



DRIVE THE CHANGE

PRESS KIT

June 5, 2014

RENAULT HAS REDUCED ITS CARBON FOOTPRINT BY 10% IN THREE YEARS

By making a public commitment to reduce its carbon footprint by 10% between 2010 and 2013, and by meeting that objective, the Renault group has achieved an automotive industry first.

The policy is part of the Group's determination to reduce the greenhouse gases (and CO₂ in particular) emitted by its products and activities and to play an active part in the fight against global warming potential worldwide.

Renault has led an environmental policy applying to all its business lines for nearly 20 years. And with a view to continuous improvement, Renault has committed to pursuing its efforts throughout the duration of the strategic plan, the objective being to reduce its carbon footprint by an average 3% a year between 2010 and 2016 in line with its world sales forecasts.

To that end, Renault is rolling out action plans across the entire life cycle of its products and all its activities.

Particular focus is placed on the vehicle use phase, which generates a large part of the greenhouse gas emissions calculated in the overall carbon footprint. **In 2013, Renault moved to the top spot in Europe as the carmaker with the lowest CO₂ emissions in use***, at less than 115 g/km of CO₂, through an increasingly economical range of internal-combustion vehicles and the breakthrough launch of a range of all-electric vehicles.

Because the extraction of the raw materials required to produce vehicles accounts for a significant share of its carbon footprint, Renault is pursuing its efforts in the use of recycled materials. **It is a leader in the use of recycled plastics**, with an average rate of 11% – a figure on the constant increase.

Renault is reducing the carbon footprint of all its activities. The Group's plants are cutting their energy consumption and making growing use of renewable energies, as seen at the **Tangiers plant in Morocco, designed as a "zero carbon emissions" site**. In terms of logistics transport, fill rates are optimized to reduce the number of trucks chartered. The Group is also working to cut greenhouse gas emissions in its tertiary activities, notably through the introduction of more energy-efficient IT equipment and solutions for reducing professional travel.

* Average CO₂ emissions over an NEDC-homologated combined cycle of Renault group PC registrations in 2013 in 23 EU countries (all EU countries except Cyprus, Malta, Romania and Bulgaria). Source data from AAA-DATA (Association Auxiliaire de l'Automobile), a CCFA subsidiary that manages auto sector data for public authorities.

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BACKGROUND

The greenhouse effect

The greenhouse effect – vital to life on Earth – is produced by the natural presence of gases in the atmosphere. Since the 20th century, the greenhouse effect has been **heightened by additional emissions of gas stemming from human activity**. This is referred to as the “anthropic” greenhouse effect, over three-quarters of which is caused by **carbon dioxide, or CO₂**.

The **consumption of fossil fuels** – for energy production, fuel, heating and manufacturing – is the biggest factor behind the increase of global greenhouse gas emissions. The International Energy Agency, IEA, estimates that the transport sector, all transport modes combined, generates 23% of the world's CO₂ emissions. The anthropic greenhouse effect is also being boosted by changes in land use and occupancy, including deforestation.

Global warming

The climate changes observed in the last few decades are mainly connected to the emission of greenhouse gases from human activity.

According to the United Nations Intergovernmental Panel on Climate Change, IPCC, climate change has over the last few decades had **impacts on all the continents and oceans, mainly on natural systems**. Compiling and assessing existing research, IPCC scientists say that it is still possible to limit the increase in world temperatures to 2°C compared with the pre-industrial era, but that doing so will require considerable investments in **alternative energy production and consumption**.

Carbon footprint

A carbon footprint corresponds to the **global warming potential** resulting from the emission of greenhouse gases (essentially CO₂). It is one of five components of the environmental footprint, together with the depletion of natural resources, acidification, eutrophication, and photochemical ozone.

The **carbon footprint of a product** is equivalent to the greenhouse gas emissions generated **throughout its life cycle**, from the extraction of the raw materials used to build it through to recycling. The **carbon footprint of a company** includes that of its products and activities. A carbon footprint is measured in tonnes of carbon dioxide equivalent (t CO₂ eq).

Renault's carbon footprint is calculated for all the phases in the life cycles of its vehicles and for all Group activities, and measured per number of vehicles sold worldwide.

RENAULT, PIONEER THROUGH ITS CARBON FOOTPRINT REDUCTION in the fight against global warming

A world first

In 2011 Renault was **the world's first carmaker** to make a public commitment to a lead environmental indicator for the reduction of its global carbon footprint.

Renault's commitment is informed by a future-looking and problem-solving approach, and by the firm determination to reduce the Group's carbon footprint. The commitment is part of the strategic plan, "Renault – Drive the Change".

In real-life terms, Renault launched an action plan across the company to **shrink its global carbon footprint by 10% between 2010 and 2013**. The initiative involved the efforts of all the business lines and all employees, irrespective of their job or position.

Renault has met that objective. The Group's methodology and the results achieved at end-2013 were confirmed by statutory auditors in January 2014.

The reduction in Renault's carbon footprint between 2010 and 2013 prevented the emission of 5.5 million t CO₂ eq., the equivalent of the annual emissions of roughly 600,000 Europeans*, or the population of a city the size of Nantes, for example**.

Strengthened by this achievement, the Group has committed to pursuing its efforts throughout the duration of the strategic plan and shrinks its carbon footprint by an **average 3% a year between 2010 and 2016**, taking account of the Group's worldwide sales forecasts.

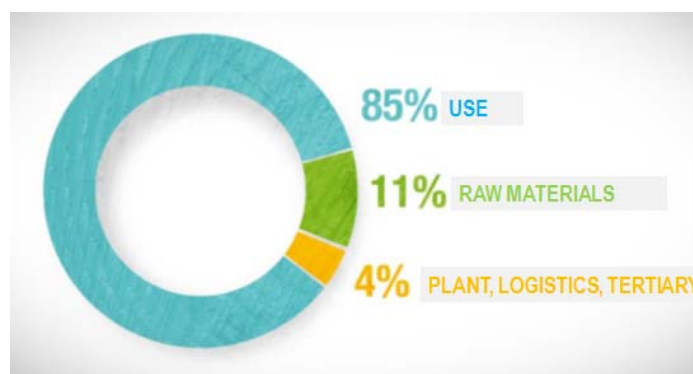
Action on all fronts

CO₂ emissions are generated by a number of factors, including vehicle use, the end-of-life process, materials, plants and logistics, fuels and their extraction, and staff commutes and professional travel. **Consistent with its environmental policy applying to the entire life cycle**, Renault addresses **each one of these factors** to reduce the Group's carbon footprint worldwide per each vehicle sold.

Visibility of the Group's efforts to reduce the greenhouse gas emissions of its vehicles and activities is boosted by the fact that the issues addressed by those efforts account for the lion's share of the overall carbon footprint. The main issues are **vehicle use (roughly 85% of the carbon footprint)**, the **materials used in vehicle production (10%)**, the **manufacturing process (1.5%)**, the **transport of components and vehicles (1.5%)**, and the full range of **tertiary activities accompanying the company's business (under 1%)**.

Breakdown of the total carbon footprint of the Renault group:

Vehicle life cycle ~96%	Vehicle use and manufacture of fuels necessary to vehicle use:~85%
	Provision of materials and components for vehicle manufacture:~10%
	Vehicle end-of-life management:~1%
Group activities <4%	Vehicle production:~1,5%
	Logistics flows:~1,5%
	Tertiary activities and support functions: <1%



A pioneering commitment across the entire life cycle

Renault has led a policy to reduce its environmental footprint for nearly 20 years. For the last ten years, this policy has encompassed **all the life-cycle phases of its vehicles**.

Renault precisely measures the environmental footprint of its new models using life-cycle analysis, or LCA, a standardized international methodology with ISO 14040 and 14044 certification. Global warming potential, quantified in the carbon footprint, is one of the five environmental impacts (see page 3) monitored by Renault in its life-cycle analyses.

Without neglecting other impacts, Renault sets great store in the reduction of its carbon footprint – that of its **vehicles from one generation to the next and also that of its activities**.

Renault has long been in the forefront of the reduction of greenhouse gas emissions from vehicles. As early as 2005, the Group made the reduction of CO₂ emissions a priority objective, as set forth in its strategic plan, “Renault Commitment 2009”. In May 2007, Renault was the first carmaker to launch an environmental signature, “Renault eco²”, applying to its entire range and addressing the main phases in the vehicle life cycle. Renault in 2010 was the first carmaker to present a complete range of electric vehicles and in 2012 was the first to design a greenfield automotive plant, in Tangiers, Morocco.

* “On average, each European citizen emitted 9.4 tonnes CO₂ eq. in 2010.” (European Commission Consultation Paper for the European Parliament and Council, October 24, 2012)

** 591,461 inhabitants in 2010, according to France’s national statistics and economic research institute, INSEE.

RENAULT, THE EUROPEAN LEADER IN LOW CO₂ EMISSIONS IN USE, is reducing its carbon footprint through fuel-efficient internal-combustion models and through electric vehicles

A full 75% of the Renault group's carbon footprint stems from the use of its vehicles, and a further 10% from the emissions generated by the manufacture of the fuels used to power the vehicles. Vehicle use, then, is responsible for a total 85% of the Group's carbon footprint, making it a crucial phase and Renault's priority focus.

Renault is reducing the energy consumption of its vehicles because using less fuel generates fewer CO₂ emissions in use. It also reduces the need for fuel and, by extension, the greenhouse gas emissions generated by the manufacture of fuel.

In line with the commitment set in its strategic plan, "Renault – Drive the Change", the Group reduced the average CO₂ emissions generated by its new vehicles sold in Europe to **under 120 g/km** in late 2013. It even **outperformed its objective**, achieving **an average 114.8 g/km for 2013*** and thereby becoming **the European leader**. In the space of just one year, the average CO₂ emissions of the passenger cars sold by the Group **decreased by over 10 g/km**.

Internal-combustion vehicles: a thoroughly renewed range featuring Energy engines

Renault is downsizing internal-combustion engines across its range. Through smaller and lighter engines, downsizing increases fuel efficiency while maintaining and even improving performance.

And this is exactly what the **Renault Energy** gasoline and diesel engine range does. The powerplants – all of which are now turbocharged – feature innovative technologies, some of them heralding from Renault's Formula 1 experience in cooling and friction reduction. The Energy engines **reduce fuel consumption and CO₂ emissions by as much as 25%** while offering top-level driving pleasure.

In all, 12 Energy engines have been launched in three years, leading to a thorough renewal of the engine range in Europe and considerably reducing the Group's CO₂ emissions.

** Average CO₂ emissions over an NEDC-homologated combined cycle of Renault group PC registrations in 2013 in 23 EU countries (all EU countries except Cyprus, Malta, Romania and Bulgaria). Source data from AAA-DATA (Association Auxiliaire de l'Automobile), a CCFA subsidiary that manages auto sector data for public authorities.*



Energy TCe 90 engine

In 2013 Renault benefitted from the first full year of the models renewed in 2012.

Chief among these are **New Clio**, with CO₂ emissions as low as 83 g/km, and **Mégane** and **Scénic Collection 2012**, with CO₂ emissions of 90 g/km and 105 g/km respectively for the Energy dCi 110 models, and 119 g/km and 135 g/km respectively for the Energy TCe 115 versions.

In the Dacia range, **New Sandero** and **New Logan** also contributed to the performance, with homologated CO₂ emissions of 99 g/km for the diesel dCi 75 and dCi 90 models and 116 g/km for the gasoline TCe 90 models.

The new models launched in 2013 are also contributing to the momentum. **Captur** emits a homologated 95 g/km of CO₂ equipped with the diesel Energy dCi 90 engine, and 113 g/km with the gasoline Energy TCe 90. **New Logan MCV** boasts the same impressive performances as New Sandero and New Logan.



Renault Clio IV GT hatchback



Renault Captur

A complete range of all-electric vehicles

Renault's electric vehicles emit zero CO₂ in use over a homologated NEDC cycle.

A pioneer in the sector, Renault is the top-selling electric vehicle make in Europe, taking a 37% share of the market in 2013.

It is the **only carmaker to market a complete range of four 100% electric cars** at prices close to those of equivalent internal-combustion models in countries offering tax incentives. The lineup consists of the compact all-electric hatchback Renault ZOE, the breakthrough mobility concept Renault Twizy, the prestigious three-box sedan RSM SM3 Z.E. (sold in South Korea), and the Renault Kangoo Z.E. range of compact electric vans, having maintained all of their load-carrying capacity.

Noteworthy: The life-cycle analyses carried out by Renault show that, over the entire vehicle life cycle, the overall environmental impact (including global warming) of an electric vehicle is nearly half that of an equivalent internal-combustion vehicle.



Renault group electric vehicles

Learning the right behavior with “Driving eco²” eco driving

The “Driving eco²” program empowers drivers, helping them to reduce their carbon footprint by cutting fuel consumption and CO₂ emissions in use. Fitting the entire range of “Driving eco²” systems on an internal-combustion vehicle can **reduce fuel consumption and CO₂ emissions by as much as 25%**, depending on driving conditions and the motorist's usual driving style.

The program is based on two, complementary, pillars: **in-car driving aids** and **training services**.

Fitted on the most recent Renault and Dacia cars, in-car eco-driving aids come in three forms: eco-mode, activated with the simple push of a button; driver assessment and coaching tools, integrated in the multimedia systems (R-Link, Médiav); and the driving style indicator.

In terms of training, Renault-developed eco-driving simulators fitted on internal-combustion and electric vehicles show users the potential progress they can make and provide them with the relevant advice.

On all Group vehicles, the use of these tools leads to a reduction of 127 g/km of CO₂ per vehicle.

RENAULT, A FRONTRUNNER IN THE USE OF RECYCLED MATERIALS, is shrinking its carbon footprint by extracting fewer raw materials

The greenhouse gas emitted by extracting raw materials and manufacturing the components used in vehicle assembly account for roughly 10% of the Renault group's carbon footprint.

Renault is replacing an increasing number of raw materials by recycled materials, the aim in particular being to limit the greenhouse gases emitted by the extraction of natural resources and the production of materials. The Group is on the cutting edge of the use of recycled plastics.

Recycled plastic rate of 11% and constantly increasing

Automotive vehicles consist 85% of metals and plastics. Metal recycling (and by extension the use of recycled metals) is increasingly widespread, but the same has not always been true for plastics. Renault has been tackling the issue for some time now.

As early as the 1990s, Renault worked with its suppliers to use recycled plastics on its vehicles.

Today Renault is the leader in the field. The share of recycled plastics used in the manufacture of Renault and Dacia vehicles is estimated at an average 11% of total plastic content. In 2013 this represented a savings of **34 kg CO₂ eq. per vehicle**, the equivalent of 87,489 t CO₂ eq.

Recycled plastic use is increasing with each new vehicle generation at Renault. The aim is to achieve a 20% recycled plastic rate on new vehicles produced in Europe in 2015.

Captur already has a 16% rate. Recycled plastic parts include the front and rear screens and numerous bumper components.



Renault Captur

Increasing the availability of recycled materials through the circular economy

In 2013 the rate of recycled materials in the total mass of group vehicles produced in Europe was 30%. To take things further, Renault has set an objective of 33% for 2016.

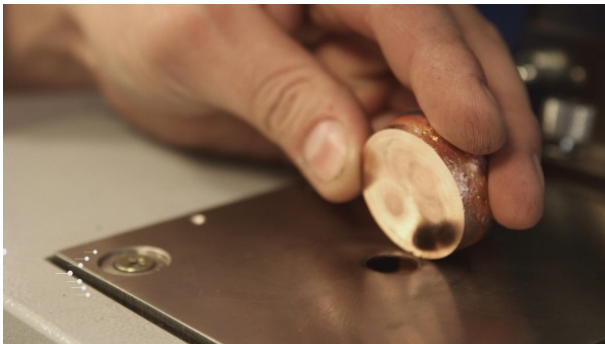
Replacing raw materials, extracted from natural resources, by “secondary”, or recycled, materials hinges on the availability and quality of the recycled materials. **To improve the situation, Renault has committed to a circular economy policy, in particular having worked hand in hand with the Ellen MacArthur Foundation since 2010.**

Renault’s aim is to **ensure the recycling of materials from the automotive industry to feed, as much as possible, the automotive industry itself**, as part of a circular economy approach.

Renault is working with a number of partners to create “**materials loops**” to bring secondary materials into compliance with the specifications of the automotive industry. The recycling “loop” can go on practically to infinity since it **preserves the material capital** found in each vehicle. And the shorter the loop, the smaller Renault’s environmental footprint.

For example, Renault Environment, a wholly owned subsidiary of the Renault group, is introducing materials loops from end-of-life vehicle processing centers to reuse the **copper and aluminum** in Renault foundries, the **polypropylene and noryl** at Group suppliers, and **materials from catalytic converters** in other industries.

Through this approach, Renault listed **two new plastics references from short-loop recycling** channels in its plastic materials catalogue (Renault Materials Panel) in 2014.



Copper from recycled end-of-life vehicles

Renault is reducing its carbon footprint by **CUTTING THE ENERGY CONSUMPTION OF ITS ACTIVITIES**

In addition to reducing the greenhouse gases emitted by the life cycles of its products (particularly vehicle use and the use of materials), Renault also focuses on activities linked to the design, production and even the sales and marketing of its vehicles.

Renault is reducing the carbon footprint of its plants, logistics transport, and tertiary activities.

Plants: consuming less energy and developing renewable energies, spearheaded by the Tangiers site

With the manufacturing phase accounting for roughly 1.5% of a vehicle's carbon footprint, and 90% of the greenhouse gas emissions of Renault sites stemming from energy consumption, the Group is leading a strategy on the reduction of energy consumption and the development of renewable energies.

Renault's environmental policy concerning plants is based on a number of **continuous progress initiatives** rolled out every day at the sites, together with **clean-break initiatives** introduced when modernizing manufacturing facilities or, naturally, when creating a new plant.

The policy has led to a 15% decrease in five years (2009 to 2013) of the direct and indirect greenhouse gas emissions resulting from the energy consumption required to produce a vehicle.

Energy needs reduced 19% in 10 years

Renault's general policy on environmental impact led specifically to a **19% reduction in energy consumption per vehicle between 2003 and 2013.**

Energy needs are being reduced in three main ways:

Controlled energy consumption during non-production periods. The Group plays particular attention to wherever possible completely turning off machines and general utilities during non-production periods. At Maubeuge for example, safety time is optimized when plant equipment is turned on.

Convergence toward benchmark technical and organizational practices. In paint shops, the most energy-consuming process in a body-assembly plant, Renault works to reduce consumption to a basic minimum by optimizing ventilation, operating conditions (temperature and humidity) and equipment stop and start-up times. For example, paint booth start-up has been disconnected from the drying ovens through the installation of doors at Douai and Valladolid. In another example, compressed air consumption in stamping has been cut by disconnecting supply when the equipment is not in use, at Valladolid and Sandouville.

Increased energy efficiency, in particular by trialling energy recovery solutions. Examples here include the installation of heat exchangers down-line from drying ovens in the paint shop and the decentralization of energy consumption so as to limit heat losses in the network.

Using energies that emit less CO₂

The Group sees climate and energy issues as opportunities for innovation. As such, it takes advantage of the creation of a new plant to achieve drastic reductions in the ecological impacts of automotive production

A recent example is the design of the **Tangiers greenfield site, where the use of low CO₂-emitting energies is particularly visible.**

In its first year on line, the plant's energy needs were met 90% by electric energy produced from renewable energy sources and by the site's biomass boiler, thereby preventing the emission of over 80,000 t CO₂ eq. (or 30 kg CO₂ eq. per vehicle).

The goal of the Tangiers site, opened in 2012 and run by Renault, is to become the “zero carbon emissions” plant of the Renault-Nissan Alliance. Renault has fitted the plant with equipment that reduces energy needs and with thermal energy production technologies emitting low quantities of greenhouse gases, in partnership with the Kingdom of Morocco and Veolia Environment.



Renault's Tangiers plant, Morocco



Plant-based fuel for the biomass boilers
Tangiers plant

In another example, this time as part of a continuous progress policy, **the Sandouville plant has since 2012 been reducing its consumption of natural gas by sourcing steam produced from industrial waste.**

In addition, the **photovoltaic panels** installed at the group's main production sites in France, Spain and South Korea contribute to the reduction of the carbon intensity of the local electricity mix.

The share of renewable energies and energies produced from renewable sources was 14.1% in 2013, all sites combined. Taking things further, Renault aims to increase the share of direct and indirect renewable energies to 20% at its industrial sites by 2016.

Logistics transport: optimizing fill rates as a priority

Logistics accounts for 1.5% of a vehicle's carbon footprint.

Rollout of the "Logistics eco2" program continued in 2013, with four key progress areas: **the reduction of mileage** (location of suppliers, optimized routes), **the reduction of the number of trucks/containers transported** (optimized packaging and truck/container fill rates), **the development of sea, waterway and rail transport** as an alternative to road transport, **and the reduction of fuel consumption** (in partnership with haulage companies).

Fewer containers and trucks

The central focus is on **optimizing the fill rates of containers and trucks**. For example, the improvement of container fill rates for the three main sea export flows from France, Romania and Spain has reduced the number of containers by around 1% and **prevented the emission of nearly 1,100 t CO₂ eq.** Similarly, optimizing truck fill rates in Europe has taken the equivalent of 9,700 trucks off the road, preventing the emission of roughly **8,000 t CO₂ eq.**

More trains

The introduction of a **second train** on the logistics line linking up Portugal, Spain and northern France has prevented the emission of around **7,000 t CO₂ eq.**

Tertiary activities: reducing energy needs

The Group's tertiary activities are no small matter in carbon footprint reduction as they account for nearly 1% of the total.

They directly concern all the employees working for Renault.

Eco-responsible IT equipment management

By optimizing its IT equipment and the use made of that equipment, the Group **reduced its carbon footprint by 22%** between 2010 and 2013. Particularly impressive progress was made on workstations, whose electricity consumption was reduced by 60% through the **renewal of computers** and by encouraging staff to make **more responsible use** of them. More than 15,000 additional people have adopted the habit of turning off their desktop computer for the weekend. These initiatives have generated a savings of some **5,400 t CO₂ eq.**

Alternative solutions for reducing professional travel

To **limit the professional travel of its employees**, Renault is promoting **teleworking**. In France, 1,500 employees work on a teleworking basis. In 2013 alone, the teleworking policy reduced professional travel by 8.2 million kilometers, preventing the emission of **1,200 t CO₂ eq.** Some 3,000 people in France, 13,000 in Romania and 4,000 in Tangiers benefit every day from Renault's **collective transport offering**.

The Group also proposes videoconference and online document sharing resources to reduce professional trips and limit the greenhouse gas emissions generated by those trips.

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