Energy management plan
2019

	site	scope	topic	detail	target value (related to site)	unit	value (ton CO_2)	responsible	result value	unit'	value (ton CO2)'	annotation
	G			educating new employees	yes			HSE dep.	yes			Inbedded in new induction program.
	SPB	2+3	Regenerative Thermal Oxidizer	replacing AK filters by RTO for removal of solvents in guided emissions			221,4	project manager			0	Problems with the continuity of operations due to our type of process (short peak loads vs. long constant load) and wrong dimension (bigger load than designed). Investigations to optimize use still ongoing. AK filters placed to ensure emission limits during start-up and bypass of the RTO. Due to the higher gas consumption than anticipated (discontinuous process = more heating vs. self-sustaining process) and still active AK filters (allthough active during a far shorter time), we won't take into account a CO2 benefit resulting from this action.
	WIL	3	new quay	constructing new quay	yes			project manager	ongoing			Works started beginning of 2019. Phase 1 completed. Start of phase 2 in June 2020. Planned for completion end of 2020.
	SPB	1+2	WKK	installing WKK	balance of electricity / gas		613	project manager	postponed			Other expansion plans have taken up the reserved space. The earlier received permit will not be adjusted to this new situation.
	G	3	ECO Design	reduction of needed amount of steel and paint or substitution of aluminium			1500	Engineering manager	7791 (staal) 17,2 (verf)	ton	10931	Input for reuse auxilary steel expanded to input from SPO and SPU
	IEM	2	electricity: wind turbine	placing of Eneco wind turbine 2018-2020	yes				ongoing			Study completed. Permit OK december 2019. Appeal procedure ongoing, expected approval August 2020. Two new transformators to be placed (Eneco and Eandis). Placing of turbine second half 2021. Operational beginning of 2022. Remark: Switch from purchase to own production, no CO2 savings as the switch is from solar to wind. But this means the total production of green energy enlarges, and thus is available for other consumers.
	IEM	3	transport of employees: bike leasing	offering of bike lease to employees	120000	km	23		201685 (+56860)	km	35,5 (+10)	# users +53 to 122 (+77%) # kilometers +56860km (+39%) average distance home-work from 8,86 to 10,1km
	WIL	3	transport of employees: bike leasing	offering of bike lease to employees	25000	km	5		135853 (+54379)	km	23,9 (+9,6)	# users +17 to 51 (+50%) # kilometers +54379km (+67%) average distance home-work from 6,1 to 8,37km
add	SPB	3	transport of employees: bike leasing	offering of bike lease to employees					29420 (+5030)	km	5,18 (+0,89)	# users +3 to 14 (+27%) # kilometers +5030km (+21%) average distance home-work from 5,23 to 7,29km
	SPB	2	electricity: replacing generators	expanding electrical installation to replace generators in dock	under investigation				ongoing			CAPEX approved. Adjustment works ongoing. Estimated operational in second half 2020.
	SPB	1	fuel transport to electric	replacing fuel transport to electric in halls improving efficiency of use of fuel powerd transport	more efficient use of fuel powered transport				231703	L	741	The drop in fuel consumption has two reasons: * In 2019 there was less need for induction heating in the dock compared to 2018. This is project related. Electricity in the dock is provided by generators, because the electric installation in the dock is not suited. As this installation is being revamped in 2020 to eliminate all generatos, we expect the fuel consumption to go down further. * In 2019 the use of cherrypickers has halved because of the ongoing action to optimize internal transport. Walkways have been installed between the TP's, which limits the need for cherrypickers to get up and down the TP's. As we don't have data on where the fuel is going (generators or transport), we can't split up these two factors. But the emission factor is the same, and thus the total savings is correct.
new	WIL	2	electricity: wind turbine	study wind turbine Balen	under investigation				ongoing			Investigation ongoing by Enenco. One big turbine at Willems versus 3 smaller ones at Willems / quay side / third location. Option direct line from quay to Willems.
new	SPB	2	electricity: wind turbine	study wind turbine Hoboken	under investigation				ongoing			investigation ongoing by Eneco
new	SPB	2	electricity: solar panels	study solar panels roof offices Hoboken	under investigation				ongoing			investigation ongoing. Not on roof as roof structure is not suited. Currently investigating wall mounted panels.
new	SPU	2	electricity: green supplier	study possibility green supplier UK	under investigation				ongoing			investigation moved to beginning of 2020
new	SPB	2	electricity: measuring is knowing	detailed study of energy use	yes				ongoing			Sensorfact measuring devices installed October 2019. Not working properly. Only measuring current, not voltage. So no calculation of cosp. New study with Siemens devices ongoing.
new	G	3	offshore transport	subcon data to improve offshore transport CO_2 calculations	yes				yes			data provided by Fabricom (who got it from offshore transport companies) with regards to Tennet tender. To be analysed and processed in to scope 3 calculation and chain analysis. Will be further detailed during Tennet execution phase.
new	G	1+2	Environmental Cost Indicator	* calculation of the ECI for the Tennet tender using expert software * study of use of this data for CO_2 Performance Ladder	yes				yes			ECI calculation Tennet tender finalized. Project has been awarded. ECI calculations will be further detailed and updated during the project in 2020 - 2022. *NOTE: new steel data received, to be analysed and processed in to scope 3 calculation and chain analysis*
add	WIL	1+2	fuel for heating + electricity	finishing of renovation offices: HVAC and LED lighting								The renovation of the offices has been finalized with the revamp of the facilities. No specific data available.
add	WIL	1+2	fuel for heating + electricity	automated control of painting hall extraction system								Steering of the ventilation system based on number of active paint guns. No specific data available. Action will be repeated in Arendonk in 2020. Possibly we will have detailed measuring data then.
add	IEM	3	transport of employees: electric cars	4 additional charge points for electric cars								

Reduction target scope 1/2 :	862 7,02%	ton CO_2 / year % of 2018	**Realized reduction:**	741 6,03%	ton CO_2 / year % of 2018
Reduction target scope 3 :	1500	ton CO_2 / year		10951,5	ton CO_2 / year

Energy management plan
2020

	site	scope	topic	detail	target value (related to site)	unit	value (ton CO_2)	responsible	result value	unit'	value (ton CO2)'	annotation
	WIL	3	new quay	constructing new quay	yes			project manager				Works started beginning of 2019. Not completed yet.
	G	3	ECO Design	reduction of needed amount of steel and paint or substitution of aluminium			1500	engineering manager				
	SPB	1	electricity: replacing generators	expanding electrical installation to replace generators in dock	50.000	L	160	director SPB				Shift from scope 1 fuel oil to scope 2 electricity, which is 100% green.
	IEM	2	electricity: wind turbine	placing of Eneco wind turbine	yes			director IEM				Study completed. Permit OK december 2019. Remark: Switch from purchase to own production, no CO2 savings as the switch is from solar to wind. But this means the total production of green energy enlarges, and thus is available for other consumers.
	WIL	2	electricity: wind turbine	study wind turbine Balen	under investigation			director WIL				investigation ongoing by Enenco
new	WIL	1	heating: geothermal energy	study geothermal energy Balen	under investigation			director WIL				
	SPB	2	electricity: wind turbine	study wind turbine Hoboken	under investigation			director SPB				investigation ongoing by Eneco
	SPB	2	electricity: solar panels	study solar panels Hoboken	under investigation			director SPB				investigation ongoing. Not on roof as structure is not suited. Currently investigating wall mounted panels.
new	SPO	2	electricity: green supplier	study possibility green supplier Poland	2.500.000	kWh	1623	director SPO				search for 100% green and local electricity
	SPU	2	electricity: green supplier	study possibility green supplier UK	2.000.000	kWh	1298	director SPU				search for 100% green and local electricity
new	IEM	2	electricity: measuring is knowing	detailed study of energy use	yes			technician electrical automation				Study with Siemens devices ongoing
new	WIL	2	electricity: measuring is knowing	detailed study of energy use	yes			technician electrical automation				Study with Siemens devices ongoing
	SPB	2	electricity: measuring is knowing	detailed study of energy use	yes			technician electrical automation				Sensorfact measuring devices installed October 2019. Not working properly. Only measuring current, not voltage. So no calculation of cosp. New study with Siemens devices ongoing.
new	SPO	2	electricity: measuring is knowing	detailed study of energy use	yes			technician electrical automation				Study with Siemens devices ongoing
new	G	1 + 2 + 3	Tennet HKN/HKW project	project with award advantage * calculate project scope 1-2 emissions * keep Environmental Cost Indicator uner 9.000.000 €	yes			project ECI manager				Keeping the ECI under 9.000.000 € does not count as a "reduction". But a lot of possibilities will be ruled out to keep the cost under this threshold. A number for "avoided emissions" compared to a normal project will be recorded.
new	WIL	1	heating: insulation	Asbestos removal and roof insulation hall E	yes			director WIL				
new	WIL	1 + 2	heating + electricity	automated control of welding fume filtration hall F	tbd			technician electrical automation				
new	IEM	1 + 2	heating + electricity	automated control of painting hall extraction system	tbd			technician electrical automation				
new	IEM	2	electricity: efficient use	upgrade plasma cutter	tbd			director IEM				
new	G	3	transport of employees: electric cars	add to car policy: charge point squating	yes			Financial director				
new	G	1	transport of employees: electric cars	study electric car lease program	under investigation			Financial director				
new	WIL	3	transport of employees: electrical bikes	additional charging points for electrical bikes	yes			director WIL				
new	SPO	1 + 2	various	renovation plan Niemodlin: lighting, heating, insulation (wall panels, skylights)	yes			director SPO				As there is no historic data available, it is not possible to calculate savings from these actions.

Reduction target scope 1/2 : 3081 ton CO_2 / year
27,84% % of 2019

Realized reduction: ton CO_2 / year
% of 2019

Reduction target scope 3 : 1500 ton CO_2 / year

ton CO_2 / year