

Responsible and World Class processes⁽¹⁾

Fiat Group's commitment to environmental stewardship and the conservation of natural resources includes not only our efforts to enhance sustainable mobility solutions, but also our focus on minimizing the impact of manufacturing processes. The measurement of our environmental footprint and the pursuit of continuous improvement in environmental performance are integral parts of the Group's industrial strategy.

These pursuits are essential to generating value over time for our stakeholders and to the viability of the company in the global marketplace.

World Class Manufacturing and process certification

At Fiat Group, one of our key commitments is to reduce our environmental impact during the production phase.

Proof of this is the expansion of World Class Manufacturing (WCM), a system that has been in place for several years and now **covers 97%⁽²⁾ of our plants**.

WCM is a structured, rigorous and integrated methodology covering every aspect of the entire organization, from safety to the environment, from maintenance to logistics and quality. The WCM system is aimed first and foremost at improving production processes to ensure product quality with the aim of meeting or exceeding customer expectations.

At year-end 2013, a total of **121 Fiat Group plants** were part of the WCM program: 26 have achieved bronze level, seven silver and four **the gold level (Bielsko Biala** engine and transmission plant in Poland, achieved in 2012, and assembly and stamping plants of **Tychy** in Poland, **Tofas** in Turkey and **Pomigliano** in Italy).

The projects developed within WCM are designed to achieve the broadest engagement of employees and to systematically reduce losses and waste, ultimately reaching zero accidents, zero waste, zero breakdowns and zero inventories.

The WCM system reflects our commitment to environmental and sustainability issues. WCM, and in particular the Environment pillar, is an integral part of the Group's Environmental Management System. This pillar is dedicated to the development of instruments and methods that provide support in reaching targets to curb the environmental impact of plants while aiming to cut waste and optimize energy use. The Energy sub-pillar, included under the Environment pillar, plays a key role in improving energy performance through specific projects targeted at eliminating inefficient energy use.

In 2013, about 2,400 specific energy projects were implemented, resulting in approx. 180,000 fewer tons of CO₂ emissions. The total number of roughly 3,000 **environmental projects** started during the year resulted in cost **savings of €70 million**.⁽³⁾

⁽¹⁾ In the tables with absolute values in this chapter the data relative to 2011 include Chrysler Group for the full year. The data relative to 2010 have been restated to include Chrysler Group and to exclude companies demerged into CNH Industrial S.p.A.

⁽²⁾ Percentage based on the total manufacturing cost base.

⁽³⁾ Data is prorated to include carry-over from projects launched in 2012.

To manage and minimize environmental and safety risks, a preventive and proactive approach is employed. In the event of an accident, WCM calls for a rigorous analysis of the causes and application of the most appropriate procedures to reduce the risk of recurrence. Moreover, in the event of an environmental accident or a natural disaster (e.g., hurricane, flood, earthquake, fire) all plants are covered under a contingency plan whose purpose is to limit the event's environmental impact, as well as to preserve the integrity of physical assets, the continuity of operations and limit financial implications in general.

The success of WCM is highly dependent on the participation of employees, who are periodically involved in targeted training programs. All Group plant employees worldwide are encouraged to make suggestions, each of which is assessed for potential application to be transformed in a project. In 2013, Fiat Group's plant employees submitted a total of **1.3 million proposals for improving processes**, representing an average of 15 suggestions per employee.

Furthermore, an essential contribution to extending the best processes to all plants derives from the **sharing of innovative best practice projects**, with approximately **10,100** approved and disseminated across the Group's plants through 2013.

WCM tools and methods can also be applied to other activities not strictly related to production. Fiat Group is transferring these principles into its Logistics, Manufacturing Engineering and Design activities as well, to integrate this approach in other areas of the company.

Moreover, we are committed to implement WCM also among suppliers. The **engagement of plants and suppliers enables** the most relevant **environmental impacts to be minimized** as an integral part of the daily management of production processes along the entire value chain. This entails reducing greenhouse gas emissions, conserving energy and raw materials, and reducing water consumption and waste generation, by maximizing reuse and recycling.

WorkPlace Integration (WPI) – a new way of designing the process

In production system development, the Group has refined the design and workstation improvement phase at plants through the use of WPI.

One of the strengths of WPI is that the design phase begins earlier; in fact, studying production cycles already starts during the development of the new model. Thus, the product and process are developed to optimize the technical and methodological synergies, which results in many fewer changes later on and has a positive effect on station ergonomics and costs.

For the first time, a project of this nature brings together process engineers, quality specialists, research and development managers and plant personnel to plan the process from the very beginning. The activities are carried out in the WPI Room, an area equipped with the technology needed for design and simulation. The assembly line personnel are involved in organizing their future workstation, proposing improvements based on their direct experience at the plant and giving suggestions to the planners who create the new workstation layouts.

First developed at the Pomigliano (Italy) plant and then spread to all Group plants with new model launches, WPI applies all WCM principles. **The workstation is centered around human beings, making it safe, ergonomically sound, comfortable and functional for the designated worker's job.**

Naturally, environmental sustainability aspects are also included. In order to ensure that **the impact is kept to a minimum**, WPI works by **reducing disposable packaging, hazardous chemical products and the generation of waste, as well as by aiming to eliminate energy waste**. During each individual phase, quality aspects are analyzed, introducing systems geared toward avoiding human error in the process.

This way, the workstation is efficient and organized from the very start, consistent with the most sophisticated concepts of logistics engineering and material flow management, and is aligned with the best technical solutions for processes and products.

At the same time, as an integral part of our management of industrial processes, we are committed to implementing and maintaining our **Environmental Management System (EMS)** at all of our production plants worldwide, compliant with the ISO 14001 standard. At year-end 2013, **133 plants, representing 100% of industrial revenues⁽⁴⁾ in 2012 scope and 99% of manufacturing employees⁽⁵⁾ were ISO 14001 certified.** The plants still awaiting certification have adopted an EMS which complies with the ISO 14001 standard. These plants are regularly audited by the central Environment, Health and Safety (EHS) unit, which verifies compliance prior to third party audits. By the end of 2014, all Group plants operating worldwide in 2012 will be ISO 14001 certified.

With respect to the **Energy Management System**, efforts continued in 2013 to integrate an Energy Management System compliant to the **ISO 50001** standard into the Environmental Management System. At year-end 2013, 43 Group plants were certified, representing approximately 36% of the Group's total energy consumption. By 2014, all of the Group's main plants, accounting for more than 90% of total energy consumption, will be ISO 50001 certified.

An Environmental Management System certified by accredited third parties, associated with WCM methodologies and tools, ensures the achievement of a steady and continuous reduction in the impact of manufacturing processes, as well as achievement of environmental objectives.

Both WCM and the management systems are based on the **Group's Environmental Guidelines, which reflect our commitment to being a responsible environmental steward.**

These guidelines apply to all employees worldwide. They specify the correct approach to environmental issues and provide clear instructions on setting and updating environmental objectives, developing new products, and conducting daily activities around the globe. While implementing these Guidelines, the Group complies with all relevant environmental legislation and regulations and constantly strives to outperform them.

Action plans and related short-, mid-, and long-term projects aimed at reducing the environmental footprint and ensuring financial sustainability are in place at our plants. In 2013, **expenditures and investments for the environment amounted to almost €100 million,⁽⁶⁾** clearly demonstrating the Group's commitment to environmental protection.

⁽⁴⁾ Industrial revenues are those attributable to the activity of plants directly controlled by the Group.

⁽⁵⁾ Manufacturing employees are those directly and indirectly involved in manufacturing processes.

⁽⁶⁾ €96.67 million, of which 65.8% for waste disposal, emissions treatment, and remediation costs, and 34.2% for prevention and environmental management costs.

Organization, environmental performance and monitoring systems

In the Group, environmental protection is managed through its **Environment, Health and Safety** (EHS) organization. Each company relies on its own department responsible for environment, health and safety topics, both centrally and at the plant level. Company EHS managers are responsible for overseeing facility environmental activities and direct capital investments dedicated to specific action plans. Moreover, they are in charge of monitoring national and local legislation, as well as rules and regulations related to the environment. They ensure that senior management and plant environmental professionals understand the potential impact of new or revised policies on their operations, and also conduct compliance audits.

Meetings are held regularly to coordinate Group activities. This enables EHS managers to discuss results, share best practices, and carry out benchmark comparisons against main competitors in key areas, in order to define new actions. The **Environmental Plan** sets both annual and long-term targets for each company relative to the principal areas of environmental focus: atmospheric emissions, water and waste. The Plan is monitored on a monthly basis.

A **dedicated IT platform** ensures that environmental professionals receive regular updates and remain continuously in contact with each other. This platform provides access to training materials and documents on specific environmental areas (general and operational procedures, guidelines, reporting, manuals, etc.), as well as to the Standard Aggregation Data (SAD) system and other applications used for reporting environmental performance data of individual plants, and for comparing plants within the same operating segment.

The continuous monitoring of environmental performance indicators is the main tool available to management to determine if plants are operating properly, to plan new courses of action, to realign programs and interventions, and to set new and more challenging targets.

In 2012, Fiat Group structured the monitoring process to track environmental performance not only at the plant and corporate levels, but also across operating regions. This was a result of the Group's new organizational structure, and was achieved by means of the SAD application⁽¹⁾. The data management system enables EHS managers to compare and contrast the environmental performance of standardized processes, enhancing the likelihood of internal benchmarking and ensuring that opportunities for improvement within the Group are promptly identified. For consistency with financial information and organizational structure, as well as with the data and targets published in the Group's 2012 Sustainability Report, the term "Mass-Market and Premium Brand assembly and stamping" refers to 15 assembly and stamping facilities of Fiat Group Automobiles (FGA) and 18 of Chrysler Group (CG). "Mass-Market and Premium Brand engines and transmissions" includes nine engine and transmission facilities of FGA and nine of CG, previously included in "Chrysler others." "Mass-Market and Premium Brand casting" and "Mass-Market and Premium Brand others" refer respectively to two and to four facilities of CG previously included in "Chrysler others." "Mass-Market and Premium Brands" refers to the data of these 57 FGA and Chrysler facilities.

Like last year, this year's Sustainability Report presents normalized environmental performance indicators as well as the absolute values directly correlated to production volumes, in order to ensure data comparability from year to year and allow the evaluation of operational trends. Due to the variety of production lines within the company (vehicles, engines, components, etc.), it is not possible to present normalized data at the Group level. In addition, within certain companies (for example, Teksid), different production lines require varied normalization parameters. The only normalized data documented in this Report are for Mass-Market and Premium Brand assembly and stamping facilities (which account for more than half of the impacts) for energy, emissions, water and waste. For information on the performance and targets of each Group company, see the Appendix section.

⁽¹⁾ In use at all Fiat Group plants starting in 2012.

Environmental training

Investment in human capital at all organizational levels is a key driver for improving the Group's environmental performance. Competence, knowledge and motivation are essential attributes to ensure a deeply embedded environmental culture throughout the company. For this reason, a variety of methods are used to spread environmental know-how, promote awareness and encourage action planning throughout the company. The training of specialized personnel working within the Environmental Management System (EMS) continued in 2013. Seminars conducted by internal environmental professionals and online courses provided approximately **220,000 hours of environmental training to 71,500 individuals**. Training activities focused on prevention, management of environmental aspects, Environmental Management Systems in accordance with the ISO 14001 standard, and Energy Management Systems in conformance with ISO 50001. Additionally, special training was provided to increase employee understanding of their individual impact on the environment.

Internal employee websites dedicated to Environment, Health and Safety, and internal periodical newsletters provide information on policies, procedures, organizational responsibilities, publications, best practices, regulatory information and company requirements. The websites also provide links to external environmental internet sites and IT applications used in the management of environmental programs and training.

Energy consumption

Consuming energy responsibly is the premise behind Fiat Group's commitment to researching technologies that consume less energy as well as employing energy solutions with an ever-decreasing impact on the environment. This commitment is embodied by the World Class Manufacturing (WCM) program that dedicated a sub-pillar to energy in 2010 for improving the ability to identify and implement energy reduction measures and increase efficiency.

Primarily because of increased production volumes in the NAFTA region combined with adverse weather conditions in that area throughout the year, total energy consumption compared with the previous year increased slightly. Despite this, an overall downward trend is seen compared with the baseline year of 2010.

The factors contributing to the increase in energy use were mitigated by a series of interventions geared toward improving the energy efficiency of systems and equipment. This activity included overhauling or refurbishing the equipment in favor of more technologically advanced and efficient solutions that **saved approximately 600 TJ and averted 55,000 tons of CO₂**.

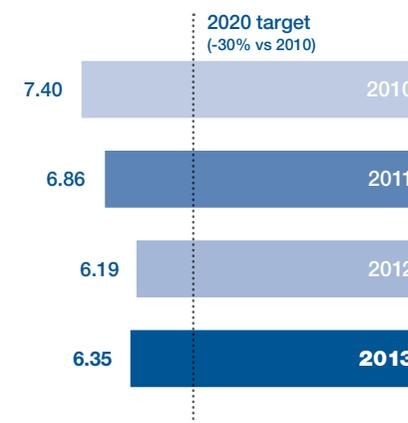
Direct and indirect energy consumption

Fiat Group worldwide (TJ)

	2013	2012	2011	2010
Plants	142	144	150	148
Electricity	21,272	20,520	21,274	21,182
Natural gas	20,957	18,278	19,253	19,440
Other fuels	1,234	1,322	1,617	1,395
Other energy sources	4,860	5,572	6,731	7,705
Total energy consumption	48,322	45,692	48,875	49,722

Direct and indirect energy consumption per unit of production

Mass-Market and Premium Brand assembly and stamping worldwide (GJ per vehicle produced)



A major contribution also came from organizational measures, including process redesign, improving the use of plant operating capacity, operational changes and changing employee behavior through heightened energy awareness. These activities resulted in total **savings of about 1,400 TJ and avoidance of 125,000 tons of CO₂**.

At Mass-Market and Premium Brand assembly and stamping plants, the **energy consumption per vehicle produced** showed a small increase of 2.6% compared with last year, from 6.19 GJ per vehicle produced in 2012 to 6.35 GJ per vehicle produced⁽¹⁾. This was principally due to the factors mentioned previously (increased production volumes in NAFTA region and adverse weather conditions). As with total energy, energy per vehicle produced has also shown an overall downward trend compared with the baseline year of 2010 (-14.2%).

⁽¹⁾ Number of vehicles produced and plant list are confidential for competitive reasons and therefore are not publicly published.

CO₂ and other emissions

Fiat Group's engagement in the fight against climate change is demonstrated by the general downward trend in CO₂ emissions from our production processes compared with the 2010 baseline. As with energy, the 2013 CO₂ results were negatively affected by the increased production volumes in the NAFTA region and the adverse weather conditions.

Consequently, in 2013, **total CO₂ emissions increased by 5.4%** at Group plants, for a total of about 4 million tons, despite the **2,400 energy projects** that were launched in 2013, which **saved €62 million⁽¹⁾**.

The **CO₂ emissions per vehicle produced** at the Mass-Market and Premium Brand plants **decreased 15.5% in the last four years**, falling from 0.612 tons per vehicle produced in 2010 to 0.517 tons per vehicle produced⁽²⁾.

Direct and indirect CO₂ emissions

Fiat Group worldwide (thousands of tons of CO₂)

	2013	2012	2011	2010
Plants	142	144	150	148
Direct emissions	1,198	1,069	1,150	1,140
Indirect emissions	2,980	2,896	3,046	3,243
Total CO₂ emissions	4,178	3,965	4,196	4,383

In 2013, the Group continued to use renewable energy sources, slightly increasing the percentages reached by each company. In Europe, the vast majority of renewable energy purchased by the Group is certified by the supplier, while on the South American market electricity purchased is certified as coming almost entirely from hydroelectric sources. Furthermore, within the Group there are some plants that take advantage of solar energy to produce renewable energy for electricity or heating.

Total energy from **renewable energies** used in Group production processes covered **20.9%** of the total consumption, excluding Chrysler Group, and 9.7% of total energy consumed, including Chrysler Group.

Direct and indirect CO₂ emissions per unit of production

Mass-Market and Premium Brand assembly and stamping worldwide (tons of CO₂ per vehicle produced)



⁽¹⁾ Data is prorated to also include carry-over from projects launched in 2012.

⁽²⁾ Number of vehicles produced and plant list are confidential for competitive reasons and therefore are not publicly published.

Paint Process Energy Savings at the Sterling Heights Assembly Plant (SHAP)

Major energy savings are represented by the new paint shop at SHAP in the US. Painting demands more energy than any other stage of the production process in the automotive industry. In paint shops, the paint booth in particular consumes the most energy, since it requires around 100,000 cubic meters of air per minute at a specific temperature and humidity. Booths consume natural gas, electricity and water in order to meet stringent process control requirements.

SHAP's new paint shop covers approximately 100,000 square meters and was conceived to guarantee high energy efficiency, using a "cascading air / recirculating air" process to significantly reduce energy and water usage, designed to recirculate 90% of the air.

This innovation provides **annual energy savings of approximately €1.3 million, avoiding approximately 24,000 tons of potential CO₂ emissions** through energy reduction, while also resulting in a significant reduction in water use.

Participation in emissions trading programs

In 2013, the Group only had five directly-owned power generation plants that qualified for the European Emissions Trading System (EU-ETS), under ETS Directive (2003/87/CE), all of them in Italy. These were located at the Italian manufacturing sites of FGA engines and transmissions in Pratola Serra and Grugliasco, Magneti Marelli in Modugno, Teksid in Carmagnola and Ferrari in Maranello. These five sites in 2013 represented approx. 5.3% of the Group's CO₂ direct emissions, for a total of 63,112 tons of CO₂.

Nitrogen and sulfur oxides (NO_x and SO_x) and dust

NO_x emissions increased as a result of major consumption of natural gas, while SO_x emissions decreased in 2013 as a result of the decrease in direct fuel consumption and increased use of cleaner fuels.⁽³⁾ Dust slightly increased.

Direct emissions of NO_x, SO_x and Dust

Fiat Group worldwide (tons)

	2013	2012	2011	2010
Plants	142	144	150	148
NO _x	1,396	1,235	1,335	1,349
SO _x	172	189	249	200
Dust	74	70	77	72

⁽³⁾ Estimated emissions based on direct fuel consumption.

Volatil Organic Compounds (VOC)

VOC are chemical compounds that may have a potential and indirect impact on climate change, and contribute to the formation of ground level ozone and smog.

For many years, Fiat Group has introduced important technical and operational developments in its paint operations such as more efficient paint application and using paints that contain less solvent in order to progressively reduce the associated VOC emissions⁽⁴⁾.

Very substantial reductions have been achieved in Mass-Market and Premium Brand plants, **with an average of approximately 28.0 g/m² of VOC in 2013 compared with an average of approximately 32.1 g/m² in 2010 (-12.8%) and 65.4 in 2007⁽⁵⁾ (-57.2%).**

Since Mass-Market and Premium Brand assembly and stamping plants represent more than 95% of VOC emissions, the average of all Group plants worldwide shows similar results and trends.

Presence of Ozone Depleting Substances (ODS) in equipment

Some equipment used for cooling, air conditioning and climate control contains ODS which are potentially harmful to the ozone layer, the part of the upper atmosphere that protects the earth from ultraviolet rays. In the event of an accident, these substances may leak and contribute to ozone layer depletion. As a consequence, Fiat Group believes that constant monitoring of this equipment is essential to prevent unexpected ODS leakage. **No leaks** of these substances **were reported during 2013**.

In addition, following an inventory of plants and equipment containing ODS, an action plan was developed in 2010 to specify measures to replace these substances by 2014 at all plants worldwide. Chrysler Group was included in the inventory for the first time in 2012, and committed to eliminate ODS as equipment is replaced. These substances will be substituted with more environmentally compatible gases and/or alternative substances. In 2013, ODS in equipment at Group plants worldwide was reduced by 6.4% compared with 2012.

Equipment containing PCBs and PCTs

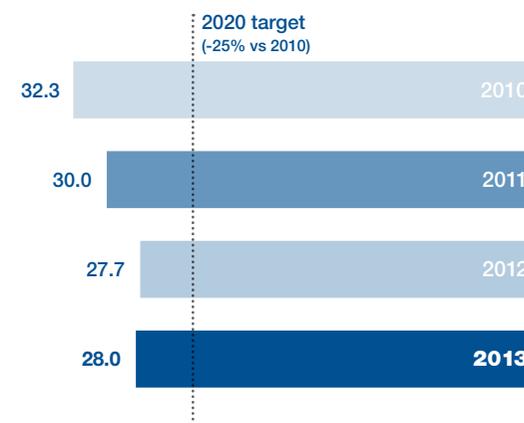
Certain electrical equipment (e.g., transformers) uses cooling liquids containing Polychlorinated Biphenyls (PCBs) and Polychlorinated Terphenyls (PCTs). These substances are classified as hazardous and are subject to restrictions relating to their use, production and sale, although this varies from country to country. For a number of years, Fiat Group has worked toward the progressive elimination of these substances ahead of regulatory deadlines. As a result of the latest actions implemented, **as of 2011 PCBs and PCTs are no longer present at Group plants**.

External noise

With the objective of minimizing noise at our plants to the greatest extent possible, Fiat Group continually monitors noise emitted into the external environment. For this purpose, the Group implements the policies provided by the **Noise Management Guidelines**, which are in effect across all our plants.

Emissions of VOC

Mass-Market and Premium Brand assembly and stamping plants worldwide (g/m²)



⁽⁴⁾ VOC emissions are calculated with the mass balance equation, according to the "Operating Guideline for monitoring environmental KPIs – VOC" and apply to the entire Fiat Group' paint shops.

⁽⁵⁾ 2007 scope differs from 2013 as Chrysler Group LLC was included starting in 2010.

Water management

Water scarcity is one of the primary challenges facing governments, businesses and individuals in many parts of the world today. Because water scarcity also exposes companies to business risk, it is a factor that needs to be managed rapidly and effectively.

Fiat Group sees water as one of the most important natural resources to be protected, so much so that it has drawn up **Water Management Guidelines** that apply to all Group companies. These provide the principles for sustainable management of the entire water cycle and place greater emphasis on reducing consumption of water resources, especially in water-stressed regions where water is a limited resource and its availability is critical to the surrounding environment and population.

We periodically map the availability of water resources around the world, correlating the quantity of water available with the quantity consumed in each region.

Areas where the Group is present are subsequently overlaid. This risk assessment identified 13 plants located in areas where water is considered a limited resource.⁽¹⁾ Accordingly, these plants took appropriate measures to improve water reuse and recycling.

Water withdrawal in water-stressed regions

Fiat Group worldwide (thousands of m³)

Company and plant location	Base line year	Fresh water consumption of base line year	Fresh water consumption in 2013	Percentage variation	Absolute variation
Fiat Group Automobiles – Tychy (Poland)	2009	627	451	(28.1)	(176)
Fiat Group Automobiles – Tychy Dies Shop (Poland)	2010	6	2	(61.2)	(4)
FGA Engines and Transmissions – Bielsko Biala SDE (Poland)	2009	28	18	(36.9)	(10)
FGA Engines and Transmissions – Bielsko Biala Twin Air (Poland)	2011	7	7	6.0	-
Magneti Marelli – Wadeville EXH (South Africa)	2009	7	1	(83.0)	(6)
Magneti Marelli – Sosnowiec Ergom PCMA (Poland)	2009	29	5	(84.1)	(24)
Magneti Marelli – Sosnowiec ER.SI. PCMA (Poland)	2009	47	29	(37.6)	(18)
Magneti Marelli – Sosnowiec AL (Poland)	2009	102	68	(33.5)	(34)
Magneti Marelli – Sosnowiec EXH (Poland)	2009	0	3	561.5	2
Magneti Marelli – Bielsko Biala ShA (Poland)	2009	6	6	7.1	-
Magneti Marelli – Bielsko Biala SS (Poland)	2009	11	9	(16.5)	(2)
Comau – Shikrapur (India)	2009	6	6	14.7	1
Teksid – Skoczow (Poland)	2009	195	183	(6.2)	(12)
Total thousands of m³		1,071	789	(26.3)	(282)

⁽¹⁾ Water availability <1,700 m³/(person per year). Source: Food and Agriculture Organization's (FAO) global information system.

As a result of improvements in water cycle management and measures taken to reuse water in industrial processes, in 2013 **Fiat Group reduced overall water consumption by 3.6% compared with 2012** (from 25.9 to 24.9 million m³) **and by 27.1% compared with 2010** (from 34.2 to 24.9 million m³).

Water withdrawal and discharge

Fiat Group worldwide (million of m³)

	2013	2012	2011	2010
Plants	142	144	150	148
Total water withdrawal	24.9	25.9	29.9	34.2
Total water discharge	16.2	17.3	18.8	22.4

Water recycling index

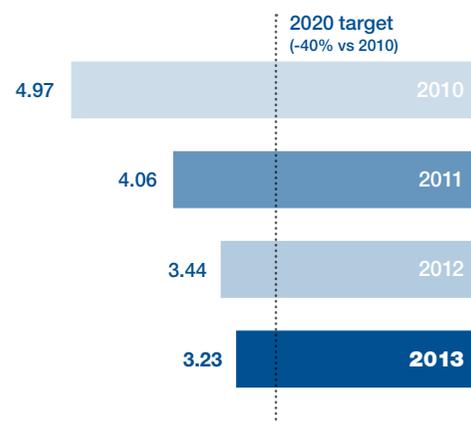
Fiat Group worldwide (million of m³)

	2013	2012
Total water requirement	2,155.6	2,064.7
of which covered by recycling	2,130.6	2,038.9
of which water withdrawal	24.9	25.9
Recycling index⁽²⁾ (%)	98.8	98.8

Water recycling resulted in **2.1 billion m³ of water saved**, equivalent to the **amount of water that flows over Niagara Falls over 13 consecutive days**.

Water withdrawal per unit of production

Mass-Market and Premium Brand assembly and stamping worldwide (m³ per vehicle produced)



In 2013, all Mass-Market and Premium Brand assembly and stamping plants currently in operation reduced **water consumption per vehicle produced by an additional 6.1% compared with the previous year (a 34.9% reduction compared with 2010)**. The reduction in water consumption without a corresponding action with respect to pollutants would cause an increase in the concentration of the latter and a decrease in the quality of discharge water. For this reason, Fiat Group pairs reducing consumption of water resources with optimizing wastewater treatment processes and constant monitoring of the relevant parameters. For 2014, each plant aims to maintain this discharge well under mandatory limits. In 2013, analysis conducted on water discharged from Fiat Group plants worldwide revealed levels of **Chemical Oxygen Demand (COD) up to 80% below regulatory requirements**, while levels of **Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) were up to 97% and 91% below required limits**, respectively.

⁽²⁾ The recycling index is calculated on the basis of total water requirement, which is the sum of water withdrawn and water recirculated in the plants.

The Group regularly measures and analyzes the presence in our industrial processes worldwide of certain **heavy metals** which are considered most material. In 2013, **nickel (Ni)** and **zinc (Zn)** were analyzed, following 2012's analysis of **lead (Pb)**, **cadmium (Cd)** and **copper (Cu)**. These analyses provide a comprehensive view of Fiat Group's overall impact on water quality. Specific objectives were set for levels well below legal limits.

Of 142 total plants active in 2013, 132, which generate 99.9% of the total amount of wastewater, were serviced by either an internal or external wastewater treatment system. The manufacturing activities of the remaining 10 plants generate wastewater classifiable as domestic and/or not requiring treatment.

No significant spills were reported for the Group in 2013.

Water resources significantly affected⁽³⁾ by water withdrawal and/or discharge at plants

Fiat Group worldwide

Company and plant location	Water source (name and size in m ³ /year)	Use	Protected water body	High biodiversity value water body ⁽⁴⁾	Water withdrawal ⁽⁵⁾	Water discharges ⁽⁵⁾
Teksid – Carmagnola (Italy)	Gora del Naviglio River 3.5 million	Process water effluent	no	no	no	23%

Saving water in Pernambuco, Brazil

The commitment to conserve water will also be applied at the new plant that Fiat Group will open in Goiana, in Pernambuco, one of the north-east states in Brazil, an area that has been drought-stricken for years. Water distribution and wastewater treatment in Pernambuco is managed by Compesa, (Companhia Pernambucana de Saneamento) which has set more stringent limits on water consumption for industrial activities than other Brazilian regulations.

When installing a new plant in such a sensitive area, special care must be dedicated to water cycle optimization. Particular attention was dedicated to designing water-optimized production processes. For example, the paint line – traditionally the most water-consuming process in the automotive industry – will have a water consumption index lower than one cubic meter per vehicle through internal recycling and careful planning of the rinsing stages.

Despite internal water use optimization, the plant's water consumption would nonetheless be high for this specific area unless additional actions were taken. A further dramatic reduction will be achieved by sending treated wastewater back to the industrial processes. For this purpose, the wastewater treatment station design includes a recycling process that will generate a stream of high quality water for industrial reuse, drastically improving the water recycling index. This will also lead to significant economic savings.

The remaining water will be discharged with quality standards far higher than the limits set by local authorities.

⁽³⁾ Water sources are regarded as significantly affected by water withdrawals and/or discharges if they are designated protected areas or have high biodiversity value, or if the withdrawals and/or discharges of water represent more than 5% of the average annual volume of the water body concerned. Only surface water has been taken into account. In 2013, water withdrawal never exceeded the 5% threshold at any site.

⁽⁴⁾ There is no known impact on the aquatic habitat, since the receiving water body does not have protected species and is not included on any list of extremely valuable natural habitats.

⁽⁵⁾ Representing more than 5% of average annual volume of the water body concerned.

Waste management

Fiat Group is also strongly committed to reducing waste generation in its production activities. Accordingly, reusing and recovering materials is widely practiced throughout the Group. What cannot be reused is recycled. When the waste generated cannot be recycled, it is disposed of, seeking to use technologies with minimal environmental impact (waste-to-energy conversion or treatment, with shipment to landfills only as a last resort).

The consolidation of actions to improve this important environmental factor resulted in a substantially stable trend in the volumes of waste generated in 2013 compared with 2012, despite increased production volumes. In the past two years, the total amount of waste generated has decreased by 2.5%. Projects to cut the quantity of waste generated led to overall **savings** of about **€4.5 million in 2013**.

The Group also monitors the level of waste defined as hazardous which is generated during manufacturing processes, in accordance with the applicable legislation in each jurisdiction. Particular importance is given to reducing the generation of such waste, since by its very nature it is less suitable for recovery. Through appropriate environmental practices, **hazardous waste decreased by 3.1% in the last year and by 36.7% compared with 2010 levels**.

Waste generation and management⁽¹⁾

Fiat Group worldwide (tons)

	2013	2012	2011	2010
Plants	142	144	150	148
Waste generated				
Non-hazardous waste	1,770,029	1,720,410	1,804,698	1,650,257
Hazardous waste	39,069	40,327	50,614	61,754
Total waste generated	1,809,098	1,760,737	1,855,312	1,712,011
of which packaging	121,837	75,332	97,099	90,982
Waste disposed				
Waste-to-energy conversion	23,750	19,950	23,336	21,609
Treatment	31,055	31,219	37,489	43,936
Sent to landfill	438,741	438,345	547,056	515,434
Total waste disposed	493,546	489,514	607,881	580,979
Waste recovered				
Total waste recovered	1,315,552	1,271,223	1,247,431	1,131,032

⁽¹⁾ The information relating to the determination of the waste disposal method is provided in the Waste Management Guidelines and embodied in the "operating guideline for monitoring environmental KPIs – Waste", which applies to the entire Fiat Group.

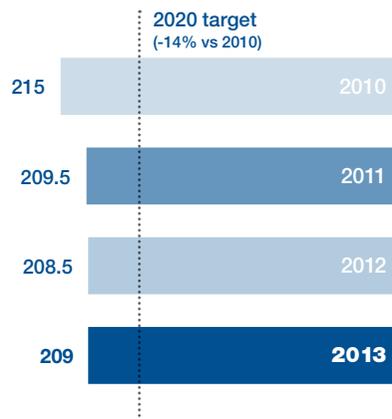
In Mass-Market and Premium Brand assembly and stamping plants, the quantity of waste generated per vehicle in 2013 was roughly the same as the previous year, while the comparison with 2010 shows a decrease of 2.8% (from 215.0 to 209.0 kg/vehicle produced) in overall waste generated per vehicle produced. **Hazardous waste per vehicle produced decreased 10.3% compared with 2012** (from 3.9 to 3.5 kg/vehicle produced) **and 50.0% compared with 2010** (from 7 to 3.5 kg/vehicle produced).

In 2013, Mass-Market and Premium Brand assembly and stamping plants **increased the waste recovery rate to 96.4%** (compared with the Fiat Group average of 72.7%) and reduced the **percentage of waste sent to landfill to levels as low as 1.3%** (compared with the Fiat Group average of 24.3%).

The average value of waste sent by the Group to landfills is essentially linked to a single type of waste, that is, Teksid's inert industrial process sand, which must be sent to landfill at the present time due to technological constraints. However, Teksid has several specific projects in progress aimed at optimizing the management of this type of waste.

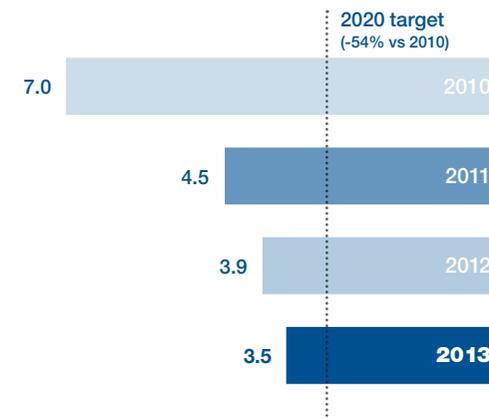
Waste generated per unit of production

Mass-Market and Premium Brand assembly and stamping worldwide
(kg per vehicle produced)



Hazardous waste generated per unit of production

Mass-Market and Premium Brand assembly and stamping worldwide
(kg per vehicle produced)



In alignment with the terms of the Basel Convention, 104 tons of hazardous waste were exported from Canada to the United States for recycling (paint shop-related waste)⁽²⁾, representing 0.27% of all hazardous waste generated by Fiat Group.

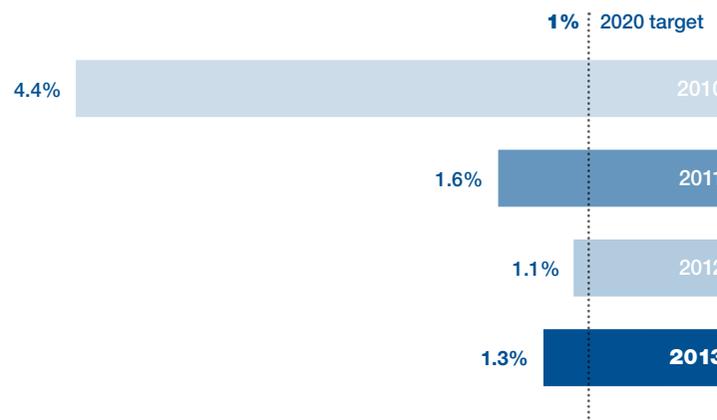
Waste recovery rate

Mass-Market and Premium Brand assembly and stamping worldwide



Waste sent to landfill

Mass-Market and Premium Brand assembly and stamping worldwide



Reducing waste sent to landfill

In 2013, numerous waste management improvements were implemented in the majority of the Group's plants. The Teksid plant in Monclava (Mexico) introduced a foundry sand regeneration system that allows recovering and reusing part of the sand in the production cycle to shape the cores (sand and resin templates used to make the hollow spaces inside iron castings), thereby reducing the amount of waste generated by about 30,000 tons a year.

This activity is yet another step in spreading the Best Available Technologies (BAT) in waste management to all plants, which started in 2012 at the Teksid plant in Ingrandes sur Vienne (France).

⁽²⁾ No other case registered for hazardous waste transported, imported, exported or treated falls under the terms of the Basel Convention.

Biodiversity conservation

Fiat Group is aware that each species, no matter how small, plays an essential role in the ecosystem and that biodiversity is an important global issue. Accordingly, the Group strives to preserve biological diversity and the variety of life forms on earth through sustainable development strategies.

During 2010, Fiat Group, in association with the Department of Life Sciences and Systems Biology at the University of Turin (Italy), defined a specific **Fiat Group Biodiversity Value Index** (FGBVI) as well as guidelines for its application across the company. The index measures the level of biodiversity and influencing factors for areas surrounding plants in order to identify, and give the proper priority to, any interventions that should be carried out to protect and/or restore the local environment.

The methodology has led to the definition of two parameters. The first reflects the level of biodiversity found in the surrounding area that is measured through the analysis and assessment of specific indicators characteristic of aquatic and terrestrial ecosystems, taking into account protected species on the relevant national and/or international lists, for example the International Union for Conservation of Nature (IUCN) Red List and Directive 2009/147/EC concerning conservation of wild birds. The second parameter measures the level of environmental pressure based on human activity in the area (agriculture, industry, urban expansion, etc.). Impact on biodiversity derives from anthropogenic pressure of infrastructures in the areas surrounding the plants and, to a much lesser extent, of the activities carried out at Fiat Group plants. The analysis of the impact of the application of FGBVI helps determine – with the collaboration of local authorities when possible – which activities and initiatives to pursue in the areas affected.

The methodology was initially implemented at **two Italian pilot locations** (the **Fiat Group Automobiles plant in Verrone** and the **Magneti Marelli plant in Venaria**, both near Turin). In 2011, the **Fiat Group Automobiles plant in Kragujevac (Serbia)** also adopted the FGBVI to restore habitat. In 2012, it was extended to one Teksid plant in **Funfrap (Portugal)**, and in 2013 the methodology was further updated in order to be easily extended to other regions. A self-assessment was conducted at 144 plants to identify sites where FGBVI should be applied. The Group is also highly engaged in biodiversity efforts in the NAFTA region. In 2013, the **Chrysler Group World Headquarters and Technology Center in Auburn Hills (US)** achieved **Wildlife at Work certification**. This program is administered by the Wildlife Habitat Council and recognizes sites that increase biodiversity through specific projects. Preserving the natural habitat was part of the Master Plan when this Chrysler Group site was first conceived several years ago. Located in an expansive wooded setting with wetlands on 465 acres, the complex hosts a wide variety of wildlife including great blue heron, double-crested cormorant, wood duck, cottontail rabbit, and Blanding's turtle. The projects recognized as part of the *Wildlife at Work* certification included, among others, wetland management to protect the natural habitat and a newly created pollinator garden planted by a team of Chrysler Group volunteers. The garden provides a food source for several species including bees, butterflies, moths, hummingbirds, and bats.

Plants near, bordering or within protected⁽¹⁾ or high biodiversity areas

Fiat Group worldwide

Company and plant location	Type of activity	Surface (mln m ²)	IUCN – Red List species and national conservation list species present	Investment (€)	Description of activities implemented to protect or restore	External check on restoration	Position in relation to protected area
FGA Verrone (Italy)	Production of transmissions and parts	1.8	44 species listed: 0 Critically endangered 2 Endangered 2 Vulnerable 2 Near Threatened 38 Least Concern	58,000	Preservation of the natural habitats and designated Community interest (Habitats Directive 92/43/EC) to ensure suitable conditions for the species in danger of extinction; Containment activities of shrub species; Restoration of moorland and fire protection paths (approximately 250,000 m ²); Processing of new biennial FGBVI index; Biophilia activities conducted for elementary school students from surrounding towns; Placement of nests.	Y	The protected area is in the plant area
Magneti Marelli Venaria (Italy)	Production of lighting and exhaust systems	0.2	1 species listed: 1 Near Threatened	28,000	Preservation of the natural habitats of the <i>Osmoderma Eremita</i> and engineering activities to protect the century-old oaks in La Mandria Park. The monitoring of the number of these threatened species proceeds side by side with a feasibility study to determine the best solution for keeping the trunk vertical. To date, six oaks have been anchored with cables connected to screws driven into the ground, in the least invasive way.	Y	The Plant is in the protected area IT1110079 La Mandria
Teksid Funfrap (Portugal)	Production of engine blocks, exhaust manifolds, differentials and carter turbines	0.1	n.a.	35,000	Conducted study to determine the FGBVI and start of the activities to plan the next initiatives.	-	Adjacent to the protected area (within 5 km)
FGA Kragujevac (Serbia)	Assembly and stamping	1.2	73 species listed: 0 Critically Endangered 0 Endangered 0 Vulnerable 2 Near Threatened 71 Least Concern	419,100	Improvement of environmental conditions through FGBVI application, environmental recovery, planting of native plant species, clearing of cement from the bed to recover the floodplains, creation of a bio-lake; creation of recreational areas.	-	Restored habitat

Biodiversity in Verrone plant 

With a keen eye on biodiversity and ecological sustainability, Fiat Group collaborates with the Department of Life Sciences and Systems Biology at the University of Turin for the preservation of an important ecosystem. At the end of the study to develop the Fiat Group Biodiversity Value Index (FGBVI), the Verrone (Italy) plant decided to continue the collaboration. In 2012, **an action plan was completed which details plant engagement through 2020** to coincide with the United Nations Decade on Biodiversity (2011-2020). The plan includes all interventions and activities that will be implemented by the plant to preserve biodiversity in its protected area, as well as build greater awareness on this topic among the inhabitants and students in the local community. In 2013, communication initiatives with LIPU (Lega Italiana Protezione Uccelli) and with local schools were also implemented to spread knowledge about biodiversity and conservation.

⁽¹⁾ A protected area (national, regional, site of community importance, special protection zone, oasis, etc.) is a geographically defined area that is designated, regulated or managed to achieve specific conservation objectives. An area of high biodiversity value is an area that is not subject to legal protection, but is recognized by a number of governmental and non-governmental organizations as having significant biodiversity.

Non-manufacturing processes

The Group's commitment to reducing our environmental impact goes beyond our products and industrial plants to also include workspaces and offices.

Offices

In 2013, several initiatives were launched or continued from previous years, aimed at engaging and training personnel on issues concerning health, environmental protection (waste management, water consumption, energy saving) and proper management of workspaces. The ultimate goal of these initiatives is to make employees fully aware of the need to put healthy and sound habits into practice in the workplace, thus increasing their awareness of responsible behaviors that could also be continued at home.

The Group's various initiatives have been implemented through a number of different communication channels. These included meetings, information disseminated through specific intranet and internet sites and by email, signs in common areas and special events.

In Italy, the ECOOffice program was continued for Group employees. The program consists of an online course available on the intranet portal that illustrates the most common energy-related issues in the office and suggests actions that employees can take to significantly reduce their usage. The course offers technical information, tips, links to related topics, a self-assessment test and a suggestions area that is divided into three office equipment categories: PCs, printers and lighting. It also includes a more general module on saving energy and water. In 2013, access to the program was extended to include additional Maserati employees.

Zero Waste to Landfill at Chrysler Group headquarter

The environmental protection initiatives currently under way include the *Zero Waste to Landfill* program at the Chrysler Group Headquarters and Technology Center in Auburn Hills (US), where more than 14,000 people work. Approximately 1,670 containers were installed for separate waste disposal of plastic, paper, recyclable and organic material. At a special education event, employees participated in a contest to test their level of knowledge about waste disposal, with awards for the best responses. Of a total 8,358 tons of waste generated at the Auburn Hills complex during 2013, zero waste was disposed of via landfill.

Converting an existing industrial site into an office complex in Italy

In 2013, the Group began a major project to convert an abandoned 42,000 m² industrial site in Turin (Italy) into offices. The energy performance specifications of the new structure are superior to existing regulations and, starting in 2014, the site will house approximately 1,600 employees that are currently located at multiple sites around the city. Beginning with the design phase, particular attention was given to the ability of the building's outer shell to adapt to seasonal variations in climate, optimizing ventilation systems and natural lighting, as well as using advanced technologies to limit thermal dispersion.

From an environmental point of view, the primary benefits of renovating an existing building rather than building a new structure are:

- reuse of existing industrial site
- significant reduction in the generation of waste due to preservation of the building's external structure
- minimization of new building materials to avoid the consequent impact to production and transportation
- conservation of latent energy of materials in the existing structure.

An analysis during the design phase was completed using established standards. The results showed that maintaining the existing structure and materials to transform the building saved energy and cut emissions significantly, compared to a demolition and rebuild.

The parameters considered were:

- Global Warming Potential 100, i.e., the contribution to global warming produced over 100 years expressed in tons of CO₂ equivalent and calculated based on the contribution to emissions of each element and material present in the building (existing and planned). Preserving the original structure **saved about 7,600 tons CO₂e**.
- PEI, or Primary Energy Intensity, which represents the total energy consumed during the entire life cycle of a product from the extraction of the raw materials up to its demolition and disposal. Preserving the original structure **saved about 89 terajoule**
- AP, or Acidification Potential, which represents the potential to form acid rain and is linked to the emission of specific airborne acidifying substances, such as nitrogen oxides and sulfur oxides. Preserving the original structure **saved about 925 tons SO₂e**.

Another tangible sign of the project's responsible approach was the use of recyclable materials for the renovation.

Once occupied, the building's energy performance will be monitored. In addition, the new site is expected to contribute to a progressive revitalization of the local area and infrastructure.

Together We Are 20 Thousand Sustainable Attitudes program in Brazil

Several initiatives were launched at FGA sites throughout the LATAM region where approximately 22,500 hourly and salaried workers are employed. Some were linked to the implementation of standards and international certifications, such as ISO 14001 and ISO 50001, at Group plants. Others focused on preserving natural resources through conscientious use and reducing food waste in cafeterias, like the *Together We Are 20 Thousand Sustainable Attitudes* and *No Waste campaigns* launched at the Betim plant.

Before the launch of the awareness campaign at company cafeterias in the Betim plant where approximately 19,500 people work, 45.6 grams of food per person were wasted on average. This totaled 19 tons a month and 228 tons a year, enough to feed more than 200 people for a year. Each month, ten baskets of food were donated to charitable institutions designated by the *Árvore da Vida* association for each of the four company cafeterias that succeed in wasting less than 40 grams per person. In May 2013, nine months after the launch of the initiative, all four cafeterias reduced waste to below the threshold, recording quantities of waste per person ranging between 21.38 and 39.76 g. As a result, 20 baskets of food were donated to the Antonio Goncalves Pereira association in the Teresopolis Gardens neighborhood where 32 elderly people live, and another 20 baskets to Good Shepherd kindergarten in the Imbirucu neighborhood, which serves over 145 children.

Green IT⁽¹⁾

The Group is committed to reducing the environmental impact of our Information Technology (IT) activities by replacing equipment so that it is more efficient.

In 2013, a program to replace office hardware worldwide with equipment featuring high-efficiency power supply units continued. This resulted in saving 1,179 MWh of electricity and approximately 791 tons of CO₂ since 2010. The Group intends to further extend the initiative in 2014.

In addition, approximately 13,800 computer monitors were replaced with new EnergyStar equipment. These new monitors consume less electricity by 473 MWh, and CO₂ emissions by approximately 236 tons since 2010, while meeting the most stringent health, safety and environmental standards. This new equipment does not contain mercury, thus enabling environmentally friendly disposal and recycling.

In 2013, Chrysler Group initiated a program to replace all printing devices throughout US facilities. Multifunctional printing devices were deployed at the Auburn Hills Campus, enabling printing, copying, faxing and scanning – all from one device. The new devices also streamline maintenance by automatically ordering toner when low levels are detected. According to plans, these devices will be deployed in the remaining US facilities in 2014. Along with improved functionality, it is expected to save over €750,000 a year.

In the Data Center area, which includes the computer systems that host applications and IT services, activities continued to reduce, replace, consolidate and virtualize servers, achieving a cumulative reduction of 36,470 MWh and approximately 23,200 tons of CO₂ since 2010. Further initiatives are planned in this field for 2014.

Finally, Chrysler Group in NAFTA region saved cumulative 3,013 MWh of energy and about 2,200 tons of CO₂ since 2010 by automatically powering down personal computers not in use at night.

⁽¹⁾ The conversion factor used for EMEA is 1 kWh = 0.52 kg of CO₂ (source: Carbon Trust, Conversion Factors, 2011), the conversion factor used for NAFTA is 1 kWh = 0.75 kg of CO₂ (source: Emissions & Generation Resource Integrated Database eGRID, 2012).