The environmental management system

		2011	2012	2013
ISO 14001 certifications	(number)	103	108	112
ISO 50001 certifications		3	6	8
EMAS registrations		9	10	10
Total systems audits (internal and made from external certification bodies)		1,744	3,475	2,555
- of which made from external certification bodies (ISO 14001) [a]		36	117	90
- of which made from external certification bodies (OHSAS 18001) [a]		23	133	99
Audits of other typology (EMAS, ISO 50001, ISO 9001, audits on supplier/contractors, etc.)		2,152	2,842	1,165
Environmental expenditures	(€ thousand)	893,421	743,400	734,381
- current spending		551,799	468,263	491,043
- investments		341,622	275,136	243,338

(a) The figures don't include E&P subsidiaries.

The majority of management systems for the main operating units are registered under the ISO 14001 standard and in Europe the main production units have undergone the EMAS registration process. By 2015 ISO 14001 certification is expected for all the subsidiaries that have a significant HSE risk profile. In 2013 more than 70% of such companies were already certified, in particular:

- in the E&P sector, all the previously obtained certifications were maintained;
- in the G&P sector, where ISO 14001 certification had already been completed in 2011 for all the production plants and where the Ferrera Erbognone, Mantua, Ravenna and Ferrara plants are covered by EMAS Registration, all the existing certifications from previous periods were confirmed and the subsidiary Adriaplin doo obtained certification;
- in the R&M sector the task of maintaining the existing certifications continued (in particular for all the refineries) as well as the extension of certificates with coverage for reclamation activities in unused sites and the subsidiaries Eni Austria GmbH and Oléoduc du Rhône SA;
- in the Chemicals sector, coverage has been confirmed for all the Italian and foreign plants;
- in the Engineering & Construction sector all the certifications already obtained in recent years have been confirmed; the operational companies Saipem Contracting Netherlands BV - Sharjah Branch and PT Saipem Indonesia Karimun Branch in the Engineering & Construction sector were also certified and certification was completed at Saipem SpA with coverage also for drilling activities.

In 2013 Eni obtained 2 new ISO 50001 energy management system certifications (Oberhausen Petrochemical Plant and certification of ICT corporate headquarters) which have been added to those obtained previously (in the Refineries in Venice, Livorno, Sannazzaro and Taranto, the Szazhalombatta plant in the Chemicals sector and the Corporate offices).
Environmental spending recorded an overall light decline (down 1.2% compared to 2012), linked to the decline in investments (down 11.6%) in the E&P sector (down 15.5%, totalling approximately -€18.2 million), R&M (-16.7%, totalling approximately -€17.7 million) and other activities (-41.7%, totalling approximately -€4.5 million). In the E&P sector, the reduction in investments is primarily linked to Nigeria, due to the completion of the big flaring down project of Idu in 2012, the Akri and Ogbainbiri projects in the third quarter of 2013 (these were associated with lower investments compared to Idu) as well as completion of the project in Italy to replace the Perla-Prezioso Sealine.

Climate change

		2011	2012	2013
Direct GHG emissions	(tons CO_2 eq)	49,128,806	52,498,789	47,299,618
- of which CO_2 from combustion and process	(tons)	35,319,845	36,365,220	34,171,339
- of which CO_2 equivalent from flaring	(tons CO_2 eq)	9,553,894	9,461,518	8,478,376
- of which CO_2 equivalent from unburnt methane and fugitive emissions		3,222,051	4,475,756	2,902,091
- of which CO_2 equivalents from venting		1,033,017	2,196,295	1,747,812
CO_2 emissions from Eni plants subject to EU ETS		23,615,602	22,099,231	20,417,804
Quotas allocated to Eni plants subject to EU ETS		25,373,975	24,978,257	9,233,300
Eni plants subject to EU ETS	(number)	39	39	40
Indirect GHG emissions from purchases from other companies (Scope 2) [a]	(tons CO_2 eq)	1,190,860	846,294	756,062
Indirect CO_2 emissions from sales of products and activities contracted out to third parties (Scope 3) [b]	(Mtons CO_2eq)	301.623	290.205	282.922
CO_2eq emissions/100% operated hydrocarbon gross production (E&P)	(tons CO_2eq/toe)	0.206	0.225	0.222
CO_2eq emissions/kWheq (EniPower)	(g CO_2eq/kWheq)	403.934	399.204	406.501
CO_2eq emissions/uEDC (R&M)	(tons CO_2eq/kbbl/SD)	1,231	1,143	1,049
Volume of gas sent to flaring	(MSm^3)	4,433	4,506	3,762
Volume of gas sent to venting		26.32	25.92	20.65

(a) The 2013 figure also includes indirect emissions of N_2O from purchases from other companies.
(b) The figure includes GHG indirect emissions (CO_2, CH_4 and N_2O) from drilling activities contracted out to third parties in the E&P sector, from sales of petroleum products and natural gas (excluding oil products sold to Eni group companies and sold by Eni Trading & Shipping to third companies), from business travel and from road transport contracted to third parties on highway and maritime transport. Only for 2011 and solely for drilling activities contracted to third parties in the E&P sector, the figure refers only to CO_2.

In 2013 greenhouse gas emissions were reduced in all sectors (in particular, down 9.7% in E&P, down 12.1% in G&P and down 14.1% in R&M), causing an overall decline in Eni of 9.9% compared to the previous year.
The change was caused not only by lower production levels, but also by the implementation of specific strategies to reduce greenhouse gas emissions (in particular flaring down activities) and improvement actions designed to increase energy efficiency, as demonstrated by the improvement in the sector emission indexes for E&P and refining. In the thermoelectric sector accidental events (such as lengthy downtimes of the most efficient production units at Ferrera Erbognone and Mantua) and the need, for market reasons, to use the combined cycles at low loads, resulted in a reduction of overall performance and increased CO_2 emissions per unit of product, resulting in an increase in the performance index, which still remained below the threshold set for the reference period (415 $gCO_2eq/kWheq$).
The overall GHG performance positively affected the results obtained by the E&P sector with the flaring down projects, with volumes sent to flaring reduced by 16.5% compared to 2012 and the respective greenhouse gas emissions by 10.4%. Remembering that 2011 performance is not representative as it was affected by reduced production in Libya due to the Country's political situation, the 2013 result also stands out as positive compared to 2010, with a reduction of more than 29% in the GHG emissions index from flaring per unit produced.
In Congo the development of the M'Boundi field continued with the application of advanced recovery techniques and economic enhancement of the associated gas, and an increase in 2013 of the quantities sold under long-term contracts to power stations in the area, including the Centrale Electrique du Congo (CEC) with a production capacity of 300 MW. In Nigeria the Akri and Ogbainbiri flaring down projects commenced; the completion of the upgrade at the Ogbainbiri flowstation will reduce gas volumes sent to flaring by 0.11 million cubic meters a day. In 2013 the flaring down programme in the area was accompanied by the completion of the upgrade of the flowstation at the Idu field, with a reduction of the gas flared amounting to 1.4 million cubic meters per day. GHG emissions from venting were also reduced compared to 2012 (down 20.4%), as well as the volume of gas sent to venting (down 20.3%).
In Europe, within the framework of the Emissions Trading Scheme (ETS), in 2013 Eni's consolidated greenhouse gas emissions were 7.6% less than those for 2012. The quotas assigned in 2013 were drastically reduced compared to the historical series due to the new allocation system in effect for the third ETS period (2013-2020), while installations grew from 39 to 40 due to the entry of the Goliat site run by the subsidiary Eni Norge in the E&P sector.
The declining trend in emissions at the installations subject to ETS regards all the sectors, with the sole exceptions of E&P, where emissions (equal to 6% of the total) are increasing (up 31.7% compared to 2012) due to the Val D'Agri installation, Florence FPSO reaching peak production and the commencement of activities at the Goliat site and in the chemicals sector, where they remained essentially stable (down 0.4%), contributing to 18% of the total. In G&P, emissions, which accounted for 51% of Eni's total, were reduced by 9.6% due to the general decline of electricity production (down 11%) and in R&M, which accounted for 25% of the total, there was a decline of 14.2% as a result of the suspension of part of the activities in the Gela Refinery and a general reduction of processing activities (down 7%).
Indirect GHG emissions other than those due to the acquisitions from other companies (so-called Scope 3) showed a reduction (down 2.5% compared to 2012), related to the declining contribution of emissions associated with products sold due to the reduction in sales.

Energy efficiency

		2011	2012	2013
Electricity produced by type of source (EniPower)	(TWh)	25.40	1.08	23.14
- of which natural gas		23.52	1.03	21.52
- of which oil products		1.89	1.57	1.61
- of which other fuels		0.00	0.00	0.01
Energy consumption from production activities/100% operated hydrocarbon gross production (E&P)	(GJ/toe)	1.615	1.557	1.536
Energy Intensity Index (R&M)	(%)	79.4	76.9	76.3
Net consumption of primary resources	(toe)	14,304,869	14,629,243	14,174,056
- natural gas		9,202,030	10,126,614	9,912,862
- oil products		4,896,890	4,286,526	4,135,872
- other fuels		205,949	216,103	125,322
Primary energy purchased from other Companies by type [a]	(GJ)	94,263,949	83,652,390	61,127,412
- electricity		25,336,671	15,388,688	17,870,260
- primary resources		63,506,165	63,387,463	38,958,392
- steam		5,362,328	4,822,549	4,298,683
- direct heat process		58,785	53,507	0
- waste heat recovery		0	183	77
Energy efficiency and climate change expenditures[b]	(€ thousand)	120,212	72,042	75,349
- current spending		1,175	822	198
- investments		119,037	71,220	75,151

(a) The indicator measures only energy purchased by Eni for its own consumption and does not include the quota bought and sold on the market, therefore the 2011-2012 data differ from the last year disclosure.
(b) The figure is part of the environmental expenditures reported in the table "The environmental management system".

Initiatives to improve energy efficiency include, in addition to traditional investments, interventions of a managerial nature such as the adoption and certification of Energy Management Systems (EMS). At the end of 2013, Eni's energy management systems in the R&M Refineries of Livorno, Sannazzaro, Taranto and Venice were certified ISO 50001 as well as the chemical plants in Oberhausen and Szazhalombatta and the corporate headquarters of Eni SpA.
In the downstream sector, implementation of the measures in the energy saving plan continued, allowing excellent results to be achieved in terms of reducing consumption and containing emissions into the atmosphere. The measures undertaken between 2008 and 2013 enabled energy savings of over 300 thousand toe/year, the equivalent of a reduction in emissions of approximately 800 thousand tonnes of CO_2. In the refining sector, the measures undertaken in 2013 were able to produce savings at a rate of about 34 ktoe/y; for the chemicals sector, the measures undertaken in 2013 will lead to savings at a rate of about 23 ktoe/y.
In the G&P sector initiatives continued to improve energy efficiency and achieve technical and economic optimization of electricity generation plant use, with repowering of the turbo-units of the power plants at Ferrera Erbognone, Mantua and Ferrara. In addition, EniPower continued to invest in renewable and alternative resources through the construction of photovoltaic plants and biomass power station at Porto Torres to produce electricity.

Other emissions into the atmosphere

		2011	2012	2013
NOx (nitrogen oxide) emissions	(tons NO_2eq)	97,114	115,571	101,832
NOx emissions/100% operated hydrocarbon gross production	(tons NO_2eq/ktoe)	0.486	0.571	0.538
NOx emissions/kWheq (EniPower)	(g NO_2eq/kWheq)	0.162	0.155	0.158
NOx emissions/uEDC (R&M Refineries)	(tons NO_2eq/kbbl/SD)	1.14	1.11	0.91
SOx (sulphur oxide) emissions	(tons SO_2eq)	37,943	30,137	27,949
SOx emissions/ 100% operated hydrocarbon gross production	(tons SO_2eq/ktoe)	0.055	0.044	0.091
SOx emissions/kWheq (EniPower)	(g SO_2eq/kWheq)	0.037	0.027	0.017
SOx emissions/uEDC (R&M Refineries)	(tons SO_2eq/kbbl/SD)	3.93	3.22	2.19
NMVOC (Non-Methane Volatile Organic Compounds) emissions	(tons)	46,228	48,702	43,536
TSP (Total Suspended Particulate) emissions		3,297	3,548	2,848
Air protection expenditures [a]	(€ thousand)	46,736	56,882	69,153
- current spending		16,608	15,795	20,707
- investments		30,128	41,087	48,446

(a) The figure is part of the environmental expenditures reported in the table "The environmental management system".

In 2013 emissions of NOx were reduced by a total of 11.9% from 2012, thanks to the contribution of all the business areas (in particular, down 13.7% in E&P, down 26.1% in G&P, and down 23.1% in R&M). The E&P sector, which accounts for more than 60% of Eni's total figure, reduced its emissions by over 9,700 tonnes, due to the change of fuel mix used in different Countries (Indonesia, Kazakhstan, Ecuador and Nigeria), with a consequent improvement in the emission index per unit produced (down 5.9%). The refining sector significantly improved its performance (down 17.9% reduction recorded in the emission index), in particular due to projects underway at the Refineries in Sannazzaro and Gela, which at peak production result in the benefit of no NOx emissions for approximately 110 t/y.
In the field of electricity generation, where full operation of VeLoNOx burners at peak production reduced emissions of NOx by more than 20%, the index of emissions per unit produced did not decline (up 1.5%), due to unscheduled shutdowns in some plants and, due to market needs, combined cycles not running at full speed.
In 2013 total emissions of SOx went down 7.3% compared to 2012. The declining trends were established mainly in the refining sectors (down 6,186 tonnes), chemicals (down 661 tonnes) and G&P (down 393 tonnes), while E&P (up 5,028 tonnes) and E&C (up 91 tonnes) showed a growing trend. In the refining sector, which contributes about 38% of the consolidated Eni total, the declining trends (down 36.4% compared to 2012 for emissions and down 32% for the index referring to production) are to be attributed both to reduced processing in the refineries and to a change in the used fuel mix (increased use of natural gas in the refineries and consequently reduced use of fuel oil and coke) as well as energy-saving initiatives. The positive performance was also boosted by the work performed at the Gela Refinery to interconnect the four-stack chimney with the SNOx chimney, which allows the fumes sent to the latter to be maximised. Also at the Gela Refinery, the creation of a new SRU unit is planned with the expected benefit of no SOx emission at full production for about 740 t/y.
In the E&P sector the increase in SOx emissions compared to 2012 (both in absolute terms and relative to units produced) is mainly attributable to the Libyan contribution, a result not fully accounted during 2012 due to the difficult situation in the Country and, secondly, to the subsidiary Agip Karachaganak (Kazakhstan) due to greater accuracy in the estimation of emissions.
NMVOC and TSP emissions went down 10.6% and 19.7% respectively compared to 2012. The changes are mainly attributable to the E&P sector due to the reduction of flaring. The reduction of volatile organic compounds was also affected by fewer movements of petroleum products in R&M and specific operations undertaken at the Mantua and Dunkirk petrochemical plants.

Reclamation

		2011	2012	2013
Waste from reclamation activities	(tons)	10,852,410	10,102,297	11,976,764
- of which hazardous		2,886,996	3,754,056	3,968,183
- of which non-hazardous		7,965,414	6,348,241	7,345,262
Soils and groundwater reclamation expenditures [a]	(€ thousand)	336,525	197,468	193,977
- current spending		271,582	182,112	186,014
- investments		64,943	15,356	7,963

(a) The figure is part of the environmental expenditures reported in the table “The environmental management system”.

In Italy Eni operates in 17 Sites of National Interest where a reclamation process is in progress and the number of procedures opened in the Country as a whole exceeds 900; clearly there is extreme variability in the scale of the issues related to the reclamation activities, which involve the refineries, petrochemicals and well areas as well as fuel retailers.
Reclamation activities have mainly been carried out through Syndial, a company dedicated to the reclamation and remediation of contaminated sites following decommissioning (63% of total expenditure in 2013) followed by R&M (22%) and the Chemicals sector (12%).
Total spending on reclamation in 2013 is broadly in line with that for the previous year, which was significantly lower than 2011 due to delays in granting some preliminary authorizations by the Public Administration, which had an impact on Syndial’s activities.
In 2013, activities focused on the ongoing restoration of major sites (Gela, Priolo, Assemini and Porto Marghera). Syndial started to apply sustainable remediation principles (using the in-house application “Sustainable Assessment Framework”) for the appraisal of the projects in Ravenna, Brindisi and Porto Torres. An example of application of the sustainability principles that all business units are moving towards is the start of solar electricity production from the EniPower plant built on the former phosphogypsum landfill at Gela, allowing considerable savings of resources and a reduction in carbon dioxide emissions of approximately 4,500 tonnes /year.
The commitment of R&M continued concearning the management of safety measures and reclamation in the marketing sector (fuel sales outlets) as well as in the industrial sector. The most significant activities included the completion of the installation of drainage systems in Taranto as well as the reclamation works in the area of the refinery tank park.
In the chemicals sector, reclamation activities continued on sites with approved projects; in particular, Sarroch tested the IWS (In Well Stripping) technology as the first stage of the aquifer reclamation project, which will involve the reduction of discharges into the surface water. At the Ferrara plant, the process of reclamation of the surface soil matrix and the wetting water ended positively: this is one of the most important projects and is unique in Italy in terms of the extension of the reclamation area inside a petrochemical plant.
E&P is committed to reclamation both in Italy and abroad where, in addition to the conclusion of activities at the site of Abu-Rudeis/Belayim (Egypt) and follow-up remediation of two “burning pits” in Congo, a project to run pilot trials with “Thermal Desorption technology and Three Phase Recovery” is underway in Nigeria to provide a more sustainable alternative, with the widespread adoption of “enhanced natural attenuation” in the Region.
Regarding the production of waste from reclamation, 95% of the volume produced refers to polluted groundwater, a slight increase compared to the previous year due to the peak flow from TAF (groundwater treatment) plants managed primarily by Syndial which undertook recovery initiatives like the production of demi water downstream of the TAF facility in Assemini for reuse within the production cycle or the passage of treated water from the TAF in Brindisi to EniPower for industrial use.
The project in Priolo is also expected to be completed; this involves placing a portion of the treated water from the TAF in the industrial water network used for production activities on the multi-company site (the remainder will be used in the groundwater barrier below the ERG/MED area) as well as energy optimization of TAF facilities, in order to improve the processes and reduce the consumption of raw materials and energy. The operative TAF in Sicily can handle highly contaminated groundwater with an efficiency level in terms of reclamation higher than anywhere else in the world, based on the quality of the water resulting from the reclamation.

Protection of water resources and biodiversity

		2011	2012	2013
Total water withdrawals	(Mm^3)	2,577.98	2,359.21	2,206.36
- of which sea water		2,375.83	2,142.82	2,002.22
- of which fresh water		187.6	191.4	185.696
- of which salt/salty water taken from underground or surface sources		14.55	24.59	18.44
Water withdrawals/kWheq produced (EniPower)	(m^3/kWheq)	0.0136	0.0119	0.0166
Water withdrawals/crude and semi-finished products processing (R&M)	(m^3/ton)	31.03	25.43	19.98
Total production and/or process water extracted (E&P) [a]	(Mm^3)	58.16	61.17	61.32
- of which injected into deep wells for disposal purposes		-	9.44	13.40
- of which re-injected		25.18	20.82	20.02
- of which discharged into surface water body or into sea		30.47	26.94	24.60
- of which sent to evaporation ponds		2.51	3.97	3.30
Production water re-injected including the one injected into deep wells for disposal purposes/Total production water	(%)	43	49	55
TAF treated groundwater used in the production cycle (Syndial)	(Mm^3)	-	0.47	0.68
Concentration of oil in production water	(mg/l)	13.5	9.61	7.79
Total recycled and/or reused water	(Mm^3)	519.43	519.93	735.89
Percentage of fresh water reused	(%)	73.5	73.1	79.9
Fresh water discharged	(Mm^3)	131.6	130.62	138.28
Sea water discharged		1,866.96	1,931.74	1,823.73
Water resources and drains expenditures and investments [b]	(€ thousand)	76,298	83,415	51,337
- current spending		46,167	39,808	37,159
- investments		30,131	43,607	14,178
Expenditures on landscape protection and ecosystems and biodiversity conservation [b]		11,094	5,863	5,925

(a) Since 2012, the amount includes the contribution of production water injected into deep wells for disposal purposes.
(b) The figure is part of the environmental expenditures and investments reported in the table "The environmental management system".

In 2013 there was a reduction in total water extraction compared to 2012 of 6.5% (equal to about -153M m^3) mainly due to the decrease in sea water extraction in the refining sector (where the Gela Refinery alone reduced withdrawals of seawater by more than 137Mm^3 due to plant shutdowns).
The fresh water withdrawn, representing 8% of the total water resources used, decreased compared to 2012 (down 3%), due to a decline recorded by the E&P sector (where activities of the Libyan Abu Attifel, El Feel and Wafa fields were stopped or reduced) and Other Activities (where the ethylchloride plant was shut down at the Assemini site). The parameter is also in decline in the sectors R&M (down 2.9%, amounting to approximately -0.5Mm^3) and G&P (down 7%, amounting to about -2Mm^3).
The percentage of reused fresh water increased overall compared to 2012, reaching almost 80%.
There was further improvement in the performance relating to production water in the E&P sector, with a percentage of re-injection rising to 54% (the best result ever, an increase of more than 10% compared to 2012). Performance was positively influenced by the completion in late 2012 of the Belayim project in Egypt, with a re-injection of 99.5% (equal to 27,265 cubic meters/day).
The concentration of hydrocarbons in the production water fell compared to 2012 (down 18.9%).
Syndial increased the quantity of groundwater treated through TAF and used subsequently in its own production cycles (up 45.9% compared to 2012).
Eni is committed to integrating management of biodiversity and ecosystem services in all its operational enterprises throughout the project life cycle, in particular in the upstream sector. In order to achieve the goal of defining integrated action plans for biodiversity and ecosystem services in 20% of the Assessment Units exposed to biodiversity risk in 2012, specific Biodiversity Risk Assessment and Action Plans will be implemented to identify, assess and mitigate the potential impacts associated with E&P activities in any operating environment. Currently, the sites involved are DIME (Val d'Agri), Agip Oil Ecuador (Villano), KPO (Karachaganak), Eni Congo (M'Boundi), Eni Pakistan (Bhit and Badhra) and Eni US Operating Company (Nikaitchuq). The new exploratory and development projects will continue to ensure the proper integration of the issues of biodiversity and ecosystem services in pre-ESHIA.
Internationally, Eni's commitment will continue in WBCSD, BSR, IPIECA and OGP with the chairmanship of the Biodiversity Working Group (BESWG). Moreover, membership of the Proteus partnership was renewed; this is an initiative promoted by UNEP-WCMC with the private sector that provides access to both the World Database on Protected Areas (WDPA) and the Integrated Biodiversity Assessment Tool (IBAT).

Oil spills

		2011	2012	2013
Total number of oil spills (>1 barrel) [a]	(number)	418	329	386
Total volume of oil spills (>1 barrel) [a]	(barrels)	14,952	12,428	7,903
- of which from sabotage and terrorism		7,657	8,669	6,002
- of which due to operations		7,295	3,759	1,901
Spill prevention expenditures and investments [b]	(€ thousand)	40,530	63,771	51,141
- current spending		4,252	8,354	10,054
- investments		36,278	55,417	41,087

(a) In 2011, with the exception of the E&P sector, oil spills of less than one barrel were included.
(b) The figure is part of the environmental spending and investments shown in the statement "The environmental management system".

In 2013 the total number of oil spills increased (up 17.3%), while the volume spilled decreased significantly (down 36.4%), both for spills from acts of sabotage and terrorism (down 30.8%) and from operations (down 49.4%).
As in previous years (except for 2011, characterized by one spill in the E&C sector of over 4,000 barrels in Algeria), the total figure for 2013 is determined essentially by the performance of the E&P sector (which is responsible for more than 95% of the events and more than 90% of the volume spilled). In 2013, E&P, despite an increase in the total number of oil spills, recorded a decline in the volume spilled (down 36.9% compared to 2012) and an improvement in the index for the volume spilled from operational accidents per million boe produced (down 38% compared to 2012). In particular, in 2013 the target scheduled for 2016 for reducing the index of boe spilled per Mboe produced was achieved ahead of time. In E&P over 60% of the volume of oil spills from operational accidents in 2013 is attributable to activities in Nigeria, as well as all the spills from acts of sabotage and terrorism, with the exception of one event that occurred in Egypt.
Eni's total spending on spill prevention in 2013 remains above €50 million.

Waste from production activities

		2011	2012	2013
Waste from production activities	(tons)	1,309,135	1,378,385	1,599,997
- of which from drilling activities		388,539	342,026	366,440
Hazardous waste from production activities		476,552	365,695	374,421
Non-hazardous waste from production activities		832,582	1,012,690	1,225,576
Waste from production activities recovered and /or recycled		232,884	315,880	180,825
- of which hazardous		73,174	67,203	47,566
- of which non-hazardous		159,710	248,677	133,259
Waste from production activities disposed		982,423	1,038,709	1,401,739
- of which hazardous		326,495	278,812	316,765
- of which non-hazardous		655,927	759,897	1,084,974
Waste from drilling activities / drilled meters	(tons/m)	0.340	0.512	0.584
Waste management expenditures and investments [a]	(€ thousand)	96,263	92,113	95,422
- current spending		83,403	91,341	95,074
- investments		12,860	772	348

(a) The figure is part of the environmental expenditures and investments reported in the table "The environmental management system".

Waste from production activities in 2013 (about 1.6 million tonnes) increased by 16.1% compared to the previous year (up 2.4% hazardous waste and up 21% non-hazardous waste) due to the contribution of all the businesses, with the sole exception of Other Activities. In particular, the rising trend is attributable to Engineering & Construction (up about 130,000 tonnes), G&P (up 37,000 tonnes), R&M (up about 32,000 tonnes) and E&P (up about 19,000 tonnes). As better shown below, the increase or decrease in the volume of waste reflects the frequency of scheduled maintenance and the opening and operation of work sites.
In the Engineering & Construction sector the rising trend, for hazardous waste, is related to increased offshore drilling activity and, for non-hazardous waste, to increased onshore construction activities, with particular reference to the "Shah Plant and Pipeline" project.
In G&P non-hazardous waste increased as a result of construction activities at various plants (over 25,000 tonnes at Bolgiano for revamping, over 7,000 tonnes at Mantua for decommissioning of thermal power stations and more than 5,000 tonnes at Ferrera Erbognone for the arrangement of the area for external companies and the construction of a new warehouse).
R&M was affected by the special five-year maintenance tasks performed in the Taranto Refinery, where the quantities of non-hazardous waste products more than doubled, exceeding 40,000 tonnes.
The increase in waste production in the E&P sector solely relates to non-hazardous waste (from increases recorded in Egypt at the subsidiaries Petrobel and Agiba and in Italy due to the increase of production waters stored and disposed of as waste and increasing onshore activities compared to 2012). Hazardous waste conversely decreased due to the completion of construction activities in Algeria at the MLE CTH field and the Bolashak site in Kazakhstan.
The volume sent for recovery from production activities in 2013 decreased by 42.8% compared to 2012; the trend consolidates a reduction in both hazardous waste (down 29.2%) and non-hazardous waste (down 46.4%) and is primarily attributable to the E&P sector where the quantities were considerably reduced (down approx. 134,000 tonnes), likewise in relation to the conclusion of the construction activities in the Bolashak site.