Table S1. Total (inputs and outputs) background processes requirements for current scenario of oysters farming (amount cut-off 0.1)

Process	Amount	Unit
drying, natural gas - NO	64.24591	l
natural gas, at long-distance pipeline - RER	58.61387	l
natural gas, at production onshore - RU	33.19085	l
natural gas, production RU, at long-distance pipeline - RER	28.33435	l
natural gas, at production onshore - DZ	22.09499	l
natural gas, production NL, at long-distance pipeline - RER	20.88607	l
natural gas, production DZ, at long-distance pipeline - RER	16.07970	l
natural gas, at production offshore - NO	15.04806	l
natural gas, at production onshore - NL	14.95905	l
natural gas, production NO, at long-distance pipeline - RER	14.16923	l
Oyster farming: current scenario - IT	12.00000	Item(s)
Oyster seeds purchased from France	12.00000	Item(s)
Fattening in open sea	12.00000	Item(s)
Pre-fattening in open sea	12.00000	Item(s)
sweetening, natural gas - DE	9.96718	l
heavy fuel oil, burned in industrial furnace 1MW, non-modulating - RER	7.14766	MJ
natural gas, liquefied, at freight ship - DZ	6.75348	l
natural gas, production DZ, at evaporation plant - RER	6.75348	l
natural gas, liquefied, at liquefaction plant - DZ	6.75348	l
natural gas, at production onshore - DE	6.65803	l
natural gas, at production offshore - NL	6.23339	l
natural gas, production DE, at long-distance pipeline - RER	6.20688	l
hard coal coke, at plant - RER	4.20086	MJ
transport, transoceanic freight ship - OCE	3.27204	t*km
operation, transoceanic freight ship - OCE	3.27204	t*km
electricity, production mix UCTE - UCTE	2.74262	MJ
electricity, high voltage, production UCTE, at grid - UCTE	2.69696	MJ
electricity, medium voltage, production UCTE, at grid - UCTE	2.43645	MJ
natural gas, at production offshore - GB	2.38222	l
natural gas, production GB, at long-distance pipeline - RER	2.38181	l
natural gas, high pressure, at consumer - RER	2.12959	MJ
water, decarbonised, at plant - RER	1.65573	kg
wood chips, from industry, hardwood, burned in furnace 50kW - CH	1.62213	MJ
sweet gas, burned in gas turbine, production - NO	1.59406	l
disposal, spoil from lignite mining, in surface landfill - GLO	1.58197	kg
transport, transoceanic tanker - OCE	1.46801	t*km
operation, transoceanic tanker - OCE	1.46801	t*km
disposal, spoil from coal mining, in surface landfill - GLO	1.43620	kg
natural gas, burned in industrial furnace >100kW - RER	1.20934	MJ

iron ore, 46% Fe, at mine - GLO	1.04397	kg
Wooden cassettes	1.00000	Item(s)
biogas, production mix, at storage - CH	0.91442	l
hardwood, standing, under bark, in forest - RER	0.87881	l
hardwood, stand establishment / tending / site development, under bark - RER	0.87881	l
operation, freight train - RER	0.78448	t*km
transport, freight, rail - RER	0.78448	t*km
treatment, pig iron production effluent, to wastewater treatment, class 3 - CH	0.67173	l
natural gas, vented - GLO	0.66159	l
iron ore, 65% Fe, at beneficiation - GLO	0.62958	kg
electricity, production mix DE - DE	0.62819	MJ
electricity, production mix FR - FR	0.59593	MJ
hot rolling, steel - RER	0.56636	kg
reinforcing steel, at plant - RER	0.55631	kg
round wood, hardwood, under bark, u=70%, at forest road - RER	0.54620	l
disposal, sulfidic tailings, off-site - GLO	0.50806	kg
electricity, nuclear, at power plant pressure water reactor - FR	0.50722	MJ
lignite, burned in power plant - DE	0.49165	MJ
biogas, from sewage sludge, at storage - CH	0.47550	l
transport, crude oil pipeline, onshore - RER	0.46611	t*km
biogas, from biowaste, at storage - CH	0.43892	l
hard coal, burned in power plant - DE	0.41017	MJ
sinter, iron, at plant - GLO	0.38993	kg
natural gas, high pressure, at consumer - IT	0.37947	MJ
natural gas, burned in power plant - IT	0.37947	MJ
steel, converter, unalloyed, at plant - RER	0.37907	kg
natural gas, at long-distance pipeline - CH	0.37246	l
pig iron, at plant - GLO	0.37136	kg
treatment, plywood production effluent, to wastewater treatment, class 3 - CH	0.36803	l
refinery gas, burned in furnace - RER	0.35905	MJ
natural gas, sweet, burned in production flare - GLO	0.34431	l
electricity, hydropower, at run-of-river power plant - RER	0.33751	MJ
iron scrap, at plant - RER	0.32731	kg
electricity, production mix IT - IT	0.31406	MJ
excavation, skid-steer loader - RER	0.30262	l
electricity, production mix ES - ES	0.29172	MJ
hard coal, burned in industrial furnace 1-10MW - RER	0.28570	MJ
operation, passenger car - RER	0.27858	m
hard coal mix, at regional storage - UCTE	0.27340	kg
hard coal, burned in power plant - PL	0.27233	MJ
electricity, nuclear, at power plant - UCTE	0.20957	MJ

diesel, burned in building machine - GLO	0.20881	MJ
steel, electric, un- and low-alloyed, at plant - RER	0.20682	kg
lignite, burned in power plant - PL	0.20568	MJ
heavy fuel oil, at refinery - RER	0.20278	kg
hard coal, burned in power plant - ES	0.20266	MJ
transport, lorry >16t, fleet average - RER	0.20228	t*km
plywood, indoor use, at plant - RER	0.20000	l
heavy fuel oil, at regional storage - RER	0.19976	kg
gravel, crushed, at mine - CH	0.19303	kg
electricity, nuclear, at power plant pressure water reactor - UCTE	0.18862	MJ
limestone, at mine - CH	0.18740	kg
tap water, at user - RER	0.17922	kg
electricity, nuclear, at power plant - DE	0.17645	MJ
natural gas, burned in power plant - NL	0.17515	MJ
natural gas, high pressure, at consumer - NL	0.17515	MJ
lignite, burned in power plant - CZ	0.17126	MJ
electricity, lignite, at power plant - DE	0.16238	MJ
natural gas, burned in gas turbine, for compressor station - RU	0.16049	MJ
natural gas, sweet, burned in production flare - GLO	0.15988	MJ
electricity, production mix PL - PL	0.15264	MJ
natural gas, high pressure, at consumer - DE	0.15207	MJ
natural gas, burned in power plant - DE	0.15207	MJ
pellets, iron, at plant - GLO	0.14854	kg
electricity, hard coal, at power plant - DE	0.14766	MJ
process-specific burdens, residual material landfill - CH	0.14432	kg
natural gas, burned in industrial furnace low-NOx >100kW - RER	0.14380	MJ
electricity, natural gas, at power plant - IT	0.14230	MJ
lignite, at mine - RER	0.14214	kg
transport, natural gas, pipeline, long distance - RU	0.13600	t*km
hard coal, at mine - EEU	0.13494	kg
hard coal, at regional storage - EEU	0.13494	kg
heavy fuel oil, burned in power plant - IT	0.13389	MJ
hard coal, burned in power plant - IT	0.12750	MJ
electricity, nuclear, at power plant pressure water reactor - DE	0.12528	MJ
natural gas, high pressure, at consumer - ES	0.12430	MJ
natural gas, burned in power plant - ES	0.12430	MJ
heavy fuel oil, burned in refinery furnace - RER	0.12323	MJ
gravel, round, at mine - CH	0.11042	kg
disposal, tailings from hard coal milling, in impoundment - GLO	0.10590	kg
electricity, production mix NL - NL	0.10463	MJ
discharge, produced water, onshore - GLO	0.10403	kg

natural gas, burned in power plant - CENTREL	0.10285	MJ
lignite, burned in power plant - GR	0.10154	MJ

Table S2. Total (inputs and outputs) background processes requirements for alternative scenario of oysters farming (amount cut-off 0.1)

Process	Amount	Unit
drying, natural gas - NO	64.27725	l
natural gas, at long-distance pipeline - RER	58.75135	l
natural gas, at production onshore - RU	33.19453	l
natural gas, production RU, at long-distance pipeline - RER	28.33750	l
natural gas, at production onshore - DZ	22.12065	l
natural gas, production NL, at long-distance pipeline - RER	20.88531	l
natural gas, production DZ, at long-distance pipeline - RER	16.10234	l
natural gas, at production offshore - NO	15.05142	l
natural gas, at production onshore - NL	14.95850	l
natural gas, production NO, at long-distance pipeline - RER	14.17230	l
Oyster farming: alternative scenario	12.00000	Item(s)
Oyster seeds in situ	12.00000	Item(s)
Fattening in open sea-seed in situ	12.00000	Item(s)
Pre-fattening in open sea-seed in situ	12.00000	Item(s)
sweetening, natural gas - DE	9.96567	l
heavy fuel oil, burned in industrial furnace 1MW, non-modulating - RER	7.14767	MJ
natural gas, liquefied, at liquefaction plant - DZ	6.76298	l
natural gas, liquefied, at freight ship - DZ	6.76298	l
natural gas, production DZ, at evaporation plant - RER	6.76298	l
natural gas, at production onshore - DE	6.65353	l
natural gas, at production offshore - NL	6.23318	l
natural gas, production DE, at long-distance pipeline - RER	6.20243	l
hard coal coke, at plant - RER	4.20086	MJ
operation, transoceanic freight ship - OCE	3.27358	t*km
transport, transoceanic freight ship - OCE	3.27358	t*km
electricity, production mix UCTE - UCTE	2.74523	MJ
electricity, high voltage, production UCTE, at grid - UCTE	2.69977	MJ
electricity, medium voltage, production UCTE, at grid - UCTE	2.43916	MJ
natural gas, at production offshore - GB	2.38060	l
natural gas, production GB, at long-distance pipeline - RER	2.38019	l
natural gas, high pressure, at consumer - RER	2.13467	MJ
water, decarbonised, at plant - RER	1.64719	kg
wood chips, from industry, hardwood, burned in furnace 50kW - CH	1.62213	MJ
sweet gas, burned in gas turbine, production - NO	1.59365	l
disposal, spoil from lignite mining, in surface landfill - GLO	1.58374	kg

operation, transoceanic tanker - OCE	1.46615	t*km
transport, transoceanic tanker - OCE	1.46615	t*km
disposal, spoil from coal mining, in surface landfill - GLO	1.43665	kg
natural gas, burned in industrial furnace >100kW - RER	1.20961	MJ
iron ore, 46% Fe, at mine - GLO	1.04392	kg
Wooden cassettes	1.00000	Item(s)
biogas, production mix, at storage - CH	0.91512	l
hardwood, standing, under bark, in forest - RER	0.87882	l
hardwood, stand establishment / tending / site development, under bark - RER	0.87882	l
operation, freight train - RER	0.78462	t*km
transport, freight, rail - RER	0.78462	t*km
treatment, pig iron production effluent, to wastewater treatment, class 3 - CH	0.67170	l
natural gas, vented - GLO	0.65930	l
iron ore, 65% Fe, at beneficiation - GLO	0.62955	kg
electricity, production mix DE - DE	0.62878	MJ
electricity, production mix FR - FR	0.59650	MJ
hot rolling, steel - RER	0.56635	kg
reinforcing steel, at plant - RER	0.55628	kg
round wood, hardwood, under bark, u=70%, at forest road - RER	0.54620	l
disposal, sulfidic tailings, off-site - GLO	0.50921	kg
electricity, nuclear, at power plant pressure water reactor - FR	0.50754	MJ
lignite, burned in power plant - DE	0.49223	MJ
biogas, from sewage sludge, at storage - CH	0.47586	l
transport, crude oil pipeline, onshore - RER	0.46559	t*km
biogas, from biowaste, at storage - CH	0.43926	l
hard coal, burned in power plant - DE	0.41086	MJ
sinter, iron, at plant - GLO	0.38991	kg
natural gas, high pressure, at consumer - IT	0.37983	MJ
natural gas, burned in power plant - IT	0.37983	MJ
steel, converter, unalloyed, at plant - RER	0.37905	kg
pig iron, at plant - GLO	0.37134	kg
treatment, plywood production effluent, to wastewater treatment, class 3 - CH	0.36803	l
refinery gas, burned in furnace - RER	0.35859	MJ
natural gas, sweet, burned in production flare - GLO	0.34423	l
electricity, hydropower, at run-of-river power plant - RER	0.33980	MJ
iron scrap, at plant - RER	0.32730	kg
electricity, production mix IT - IT	0.31436	MJ
excavation, skid-steer loader - RER	0.29964	l
electricity, production mix ES - ES	0.29200	MJ
hard coal, burned in industrial furnace 1-10MW - RER	0.28583	MJ
operation, passenger car - RER	0.27831	m

hard coal mix, at regional storage - UCTE	0.27340	kg
hard coal, burned in power plant - PL	0.27259	MJ
natural gas, at long-distance pipeline - CH	0.22965	l
electricity, nuclear, at power plant - UCTE	0.20996	MJ
diesel, burned in building machine - GLO	0.20838	MJ
steel, electric, un- and low-alloyed, at plant - RER	0.20681	kg
lignite, burned in power plant - PL	0.20588	MJ
hard coal, burned in power plant - ES	0.20296	MJ
heavy fuel oil, at refinery - RER	0.20279	kg
transport, lorry >16t, fleet average - RER	0.20243	t*km
plywood, indoor use, at plant - RER	0.20000	l
heavy fuel oil, at regional storage - RER	0.19978	kg
gravel, crushed, at mine - CH	0.19174	kg
electricity, nuclear, at power plant pressure water reactor - UCTE	0.18897	MJ
limestone, at mine - CH	0.18744	kg
tap water, at user - RER	0.17984	kg
electricity, nuclear, at power plant - DE	0.17662	MJ
natural gas, burned in power plant - NL	0.17531	MJ
natural gas, high pressure, at consumer - NL	0.17531	MJ
lignite, burned in power plant - CZ	0.17143	MJ
electricity, lignite, at power plant - DE	0.16257	MJ
natural gas, burned in gas turbine, for compressor station - RU	0.16050	MJ
natural gas, sweet, burned in production flare - GLO	0.15928	MJ
electricity, production mix PL - PL	0.15279	MJ
natural gas, high pressure, at consumer - DE	0.15219	MJ
natural gas, burned in power plant - DE	0.15219	MJ
pellets, iron, at plant - GLO	0.14854	kg
electricity, hard coal, at power plant - DE	0.14791	MJ
process-specific burdens, residual material landfill - CH	0.14443	kg
natural gas, burned in industrial furnace low-NOx >100kW - RER	0.14421	MJ
electricity, natural gas, at power plant - IT	0.14244	MJ
lignite, at mine - RER	0.14230	kg
transport, natural gas, pipeline, long distance - RU	0.13602	t*km
hard coal, at mine - EEU	0.13496	kg
hard coal, at regional storage - EEU	0.13496	kg
heavy fuel oil, burned in power plant - IT	0.13411	MJ
hard coal, burned in power plant - IT	0.12767	MJ
electricity, nuclear, at power plant pressure water reactor - DE	0.12540	MJ
natural gas, high pressure, at consumer - ES	0.12442	MJ
natural gas, burned in power plant - ES	0.12442	MJ
heavy fuel oil, burned in refinery furnace - RER	0.12307	MJ

gravel, round, at mine - CH	0.11037	kg
operation, van < 3,5t - CH	0.10661	m
disposal, tailings from hard coal milling, in impoundment - GLO	0.10594	kg
electricity, production mix NL - NL	0.10472	MJ
discharge, produced water, onshore - GLO	0.10387	kg
natural gas, burned in power plant - CENTREL	0.10295	MJ
lignite, burned in power plant - GR	0.10166	MJ