KPI LIST (post issue) GREEN BOND ISSUED 2017-MATURITY 2027 (ISIN XS1704789590)

Business Unit	n.	Project Description	Eligible Green Category	Eligible Category (DNV)	KPI	UM	2006/2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 FINAL	2018	2019	2020	2021	2022
WASTE MANAGEMENT	1	Waste to energy plant for Heat Production in Parma	Energy Eefficiency	Cogeneration facilities	PES Primary Energy Saving Indicator per operating year	%									11	17	17	17	17			
					Renewable energy share in percent on total	%									27	49	50	49	49			
					Thermal energy recovered from waste to Parma DH network in MWh per operating year	GWh									103	130	196	150	151			
	2	Waste to energy plant for Heat Production in Piacenza	Energy efficiency	Cogeneration facilities	PES Primary Energy Saving Indicator per operating year	%													25	25	25	25
					Renewable energy share in percent on total	%													35	15	15	15
					Thermal energy recovered from waste to Piacenza DH network in MWh per operating year	GWh											23		55	55	55	55
	3	Development of separate waste collection services	Waste management efficiency and recycling	Waste collection and sorting upgrades	Total sorted waste collection	t						635.724	644.444	675.610	721.788	737.163	711.911					
					Total of non sorted waste disposed	t						550.903	528.100	503.896	484.128	488.426	464.837					
					Number of bins for sorted waste	N						661.961	648.491	648.709	663.268	699.065	615.681					
					Volumes of bins for sorted waste	mc						105.278	111.322	120.371	145.345	155.114	163.037					
					Door to door collection system	N						687.215	833.069	998.080	1.061.847	1.139.228	1.391.087					
					Sorted waste collection hubs	N						112	112	112	117	117	113					
					Volumes of waste collected in the collection hubs	t						161.937	174.639	186.210	208.544	205.719	193.308					
ENERGY	4	Accumulators district heating Bit (TO)	Energy efficiency	Energy distribution and management	Primary energy saving per operating year	MWh										3.855	9.201	10.079	12.181	14.372	12.395	11.488
					Avoided CO_2 emissions from fossil sources per operating year	t										758	1.809	1.981	2.395	2.826	2.437	2.259
	5	Accumulators district heating Martinetto (TO)	Energy efficiency	Energy distribution and management	Primary energy saving per operating year	MWh										19.261	18.403	20.157	24.363	28.744	24.790	22.977
					Avoided CO_2 emissions from fossil sources per operating year	t										3.787	3.618	3.963	4.790	5.651	4.874	4.517
	6	Accumulators district heating Mirafiori Nord (TO)	Energy efficiency	Energy distribution and management	Primary energy saving per operating year	MWh													5.846	14.372	12.395	11.488
					Electrical energy produced from renewable non-fossil sources per operating year	MWh													46	46	46	46
					Thermal energy produced from renewable non-fossil sources per operating year	MWh													350	350	350	350
					Avoided CO_2 emissions from fossil sources per operating year	t													1.149	2.826	2.437	2.259
	7	Heat exchange and pumping substation in Lucento	Energy efficiency	Energy distribution and management	Electrical energy produced from renewable non-fossil sources per operating year	MWh												18	18	18	18	18
					Avoided CO_2 emissions from fossil sources per operating year	t												9	9	9	9	9
	8	Heat exchange and pumping TRM in Grugliasco and interconnection with Grugliasco and Beinasco	Energy efficiency	Energy distribution and management	Avoided CO_2 emissions from fossil sources per operating year	t													31.280	31.280	31.280	31.280
					Distributed thermal energy per operating year	MWh													145.000	145.000	145.000	145.000
	9	Piacenza district heating network, connection and pumping station at WTE	Renewable energy	Energy network Ddevelopment	Avoided CO_2 emissions from fossil sources per operating year	t						2.384	2.506	2.104	2.504	2.738	5.617	4.232	4.643	4.883	5.002	5.122
					Distributed thermal energy per operating year	MWh						32.706	34.389	28.873	34.361	37.568	47.019	58.066	63.701	66.988	68.632	70.276
	10	Parma district heating network	Renewable energy	Energy network development	Primary energy saving per operating year	MWh						12.813	5.733	81.696	114.868	144.524	143.372	144.592	145.812	147.032	148.252	148.252
					Avoided CO_2 emissions from fossil sources per operating year	t						4.326	1.551	16.856	23.614	29.523	29.165	29.909	30.164	30.418	30.673	30.673
					Distributed thermal energy per operating year	MWh						176.797	176.815	159.146	188.688	196.691	194.389	199.268	200.964	202.660	204.355	204.355
	11	District heating networks development in Torino	Renewable energy	Energy network development	Primary energy saving per operating year	MWh						2.794.000	2.889.000	2.270.000	2.733.000	2.997.000	3.400.000	3.176.000	3.330.000	3.416.000	3.479.000	
					Avoided CO_2 emissions from fossil sources per operating year	t						1.007.686	1.092.546	795.595	933.086	1.026.775	1.046.376	1.087.995	1.140.770	1.170.222	1.191.843	
					Distributed thermal energy per operating year	MWh						2.192.000	2.312.000	1.990.000	2.109.000	2.205.000	2.307.366	2.336.000	2.450.000	2.513.000	2.559.000	
	12	District heating networks development in Reggio Emilia	Renewable energy	Energy network development	Primary energy saving per operating year	MWh						91.780	92.595	93.365	93.883	94.065	120.327	95.553	96.191	96.758	98.175	98.175
					Avoided CO_2 emissions from fossil sources per operating year	t						33.289	33.585	33.864	34.052	34.118	47.097	34.652	34.889	35.095	35.609	35.609
					Distributed thermal energy per operating year	MWh						456.566	285.767	384.325	409.932	402.057	407.335	408.418	411.144	413.567	419.625	419.625
	13	Mini Hydro La Loggia (TO)	Renewable energy	Mini hydro power	Electrical energy produced from renewable non-fossil sources per operating year	MWh									2.733	3.537	3.343	3.536	3.536	3.536	3.536	3.536
					Avoided CO_2 emissions from fossil sources per operating year	t									1.403	1.816	1.644	1.810	1.810	1.810	1.810	1.810
	14	Mini Hydro Pianchette - Noasca (TO)	Renewable energy	Mini hydro power	Electrical energy produced from renewable non-fossil sources per operating year	MWh													2.020	2.020	2.020	
					Avoided CO_2 emissions from fossil sources per operating year	t													1.034	1.034	1.034	
	15	Mini Hydro Giffoni plant repowering	Renewable energy	Mini hydro power	Electrical energy produced from renewable non-fossil sources per operating year	MWh													1.837	1.837	1.837	
					Avoided CO_2 emissions from fossil sources per operating year	t													940	940	940	
	16	Enìa Solaris photovoltaic plants near Brindisi	Renewable energy	Solar PV energy generation	Net produced electricity from renewable non-fossil sources per operating year	kWh						6.813.750	6.290.625	6.721.427	7.051.488	6.826.286	7.370.000					
					Avoided CO_2 emissions from fossil sources per operating year	t						3.491	3.223	3.444	3.613	3.498	3.624					
NETWORKS	17	Improvement of Genova plants	Waste water treatment	Wastewater treatment plant upgrades	Treated population equivalent (potential)	N						160.000	160.000	196.000	196.000	196.000	231.000	231.000	236.000	326.000	423.000	423.000
					Analytic parameters (Abb % BOD, Abb % COD, Abb % SST, Abb % Ntot, Abb % Ptot)	%																
	18	Improvement of Reggio Emilia plants	Waste water treatment	Wastewater treatment plant upgrades	Volumes of water destined to irrigation re-usage / Volumes of total treated water	%											30%	28%	28%	28%	28%	28%
					Treated population equivalent (potential)	N						19.350	19.350	19.350	20.250	20.250	24.250	24.250	38.850	38.850	38.850	38.850
					Analytic parameters (Abb % BOD, Abb % COD, Abb % SST, Abb % Ntot, Abb % Ptot)	%																
	19	Improvement of Piacenza plants	Waste water treatment	Wastewater treatment plant upgrades	Treated population equivalent (potential)	N						17.360	17.360	17.360	19.500	19.500	23.500	23.500	23.500	23.500	23.500	23.500
					Analytic parameters (Abb % BOD, Abb % COD, Abb % SST, Abb % Ntot, Abb % Ptot)	%																
	20	Improvement of Parma plants	Waste water treatment	Wastewater treatment plant upgrades	Treated population equivalent (potential)	N						10.400	10.400	11.650	11.650	11.900	11.900	14.000	14.000	14.000	14.000	14.000
					Analytic parameters (Abb % BOD, Abb % COD, Abb % SST, Abb % Ntot, Abb % Ptot)	%																
	21	Cogeneration turboexpansion plant “Celsius”	Energy efficiency	Cogeneration facilities	Net produced electricity from renewable non-fossil sources per operating year	kWh											45.000	5.100.000	5.100.000	5.100.000	5.100.000	5.100.000
					Avoided CO_2 emissions from fossil sources per operating year	t											12	1.200	1.200	1.200	1.200	1.200
	22	Hydroelectric investments	Renewable energy	Mini hydro power	Net produced electricity from renewable non-fossil sources per operating year	kWh	23.238.000	23.238.000	23.238.000	24.699.000	25.916.000	32.653.000	40.118.220	44.540.598	30.996.087	30.504.404	24.898.000					
					Avoided CO_2 emissions from fossil sources per operating year	t	11.930	11.930	11.930	12.680	13.305	16.763	20.596	22.866	15.912	15.660	12.245					