

KPI LIST (post issue) GREEN BOND ISSUED 2019 - MATURITY 2029 (ISIN XS2065601937)

Business Unit	n.	Project Description	Eligible Green Category	Eligible Category (DNV)	KPI	UM	2006/2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Final 2017	Final 2018	Final 2019	2020	2021	2022				
WASTE MANAGEMENT	1	Waste to energy plant for heat production in Parma	Energy efficiency	Cogeneration facilities	PES Primary Energy Saving Indicator per operating year	%									11	17	17	13	26	13	13	13				
					Renewable energy share in percent on total	%												27	49	50	49	49	49	49	49	
					Thermal energy recovered from waste to Parma DH network in MWh per operating year	GWh													103	130	196	196	194	132	132	132
	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			
					Renewable energy share in percent on total	%																	15	15	15	
					Thermal energy recovered from waste to Piacenza DH network in MWh per operating year	GWh															23	30	27	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	788.313	813.804	781.000	809.000	828.000			
					Total of non sorted waste disposed	t									550.903	528.100	503.896	484.128	488.426	464.837	445.411	415.905	399.100	354.000	335.400	
					Number of bins for sorted waste	N									661.961	648.491	648.709	663.268	699.065	615.681	839.269	886.715	891.440	910.775	918.896	
					Volumes of bins for sorted waste	mc									105.278	111.322	120.371	145.345	155.114	163.037	224.759	236.033	239.817	245.807	248.395	
					Door to door collection system	N									687.215	833.069	998.080	1.061.847	1.139.228	1.391.087	1.473.268	1.590.536	1.723.306	1.859.322	1.925.170	
					Sorted waste collection hubs	N									112	112	112	117	117	113	113	117	117	117	117	
					Volumes of waste collected in the collection hubs	t									161.937	174.639	186.210	208.544	205.719	193.308	211.396	228.358	227.197	228.625	230.224	
	4	Biowaste recovery to produce compost and biomethane - Ferrania (SV)	Waste management efficiency and recycling	Waste collection and sorting upgrades	Production of compost	t															835	20.000	20.000	20.000		
					Production of biomethane	Sm3																	4	4	4	
Avoided CO ₂ emissions from fossil sources per operating year					t																		7.888	7.888	7.888	
Primary energy saving per operating year					Tep																		6.270	6.270	6.270	
5	Biowaste recovery to produce compost and biomethane - Santhià (TO)	Waste management efficiency and recycling	Waste collection and sorting upgrades	Production of compost	t															1.200	13.400	13.400	13.400			
				Production of biomethane	Sm3																		3	3	3	
				Avoided CO ₂ emissions from fossil sources per operating year	t																		5.127	5.127	5.127	
				Primary energy saving per operating year	Tep																		2.173	2.173	2.173	
ENERGY	6	Cogeneration plant Torino Nord	Energy efficiency	Cogeneration facilities	Electrical energy produced per operating year	MWhe						1.432.728	1.894.130	1.080.072	2.200.788	2.133.545	2.002.201	2.079.471	2.041.630	1.865.459	1.820.532	1.820.931				
					Thermal energy produced per operating year	MWht									453.069	474.766	419.311	1.092.632	1.030.891	958.458	1.013.481	907.646	1.092.247	1.088.406	1.102.496	
					Primary energy saving per operating year	MWh										574.353	796.823	471.970	1.396.716	1.308.017	1.226.699	1.263.239	987.121	1.361.210	1.348.095	1.363.535
					Avoided CO ₂ emissions from fossil sources per operating year	t										211.482	289.447	169.483	426.318	413.253	397.432	361.382	331.455	385.577	363.262	366.492
	7	VDE hydroelectric plant (Chiomonte-Susa) Repowering project	Renewable energy	Mini hydro power	Electrical energy produced from renewable non-fossil sources per operating year	MWhe							56.140	72.690	62.690	62.831	60.034	59.818	57.263	903	19.030	19.030	19.030			
					Avoided CO ₂ emissions from fossil sources per operating year	t										27.643	36.882	32.407	33.198	30.760	29.418	27.384	433	9.359	9.359	9.359
	8	Cogeneration plant Moncalieri-GT2 RPW	Energy efficiency	Cogeneration facilities	Electrical energy produced per operating year	MWhe							1.669.146	2.028.560	1.585.195	1.292.799	1.515.332	1.882.310	1.807.728	1.792.325	1.474.560	1.474.560	1.474.560			
					Thermal energy produced per operating year	MWht										659.604	751.435	817.637	477.307	612.983	680.375	538.323	543.157	432.117	432.117	
					Primary energy saving per operating year	MWh										84.092	97.341	84.700	58.099	871.249	1.026.936	905.088	730.886	800.263	820.670	840.349
					Avoided CO ₂ emissions from fossil sources per operating year	t										310.931	400.332	349.098	265.512	303.862	321.873	269.818	263.595	252.292	257.175	265.655
9	Torino LED (I and II phases)	Energy efficiency	Energy distribution and management	Primary energy saving per operating year	MWh											23.700	45.300	45.300	51.498	56.500	65.500	67.700				
				Avoided CO ₂ emissions from fossil sources per operating year	t													5.600	10.300	10.000	11.347	12.500	14.400	14.900		
10	Smart solutions	Energy efficiency	Energy distribution and management	Avoided CO ₂ emissions from fossil sources per operating year	t														1.119	3.092	2.376	2.516	2.516			
				Primary energy saving per operating year	Tep																648	1.281	975	1.033	1.033	
NETWORKS	11	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	231.000	326.000	423.000	423.000				
					Analytic parameters (Abb % BOD, Abb % COD, Abb % SST, Abb % Ntot, Abb % Ptot)	%																				
	12	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	11.900	11.900	14.000	14.000	14.000			
					Analytic parameters (Abb % BOD, Abb % COD, Abb % SST, Abb % Ntot, Abb % Ptot)	%																				
	13	Cogeneration turboexpansion plant "Celsius"	Energy efficiency	Cogeneration facilities	Net produced electricity from renewable non-fossil sources per operating year	kWh												45.000	75.000	848.329	5.100.000	5.100.000	5.100.000			
					Avoided CO ₂ emissions from fossil sources per operating year	t															12	22	315	1.200	1.200	1.200
	14	Investments in sewage and waste water plants (Emilia and Liguria)	Waste water treatment	Wastewater treatment plant upgrades	Water Treatment plants	N		1.014	1.030	1.035	1.047	1.047	1.047	1.056	1.076	1.085	1.102	1.122	1.278	1.293	1.299	1.299	1.299			
					Sewage systems	km		7.689	8.075	8.443	8.772	8.983	9.052	9.164	9.274	9.293	9.924	10.606	10.662	10.803	10.803	10.803				
	15	Investment in drainage and purification (La Spezia-Liguria)	Waste Water treatment	Wastewater treatment plant upgrades	Treated population equivalent (potential)	N													220.000	228.378	237.000	247.000	257.000			
	16	Electricity distribution investments	Energy efficiency	Energy distribution and management	Network leaks	%						5%	5%	7%	6%	6%	5%	4%	4%	4%	4%	4%	4%			
Network leaks					GWh							220	244	315	249	246	204	173	167	169	173	173	173			
Electricity fed into the network					GWh							4.484	4.485	4.451	4.097	4.191	4.387	4.420	4.002	3.987	4.420	4.420	4.420			
17	Water distribution Smart Metering (Emilia, Liguria and Piemonte)	Adaptation	Water efficiency	Smart meters installed	n														51.742	90.000	130.000	170.000				
				Percentage of smart meters on the total	%																5%	9%	14%	18%		
18	Gas distribution Smart Metering (Emilia and Liguria)	Energy efficiency	Energy distribution and management	Smart meters installed	n				278	2.710	2.928	5.104	10.862	39.422	97.034	258.569	469.480	603.171	718.000	738.500	748.800					
				Percentage of smart meters on the total	%				0%	0,3%	0,4%	1%	1%	5%	13%	33%	61%	78%	93%	95%	97%					
19	Electricity distribution Smart Metering 1G (Torino and Parma)	Energy efficiency	Energy distribution and management	Smart meters installed	n	81	284	522	602	632	648	662	675	687	698	708.000	719.000	727.545	719.000	719.000	719.000					
				Percentage of smart meters on the total	%	11%	39%	71%	82%	86%	88%	90%	92%	93%	95%	96%	98%	96%	98%	98%	98%					
20	Replacement of gas distribution networks	Energy efficiency	Energy distribution and management	Average network leaks (underground network measured with planned inspection)	n				1.050	990	886	776	715	665	620	590	552	514	≤ 535	≤ 530						
MARKET	21	E-mobility initiatives in the Iren offices	Trasport	Electric vehicle	Avoided CO ₂ emissions from fossil sources per operating year	t												52	789	691	871	1.063				