm	S	8	g
Pipe 32 mm	S Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	3 0.055	g k
Dosatron	Polypropylene, granulate {GLO}  market for   Cut-off, S Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	6 0.011	g k
-		6 0.036	g k
Electronics Digital timer	Electronics, for control units {GLO}  market for   Cut-off, S	0.000	

			k
Water pump	Floatricity high voltage production FC at grid/FC C	1 01	W
Water pump	Electricity, high voltage, production ES, at grid/ES S	1.01	n k
Leachates			W
Water RTG Waterproof	Electricity, high voltage, production ES, at grid/ES S	1.01	h k
pump Water			Ŵ
RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	h
<u>Fertilizers</u>	Materials/assemblies		1.
60,3% KPO4H2	Phosphate fertiliser, as P2O5 {GLO}  market for   Cut-off, S	0	k g
39,7% KPO4H2	Potassium fertiliser, as K2O {GLO}  market for   Cut-off, S	0	k g k
клоз	Potassium nitrate {GLO}  market for   Cut-off, S	0	к g k
K2SO4	Potassium sulfate, as K2O {GLO}  market for   Cut-off, S	0.93	
CaNO32	Calcium nitrate {GLO}  market for   Cut-off, S	0	r g k
CaCl2	Calcium chloride {RER}  market for calcium chloride   Cut-off, S	0.23	g k
MgNO32	Magnesium oxide {GLO}  market for   Cut-off, S	0 0.011	g
50,7% Hortilon	Iron sulfate {RER}  market for iron sulfate   Cut-off, S		g
23,6% Hortilon	Magnesium oxide {GLO}  market for   Cut-off, S	1	g
4,7% Hortilon	Zinc monosulfate {RER}  market for zinc monosulfate   Cut-off, S	0.001 03	
4,770 1101 (11011	5	0.004	-
18,9% Hortilon	Copper oxide {GLO}  market for   Cut-off, S	1	g
2% Hortilon	Molybdenite {GLO}  market for   Cut-off, S	0.000 44	k g
270 1101 (11011			ь k
Sequestrene	Iron sulfate {RER}  market for iron sulfate   Cut-off, S	0.022	-
MgCL2/ NaOH	Struvite	0.32	р
Processes			
Fertilizer		0.076	tk
Transport	Transport, van <3.5t/RER S	1885	
Emissions to Air	Ammonia	0.000 0669	
Emissions to All	Annionia	0.000	g
		0278	
	Dinitrogen monoxide	75	-
	Nitrogen oxides	0.000 223	
Emissions to		0.002	k
Water	Nitrogen	23	g

		0.003	k
	Phosphorous	5	g
<u>Greenhouse</u>			
<u>Structure</u>	Materials/assemblies		1.
Concrete	Concrete roof tile (CLO)   market for   Cut off S	۵۵	k a
Concrete	Concrete roof tile {GLO}  market for   Cut-off, S Polyethylene, low density, granulate {GLO}  market for   Cut-	6.09	g k
LDPE	off, S	2.24	
LDFL	011, 5	2.24	ъ k
Polycarbonate	Polycarbonate {GLO}  market for   Cut-off, S	4.6	
rorycarbonate	Glass fibre reinforced plastic, polyester resin, hand lay-up		k
Polyester	{GLO}  market for   Cut-off, S	0.224	
,	Aluminium, primary, ingot {IAI Area, Russia & RER w/o EU27 &		k
Aluminium	EFTA}  aluminium production, primary, ingot   Cut-off, S	0.224	g
	Steel, low-alloyed {RER}  steel production, electric, low-alloyed		k
	Cut-off, S	24.04	g
	Processes		
		1.870	tk
Transport	Transport, lorry >32t, EURO5/RER S	9	m
Transoceanic	Transport, freight, sea, transoceanic ship {GLO}  market for		tk
freight ship	Cut-off, S	3.71	m
			k
		0.011	
Machinery use	Energy, from diesel burned in machinery/RER Energy	5	h
		4 2 2 2	tk
End of Life	Transport, lorry 16-32t, EURO5/RER S	1.323	m
<u>Pesticides</u>	Materials/assemblies		
Calater	Desticide unexpectived (CLO)   member for   Cut off C	0	k ~
Spintor 20% Potassium	Pesticide, unspecified {GLO}  market for   Cut-off, S	0 0,04*	g k
soap	Potassium sulfate, as K2O {GLO}  market for   Cut-off, S	0,04 0,2	g
3000	Water, deionised, from tap water, at user {Europe without	0,2	6
80% Potassium	Switzerland}  market for water, deionised, from tap water, at	0,04*	k
soap	user   Cut-off, S	0,8	g
•			k
Costar	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
Wettable			k
sulphur	Sulfur {GLO}  market for   Cut-off, S	0	g
			k
MeemAzal	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
	Processes		
Pesticide			tk
Transport	Transport, van <3.5t/RER S	0.02	m
<u>Rainwater</u>			
Harvesting			
<u>System</u>	Materials/assemblies		
Water tank	Glass fibre reinforced plastic, polyamide, injection moulded		k
	{GLO}  market for   Cut-off, S	3.01	σ

			k
Pipes	Polyethylene, HDPE, granulate, at plant/RER S	0.23	g k
Iron Pump	Cast iron {GLO}  market for   Cut-off, S	0.05	g k
Steel Pump	Steel, chromium steel 18/8 {GLO}  market for   Cut-off, S	0.01	g
	Processes		+
Transport GFRP Transport pipes	Transport, lorry 7.5-16t, EURO3/RER S	0.36	t n t
and pump	Transport, van <3.5t/RER S	0.03	-
Excavation Transport End	Excavation, hydraulic digger {GLO}  market for   Cut-off, S	0.07	
of Life Injection	Transport, lorry 3.5-7.5t, EURO5/RER S	0.2	-
moulding	Injection moulding/RER S Metal working, average for metal product manufacturing	3.23	
Metal working	{RER}  processing   Cut-off, S	0.05	
<u>Struvite 1kg</u>	Materials/assemblies	0.423	k
MgO	Magnesium oxide {GLO}  market for   Cut-off, S	9	g
рН	HCl Sodium hydroxide, without water, in 50% solution state {GLO}	0.766	
	market for   Cut-off, S	0.039	
	Tap water, at user/RER S	0.189	
	Processes		
			k V
Elictricity	Electricity, medium voltage {ES}  market for   Cut-off, S	0.523	ł t
Transport	Transport, van <3.5t/RER S	0.003	
<u>Substrate</u>	Materials/assemblies		
HDPE Substrate	Polyethylene, high density, granulate {GLO}  market for   Cut- off, S	0.12	ł
Perlite	Perlite {GLO}  market for   Cut-off, S	4.39	k ا
	Processes		

Table 4:

SR10

<u>Auxilary</u> Equippment	Materials/assemblies	Amo unt
		0.20 k
Iron Pump + PS	Cast iron {GLO}  market for   Cut-off, S	19 g
		0.02 k
Steel Pump + PS	Steel, low-alloyed {GLO}  market for   Cut-off, S	38 g
HDPE Pump +		0.01 k
PS	Polyethylene, HDPE, granulate, at plant/RER S	19 g
HDPE Digital		0.01 k
timer	Polyethylene, HDPE, granulate, at plant/RER S	18 g
Electronics		0.00 k
Digital timer	Electronics, for control units {GLO}  market for   Cut-off, S	06 g
		0.03 k
Dosatron	Polypropylene, granulate {GLO}  market for   Cut-off, S	66 g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.01 k
Pipe 32 mm	S	13 g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.05 k
Pipe 25 mm	S	58 g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.13 k
Joints	S	86 g
Ni stationati travela	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.18 k
Nutrient tank	off, S Delyethylene, high density, granylate (CLO), market for L Cut	71 g
Water Tank	Polyethylene, high density, granulate {GLO}  market for   Cut- off, S	0.34 k
Water Tallk	01, 5	62 g 0.10 k
Iron Flow Meter	Cast iron {GLO}  market for   Cut-off, S	93 g
HDPE Flow	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00 k
Meter	off, S	58 g
	Polyethylene, low density, granulate {GLO}  market for   Cut-	0.05 k
Primary pipe	off, S	64 g
,	Polyethylene, low density, granulate {GLO}  market for   Cut-	0.06 k
Secondary pipe	off, S	97 g
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00 k
Joint	off, S	28 g
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00 k
Joint insertion	off, S	28 g
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00 k
Stopper	off, S	22 g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.02 k
Drip tube	S	36 g
<b>.</b>	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.00 k
Drip	S Debuie deblevide bulk active sized (CLO) - resolution for L Cut off	39 g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.00 k
Gripping piece	S	79 g 0.00 k
Manometers	Cast iron {GLO}  market for   Cut-off, S	0.00 k 69 g
		0.00 k
Manometers	Bronze {GLO}  market for   Cut-off, S	0.00 K 1 g
	Glycerine {Europe without Switzerland}] esterification of rape	0.00 k
Manometers	oil   Cut-off, S	87 g
		0
I		

		0.06	tk
Transport	Transport, van <3.5t/RER S	633	m
Transport to		0.06	tŀ
end of Life	Transport, van <3.5t/RER S	633	m
Injetion		0.99	k
moulding	Injection moulding/RER S		g
	Metal working, average for metal product manufacturing {RER}	0.34	_
Metal working	processing   Cut-off, S	28	
Energy	Processes	20	δ
			k
Water pump			W
New Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	h
Water pump			k
Leachates			W
Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	h
Waterproof		1.01	k
pump Water			N
RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	-
Fertilizers	Materials/assemblies		-
	·		k
KNO3	Potassium nitrate {GLO}  market for   Cut-off, S	0	g
			k
60,3% KPO4H2	Phosphate fertiliser, as P2O5 {GLO}  market for   Cut-off, S	0	g
			k
K2SO4	Potassium sulfate, as K2O {GLO}  market for   Cut-off, S	0.93	g
		0.00	k
CaNO32	Calcium nitrate {GLO}  market for   Cut-off, S	0	g
6411032		Ū	ь k
CaCl2	Calcium chloride {RER}  market for calcium chloride   Cut-off, S	0.23	g
CUCIZ		0.25	ь k
	Magnesium oxide {GLO}  market for   Cut-off, S	0	
MgNO32	Magnesium Oxide (GLO)   market for   Cut-on, 5	0	g
<b>50 7</b> 0/ 11 <b>1</b> /1		0.01	
50,7% Hortilon	Iron sulfate {RER}  market for iron sulfate   Cut-off, S	11	-
		0.00	
23,6% Hortilon	Magnesium oxide {GLO}   market for   Cut-off, S	51	-
	Zinc monosulfate {RER}  market for zinc monosulfate   Cut-off,	0.00	
4,7% Hortilon	S	103	-
		0.00	k
18,9% Hortilon	Copper oxide {GLO}  market for   Cut-off, S	41	g
		0.00	k
2% Hortilon	Molybdenite {GLO}  market for   Cut-off, S	044	g
		0.02	_
Sequestrene	Iron sulfate {RER}  market for iron sulfate   Cut-off, S	2	g
-			k
39,7% KPO4H2	Potassium fertiliser, as K2O {GLO}  market for   Cut-off, S	0	g
MgCL2/ NaOH	Struvite	0.64	-
MBCL2/ MOUT		0.04	μ
Processes			
Fertilizer		0.09	tk
rennizer			

		0.00	
		0109	ŀ
Emissions to Air	Ammonia	44	Ę
		0.00	k
	Dinitrogen monoxide	0456	g
		0.00	k
	Nitrogen oxides	3648	g
Emissions to		0.00	k
Water	Nitrogen	66	g
		0.00	k
	Phosphorous	7	g
<u>Greenhouse</u>			
<u>Structure</u>	Materials/assemblies		
			k
Concrete	Concrete roof tile {GLO}  market for   Cut-off, S	6.09	g
	Polyethylene, low density, granulate {GLO}  market for   Cut-		k
LDPE	off, S	2.24	g
			k
Polycarbonate	Polycarbonate {GLO}  market for   Cut-off, S	4.6	g
-	Glass fibre reinforced plastic, polyester resin, hand lay-up	0.22	k
Polyester	{GLO}  market for   Cut-off, S	4	g
	Aluminium, primary, ingot {IAI Area, Russia & RER w/o EU27 &	0.22	_
Aluminium	EFTA}  aluminium production, primary, ingot   Cut-off, S	4	g
	Steel, low-alloyed {RER}] steel production, electric, low-alloyed	24.0	-
	Cut-off, S	4	g
	Processes		
		1.87	
Transport	Transport, lorry >32t, EURO5/RER S	09	n
Transoceanic	Transport, freight, sea, transoceanic ship {GLO}  market for		t
freight ship	Cut-off, S	3.71	n
			k
		0.01	
Machinery use	Energy, from diesel burned in machinery/RER Energy	15	
		1.32	t
End of Life	Transport, lorry 16-32t, EURO5/RER S	3	n
<u>Pesticides</u>	Materials/assemblies		
			k
Spintor	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
20% Potassium		0,04*	k
soap	Potassium sulfate, as K2O {GLO}  market for   Cut-off, S	0,2	g
	Water, deionised, from tap water, at user {Europe without		
80% Potassium	Switzerland}  market for water, deionised, from tap water, at	0,04*	k
soap	user   Cut-off, S	0,8	g
			k
Costar	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
Wettable			k
sulphur	Sulfur {GLO}  market for   Cut-off, S	0	g
-			k
MeemAzal	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
-		-	0

Pesticide	Processes		tk
Transport	Transport, van <3.5t/RER S	0.02	-
<u>Rainwater</u>			
<u>Harvesting</u>			
<u>System</u>	Materials/assemblies		
	Glass fibre reinforced plastic, polyamide, injection moulded	2.04	k
Water tank	{GLO}  market for   Cut-off, S	3.01	g
Pipes	Polyethylene, HDPE, granulate, at plant/RER S	0.23	k a
ripes	Polyethylene, hDPE, granulate, at plant/ KEK S	0.25	g k
Iron Pump	Cast iron {GLO}  market for   Cut-off, S	0.05	g
			k
Steel Pump	Steel, chromium steel 18/8 {GLO}  market for   Cut-off, S	0.01	g
	Processes		
		0.20	tŀ
Transport GFRP	Transport, lorry 7.5-16t, EURO3/RER S	0.36	m +
Transport pipes and pump	Transport, van <3.5t/RER S	0.03	tł
and pump		0.05	n
Excavation	Excavation, hydraulic digger {GLO}  market for   Cut-off, S	0.07	
Transport End		0107	tl
of Life	Transport, lorry 3.5-7.5t, EURO5/RER S	0.2	n
Injection			k
moulding	Injection moulding/RER S	3.23	g
	Metal working, average for metal product manufacturing {RER}		k
Metal working	processing   Cut-off, S	0.05	g
<u>Struvite 1kg</u>	Materials/assemblies		
		0.42	
MgO	Magnesium oxide {GLO}  market for   Cut-off, S	39	g
nL	HCI	0.76	
рН	Sodium hydroxide, without water, in 50% solution state {GLO}	0.03	g k
	market for   Cut-off, S	9.05	g
		0.18	_
	Tap water, at user/RER S	9	g
			Ŭ
	Processes		
			k
		0.52	
Elictricity	Electricity, medium voltage {ES}  market for   Cut-off, S	3	h
		0.00	tŀ
Transport	Transport, van <3.5t/RER S	3	n
<u>Substrate</u>	Materials/assemblies		
	Polyethylene, high density, granulate {GLO}  market for   Cut-		k
HDPE Substrate	off, S	0.12	g
- III			k
Perlite	Perlite {GLO}  market for   Cut-off, S	4.39	g

	Processes	
		3.54 tk
Transport	Transport, lorry 16-32t, EURO5/RER S	4 m

Table 5:

	SR20		
Auxilary		Amo	
<u>Equippment</u>	Materials/assemblies	unt	
		0.20	k
Iron Pump + PS	Cast iron {GLO}  market for   Cut-off, S	19	-
		0.02	
Steel Pump + PS	Steel, low-alloyed {GLO}  market for   Cut-off, S	38	-
HDPE Pump +		0.01	
PS	Polyethylene, HDPE, granulate, at plant/RER S	19	•
HDPE Digital	Delvethulene UDDE granulate at plant/DED C	0.01	
timer Electronics	Polyethylene, HDPE, granulate, at plant/RER S	18 0.00	-
Digital timer	Electronics, for control units {GLO}  market for   Cut-off, S	0.00	
		0.03	-
Dosatron	Polypropylene, granulate {GLO}  market for   Cut-off, S	66	
Desation	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.01	-
Pipe 32 mm	S	13	
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.05	•
Pipe 25 mm	S	58	
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.13	-
Joints	S	86	g
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.18	k
Nutrient tank	off, S	71	g
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.34	k
Water Tank	off, S	62	-
		0.10	
	Cast iron {GLO}  market for   Cut-off, S	93	-
HDPE Flow	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00	
Meter	off, S	58	-
	Polyethylene, low density, granulate {GLO}  market for   Cut-	0.05	
Primary pipe	off, S Polyethylene, low density, granulate {GLO}  market for   Cut-	64 0.06	-
Secondary pipe	off, S	0.00 97	
Secondary pipe	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00	g k
Joint	off, S	28	
501110	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00	-
Joint insertion	off, S	28	
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00	-
Stopper	off, S	22	
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.02	-
Drip tube	S	36	g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.00	-
Drip	S	39	g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.00	k
Gripping piece	S	79	g

		0.00	
Manager	Cast iron (CLO)   market for   Cut off C	0.00	
Manometers	Cast iron {GLO}  market for   Cut-off, S	69	g
Manometers	Bronze (GLO)   market for   Cut off S	0.00	
wanometers	Bronze {GLO}  market for   Cut-off, S		g k
Manamatara	Glycerine {Europe without Switzerland}  esterification of rape	0.00	
Manometers	oil   Cut-off, S	87	g
	Processes		
_		0.06	
Transport	Transport, van <3.5t/RER S	633	
Transport to		0.06	
end of Life	Transport, van <3.5t/RER S	633	
Injetion		0.99	k
moulding	Injection moulding/RER S		g
	Metal working, average for metal product manufacturing {RER}	0.34	k
Metal working	processing   Cut-off, S	28	g
<u>Energy</u>	Processes		
			k
Water pump			W
New Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	h
Water pump			k
Leachates			W
Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	h
Waterproof			k
, pump Water			w
RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	h
<u>Fertilizers</u>	Materials/assemblies		
			k
60,3% KPO4H2	Phosphate fertiliser, as P2O5 {GLO}  market for   Cut-off, S	0	g
			k
39,7% KPO4H2	Potassium fertiliser, as K2O {GLO}  market for   Cut-off, S	0	g
,		-	k
КNO3	Potassium nitrate {GLO}  market for   Cut-off, S	0	g
		-	
			k
K2SO4	Potassium sulfate, as K2O {GLO}   market for   Cut-off. S	0.93	k g
K2SO4	Potassium sulfate, as K2O {GLO}  market for   Cut-off, S	0.93	k g k
		_	g k
K2SO4 CaNO32	Potassium sulfate, as K2O {GLO}  market for   Cut-off, S Calcium nitrate {GLO}  market for   Cut-off, S	0.93 0	g k g
CaNO32	Calcium nitrate {GLO}  market for   Cut-off, S	0	g k g k
		_	g k g k g
CaNO32 CaCl2	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S	0 0.23	g k g k g k
CaNO32	Calcium nitrate {GLO}  market for   Cut-off, S	0 0.23 0	g k g k g k g k g
CaNO32 CaCl2 MgNO32	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S	0 0.23 0 0.01	g k g k g k g k g k
CaNO32 CaCl2	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S	0 0.23 0 0.01 11	g k g k g k g k g
CaNO32 CaCl2 MgNO32 50,7% Hortilon	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Iron sulfate {RER}  market for iron sulfate   Cut-off, S	0 0.23 0 0.01 11 0.00	g k g k g k g k
CaNO32 CaCl2 MgNO32	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Iron sulfate {RER}  market for iron sulfate   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S	0 0.23 0 0.01 11 0.00 51	g k g k g k g k g k g
CaNO32 CaCl2 MgNO32 50,7% Hortilon 23,6% Hortilon	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Iron sulfate {RER}  market for iron sulfate   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Zinc monosulfate {RER}  market for zinc monosulfate   Cut-off,	0 0.23 0 0.01 11 0.00 51 0.00	g k g k g k g k g k
CaNO32 CaCl2 MgNO32 50,7% Hortilon	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Iron sulfate {RER}  market for iron sulfate   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S	0 0.23 0 0.01 11 0.00 51 0.00 103	窗 k g k g k g k g k g k g
CaNO32 CaCl2 MgNO32 50,7% Hortilon 23,6% Hortilon 4,7% Hortilon	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Iron sulfate {RER}  market for iron sulfate   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Zinc monosulfate {RER}  market for zinc monosulfate   Cut-off, S	0 0.23 0 0.01 11 0.00 51 0.00 103 0.00	窗 k g k g k g k g k g k
CaNO32 CaCl2 MgNO32 50,7% Hortilon 23,6% Hortilon	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Iron sulfate {RER}  market for iron sulfate   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Zinc monosulfate {RER}  market for zinc monosulfate   Cut-off,	0 0.23 0 0.01 11 0.00 51 0.00 103 0.00 41	g k g k g k g k g k g k g
CaNO32 CaCl2 MgNO32 50,7% Hortilon 23,6% Hortilon 4,7% Hortilon	Calcium nitrate {GLO}  market for   Cut-off, S Calcium chloride {RER}  market for calcium chloride   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Iron sulfate {RER}  market for iron sulfate   Cut-off, S Magnesium oxide {GLO}  market for   Cut-off, S Zinc monosulfate {RER}  market for zinc monosulfate   Cut-off, S	0 0.23 0 0.01 11 0.00 51 0.00 103 0.00	ぬ な ぬ よ ぬ よ ぬ よ ぬ よ ぬ よ ぬ よ

		0.02	k
Sequestrene	Iron sulfate {RER}  market for iron sulfate   Cut-off, S	2	g
MgCL2/ NaOH	Struvite	1.28	р
Processes			
Fertilizer		0.12	tk
Transport	Transport, van <3.5t/RER S	415	m
		0.00	
		0218	k
Emissions to Air	Ammonia	88	-
		0.00	
	Dinitrogen monoxide	0912	-
		0.00	
	Nitrogen oxides	7296	-
Emissions to		0.01	
Water	Nitrogen	32	-
	Phase days and	0.01	
<u> </u>	Phosphorous	4	g
<u>Greenhouse</u>			
<u>Structure</u>	Materials/assemblies		т.
Concrete	Concrete reaf tile (CLO)   market for   Cut off S	6.00	k a
Concrete	Concrete roof tile {GLO}  market for   Cut-off, S Polyethylene, low density, granulate {GLO}  market for   Cut-	6.09	g k
LDPE	off, S	2.24	
LDFE	01, 5	2.24	g k
Polycarbonate	Polycarbonate {GLO}  market for   Cut-off, S	4.6	
rorycarbonate	Glass fibre reinforced plastic, polyester resin, hand lay-up	0.22	-
Polyester	{GLO}  market for   Cut-off, S	4	g
l'oryester	Aluminium, primary, ingot {IAI Area, Russia & RER w/o EU27 &	0.22	-
Aluminium	EFTA}  aluminium production, primary, ingot   Cut-off, S	4	g
	Steel, low-alloyed {RER} steel production, electric, low-alloyed	24.0	-
	Cut-off, S		g
	Processes		
	11000300		<b>н</b> .
		1 27	тк
Transport	Transport, lorry >32t, EURO5/RFR S	1.87 09	
Transport Transoceanic	Transport, lorry >32t, EURO5/RER S Transport, freight, sea, transoceanic ship {GLO}  market for	1.87 09	m
Transoceanic	Transport, freight, sea, transoceanic ship {GLO}  market for	09	m tk
•	• • • • • •		m tk
Transoceanic	Transport, freight, sea, transoceanic ship {GLO}  market for	09	m tk m k
Transoceanic	Transport, freight, sea, transoceanic ship {GLO}  market for	09 3.71	m tk m k W
Transoceanic freight ship	Transport, freight, sea, transoceanic ship {GLO}  market for   Cut-off, S	09 3.71 0.01	m tk m k W h
Transoceanic freight ship	Transport, freight, sea, transoceanic ship {GLO}  market for   Cut-off, S	09 3.71 0.01 15 1.32	m tk m k W h
Transoceanic freight ship Machinery use	Transport, freight, sea, transoceanic ship {GLO}  market for   Cut-off, S Energy, from diesel burned in machinery/RER Energy	09 3.71 0.01 15 1.32	m tk m k W h tk
Transoceanic freight ship Machinery use End of Life	Transport, freight, sea, transoceanic ship {GLO}  market for   Cut-off, S Energy, from diesel burned in machinery/RER Energy Transport, lorry 16-32t, EURO5/RER S	09 3.71 0.01 15 1.32	m tk m k W h tk
Transoceanic freight ship Machinery use End of Life	Transport, freight, sea, transoceanic ship {GLO}  market for   Cut-off, S Energy, from diesel burned in machinery/RER Energy Transport, lorry 16-32t, EURO5/RER S	09 3.71 0.01 15 1.32	m tk m k W h tk m
Transoceanic freight ship Machinery use End of Life Pesticides	Transport, freight, sea, transoceanic ship {GLO}  market for   Cut-off, S Energy, from diesel burned in machinery/RER Energy Transport, lorry 16-32t, EURO5/RER S Materials/assemblies	09 3.71 0.01 15 1.32 3	m tk m k b tk m k
Transoceanic freight ship Machinery use End of Life <u>Pesticides</u> Spintor	Transport, freight, sea, transoceanic ship {GLO}  market for   Cut-off, S Energy, from diesel burned in machinery/RER Energy Transport, lorry 16-32t, EURO5/RER S Materials/assemblies Pesticide, unspecified {GLO}  market for   Cut-off, S Potassium sulfate, as K2O {GLO}  market for   Cut-off, S	09 3.71 0.01 15 1.32 3	m tk m k W h tk g
Transoceanic freight ship Machinery use End of Life Pesticides Spintor 20% Potassium	Transport, freight, sea, transoceanic ship {GLO}  market for   Cut-off, S Energy, from diesel burned in machinery/RER Energy Transport, lorry 16-32t, EURO5/RER S Materials/assemblies Pesticide, unspecified {GLO}  market for   Cut-off, S	09 3.71 0.01 15 1.32 3 0 0,04*	mtkmkWhtkmkgkg

Costar	Pesticide, unspecified {GLO}  market for   Cut-off, S	(
Wettable		
sulphur	Sulfur {GLO}  market for   Cut-off, S	
MeemAzal	Pesticide, unspecified {GLO}  market for   Cut-off, S	(
	Processes	
Pesticide Transport	Transport, van <3.5t/RER S	0.02
Rainwater		0.07
Harvesting		
System	Materials/assemblies	
-	Glass fibre reinforced plastic, polyamide, injection moulded	
Water tank	{GLO}  market for   Cut-off, S	3.0
Dinoc	Debutbulene UDDE granulate at alert/DED C	0.07
Pipes	Polyethylene, HDPE, granulate, at plant/RER S	0.23
Iron Pump	Cast iron {GLO}  market for   Cut-off, S	0.0
		0.0
Steel Pump	Steel, chromium steel 18/8 {GLO}  market for   Cut-off, S	0.0
	Processes	
Transport GFRP	Transport, lorry 7.5-16t, EURO3/RER S	0.30
Transport pipes		0.5
and pump	Transport, van <3.5t/RER S	0.03
Excavation	Excavation, hydraulic digger {GLO}  market for   Cut-off, S	0.0
Transport End		_
of Life	Transport, lorry 3.5-7.5t, EURO5/RER S	0.2
Injection moulding	Injection moulding/RER S	3.2
mouluing	Metal working, average for metal product manufacturing {RER}	5.2
Metal working	processing   Cut-off, S	0.0
Struvite 1kg	Materials/assemblies	0.0
		0.4
MgO	Magnesium oxide {GLO}  market for   Cut-off, S	39
		0.7
рН	HCI	
	Sodium hydroxide, without water, in 50% solution state {GLO}	0.03
	market for   Cut-off, S	
	Top water, at wear (DED C	0.1
	Tap water, at user/RER S	
	Processes	
		0.5
Elictricity	Electricity, medium voltage {ES}  market for   Cut-off, S	0.5
		0.0
	Transport, van <3.5t/RER S	0.0

<u>Substrate</u>	Materials/assemblies		
HDPE Substrate	Polyethylene, high density, granulate {GLO}  market for   Cut- off, S	0.12	k g k
Perlite	Perlite {GLO}  market for   Cut-off, S	4.39	
	Processes	3.54	tk
Transport	Transport, lorry 16-32t, EURO5/RER S	4	m

Table 6:

	Control	
		Am
<u>Auxilary</u>		oun
<u>Equippment</u>	Materials/assemblies	t
		0.20 k
Iron Pump + PS	Cast iron {GLO}  market for   Cut-off, S	19 g
		0.02 k
Steel Pump + PS	Steel, low-alloyed {GLO}  market for   Cut-off, S	38 g
HDPE Pump +		0.01 k
PS	Polyethylene, HDPE, granulate, at plant/RER S	19 g
HDPE Digital		0.01 k
timer	Polyethylene, HDPE, granulate, at plant/RER S	18 g
Electronics		0.00 k
Digital timer	Electronics, for control units {GLO}  market for   Cut-off, S	06 g
-		0.03 k
Dosatron	Polypropylene, granulate {GLO}  market for   Cut-off, S	66 g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.01 k
Pipe 32 mm	S	13 g
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.05 k
Pipe 25 mm	S S	58 g
1	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.13 k
Joints	S	86 g
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.18 k
Nutrient tank	off, S	71 g
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.34 k
Water Tank	off, S	62 g
	- , -	0.10 k
Iron Flow Meter	Cast iron {GLO}  market for   Cut-off, S	93 g
HDPE Flow	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00 k
Meter	off, S	58 g
	Polyethylene, low density, granulate {GLO}  market for   Cut-off,	0.05 k
Primary pipe	S	64 g
, p.b.c	Polyethylene, low density, granulate {GLO}  market for   Cut-off,	0.06 k
Secondary pipe	S	97 g
secondary pipe	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00 k
Joint	off, S	28 g
Joint	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.00 k
Joint insertion	off, S	28 g
	01, 5	20 g

Stopper	Polyethylene, high density, granulate {GLO}  market for   Cut- off, S	0.00 22	
	Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	0.02	k
Drip tube	S Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	36 0.00	-
Drip	S Polyvinylchloride, bulk polymerised {GLO}  market for   Cut-off,	39 0.00	g k
Gripping piece	S	79	g
Manometers	Cast iron {GLO}  market for   Cut-off, S	0.00 69	
Manometers	Bronze {GLO}  market for   Cut-off, S	0.00 1	k g
Manometers	Glycerine {Europe without Switzerland}  esterification of rape oil   Cut-off, S	0.00 87	-
Wanometers		07	б
Processes		0.06	tk
Transport	Transport, van <3.5t/RER S	633	
Transport to		0.06	
end of Life	Transport, van <3.5t/RER S	633	m
Injetion		0.99	k
moulding	Injection moulding/RER S	15	g
	Metal working, average for metal product manufacturing {RER}	0.34	-
Metal working	processing   Cut-off, S	28	g
Energy	Processes		0
			k
Water pump			W
New Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	h
Water pump			k
Leachates			W
Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	
	Electricity, high voltage, production ES, at grid/ES S	1.01	
Waterproof			k
pump Water RTG	Electricity, high voltage, production ES, at grid/ES S	1.01	W
		1.01	
<u>Fertilizers</u>	Materials/assemblies	0.22	k
	Phosphate fertiliser, as P2O5 {GLO}  market for   Cut-off, S		
60,3% KPO4H2		1	g k
39,7% KPO4H2	Potassium fertiliser, as K2O {GLO}  market for   Cut-off, S	0.14 5	к g
КNO3	Potassium nitrate {GLO}  market for   Cut-off, S	0.21	k σ
			в k
K2SO4	Potassium sulfate, as K2O {GLO}  market for   Cut-off, S	0.59	g k
CaNO32	Calcium nitrate {GLO}  market for   Cut-off, S	0.74	g k
CaCl2	Calcium chloride {RER}  market for calcium chloride   Cut-off, S	0.23	k g
MgNO32	Magnesium oxide {GLO}  market for   Cut-off, S	0.38 2	k g
-		0.01	
		0.01	к

		0.00	k
23,6% Hortilon	Magnesium oxide {GLO}  market for   Cut-off, S	5 0.00	g
4,7% Hortilon	Zinc monosulfate {RER}  market for zinc monosulfate   Cut-off, S	0.00 1 0.00	g
18,9% Hortilon	Copper oxide {GLO}  market for   Cut-off, S	0.00 4 0.00	g
2% Hortilon	Molybdenite {GLO}  market for   Cut-off, S	0.00 044 0.02	g
Sequestrene	Iron sulfate {RER}  market for iron sulfate   Cut-off, S		g
Processes			
		3.05	
Fertilizer Transport	Transport, van <3.5t/RER S	357 2	tk m
Transport		0.06	
Emissions to Air	Ammonia	86	-
	Dinitrogon monovido	0.02	
	Dinitrogen monoxide	859 0.00	-
	Nitrogen oxides	287	
Emissions to		0.22	
Water	Nitrogen	9 0.08	-
	Phosphorous		g
Greenhouse	· · · ·		
<u>Structure</u>	Materials/assemblies		
Concrete	Concrete roof tile {GLO}  market for   Cut-off, S	6.09	k g
	Polyethylene, low density, granulate {GLO}  market for   Cut-off,	0.05	k
LDPE	S	2.24	g
Dalvasukausta	Deliver the sector (CLO) I member for a Cut off C	4.0	k
Polycarbonate	Polycarbonate {GLO}  market for   Cut-off, S Glass fibre reinforced plastic, polyester resin, hand lay-up {GLO}	4.6 0.22	•
Polyester	market for   Cut-off, S	4	g
	Aluminium, primary, ingot {IAI Area, Russia & RER w/o EU27 &	0.22	
Aluminium	EFTA}  aluminium production, primary, ingot   Cut-off, S	4	•
	Steel, low-alloyed {RER}  steel production, electric, low-alloyed   Cut-off, S	24.0 4	
		•	Б
	Processes		
_		1.87	
Transport	Transport, lorry >32t, EURO5/RER S	09	
Transoceanic freight ship	Transport, freight, sea, transoceanic ship {GLO}  market for   Cut-off, S	3.71	tk m
		3.7 I	k
		0.01	W
Machinery use	Energy, from diesel burned in machinery/RER Energy	15	
End of Life	Transport, lorry 16-32t, EURO5/RER S	1.32 3	
	παπορυπ, πυπη τυ-ολι, ευκυο/κεκ ο	3	m

<u>Pesticides</u>	Materials/assemblies		k
Spintor	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
20% Potassium		0,04	
soap	Potassium sulfate, as K2O {GLO}  market for   Cut-off, S Water, deionised, from tap water, at user {Europe without	*0,2	g
80% Potassium	Switzerland}  market for water, deionised, from tap water, at	0,04	k
soap	user   Cut-off, S	*0,8	g
			k
Costar	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
Wettable			k
sulphur	Sulfur {GLO}  market for   Cut-off, S	0	g k
MeemAzal	Pesticide, unspecified {GLO}  market for   Cut-off, S	0	g
	Processes		
Pesticide			tk
Transport	Transport, van <3.5t/RER S	0.02	m
<u>Rainwater</u>			
<u>Harvesting</u>			
<u>System</u>	Materials/assemblies		
	Glass fibre reinforced plastic, polyamide, injection moulded	2.04	k
Water tank	{GLO}  market for   Cut-off, S	3.01	g k
Pipes	Polyethylene, HDPE, granulate, at plant/RER S	0.23	g
			k
Iron Pump	Cast iron {GLO}  market for   Cut-off, S	0.05	g k
Steel Pump	Steel, chromium steel 18/8 {GLO}  market for   Cut-off, S	0.01	g
	Processes		41.
Transport GFRP	Transport, lorry 7.5-16t, EURO3/RER S	0.36	tk m
Transport pipes			tk
and pump	Transport, van <3.5t/RER S	0.03	m
			m
Excavation	Excavation, hydraulic digger {GLO}  market for   Cut-off, S	0.07	3
Transport End			tk
of Life	Transport, lorry 3.5-7.5t, EURO5/RER S	0.2	
Injection		_	k
moulding	Injection moulding/RER S	3.23	g
	Metal working, average for metal product manufacturing {RER}	0.05	k
Metal working	processing   Cut-off, S	0.05	g
<u>Substrate</u>	Materials/assemblies		,
	Polyethylene, high density, granulate {GLO}  market for   Cut-	0.42	k ~
HDPE Substrate	off, S	0.12	g
Perlite	Perlite {GLO}  market for   Cut-off, S	4.39	k g
			0



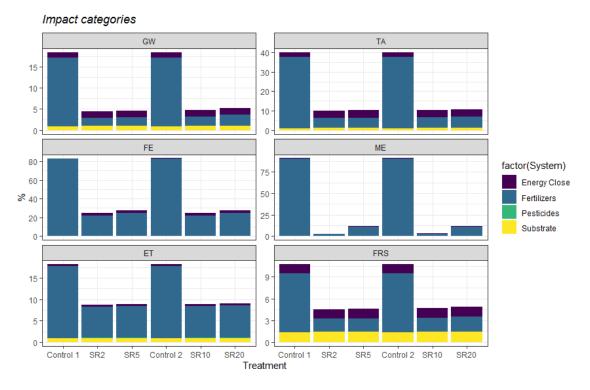


Figure 3: Environmental performance of the operation System in % per IC.