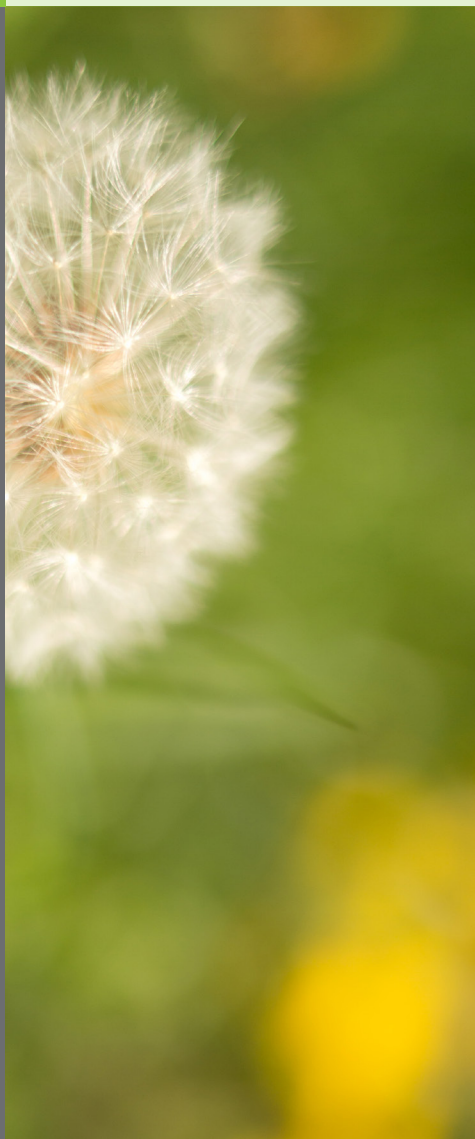


# OECD **Environmental** REPORT 2013



The Organisation for Economic Co-operation and Development (OECD) was created in 1961. Today, the mission of the OECD is to promote policies that will improve the economic and social well-being of people around the world. We provide for our 34 Member countries, as well as many non-Members associated with our work, a forum in which governments can work together to share experiences and seek solutions to common problems.

Some 2 900 people work in the OECD Secretariat. Drawing on facts, analysis and real-life experience, the OECD recommends policies designed to make the lives of ordinary people better. We work with business and with labour, and we have active contacts as well with civil society organisations. The common thread in our work is a shared commitment to market economies backed by democratic institutions and focused on the well-being of all citizens.

Further details on the methodology, as well as primary data and their treatment, are available upon request. The methodology used to establish the greenhouse gas inventory and disclose related information was reviewed in 2012 by a third party, which confirmed its adequacy. The same methodology was applied this year.

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## FOREWORD BY THE SECRETARY GENERAL

Governments need to start taking action now to put us on a pathway to achieve zero net-carbon emissions in the second half of this century. We need to start immediately if climate change is to be stabilised, as we do not have a 'climate bailout option' up our sleeves. Continued degradation and further erosion of our natural environmental capital are expected if we do not stand up to it, with the risk of irreversible changes that could endanger two centuries of rising living standards.

Everyone has a role to play. At the OECD we continuously look at how our own activities impact the environment, the sustainable use of natural resources and public health and safety, just as we encourage others to do in the context of our broader objectives regarding green growth and sustainable development.



We have in place measures that facilitate green procurement; that optimise the use of energy, water, wood, paper, and other natural resources; and that limit and offset the release of greenhouse gases, and minimise the use of other substances damaging to health and the environment. We also aim at reducing waste and expanding the recycling and use of recycled materials. To these ends, our employees do their best to ensure that we follow good practice and are compliant with relevant environmental good practice and legislation in the host country and at a more global level.

Our corporate environmental strategy is in line with the OECD Guidelines for Multinational Enterprises, which encourage enterprises to take due consideration of the need to protect the environment, public health and safety, and to conduct their activities in a manner contributing to the wider goal of sustainable development. Regular monitoring of progress towards environmental, as well as health and safety goals is equally crucial.

I am pleased to share with you this first OECD Environmental Report. It is an evolution of the Greenhouse Gas Emissions Report, which has been issued annually since 2010. This document is intended to keep you informed about our environmental performance, policies and practice and calls for your contribution and involvement in ensuring the efficient and effective implementation of our corporate environmental strategy.

We are on a collision course with nature. We need to tackle climate change as an intergeneration responsibility. I am glad the OECD and its staff are making important contributions to win this battle, and encourage everyone to join and keep up the fight.

## OECD Environmental Vision

Recognising that our Organisation's activities can impact the environment, sustainable use of natural resources and public health and safety, we are committed to limit the environmental impact of our work in a manner consistent with the wider goals of green growth and sustainable development.

In that regard, strive to:

- ensure that the procurement policies of the Organisation give due consideration to the selection of products, materials, technologies and services which are environmentally sound;
- optimise the use of energy, water, wood, paper, and other natural resources;
- limit and offset the release of greenhouse gases, reduce vehicle emissions and minimise the use of other substances damaging to health and the environment;
- reduce waste and expand re-use, recycling and use of recycled materials;
- assess environmental risks and opportunities associated with our operations.

To reach these goals, we will embody good practices and ensure we remain compliant with relevant environmental legislation in the host country and other countries where Secretariat facilities are located. We will maintain an environmental management system appropriate to our operations. This system will include:

- a collection and evaluation of relevant and timely information regarding the environmental and health and safety impacts of our outputs;
- measurable objectives and, where appropriate, targets for improved environmental performance and resource utilisation, and a periodical review of the continued relevance of these objectives;
- regular monitoring and verification of progress toward the objectives and targets.

Employee understanding and involvement are key to the effective implementation of this Vision. We will raise awareness about the environmental performance of the OECD Secretariat and facilities.

This OECD Environmental Vision is communicated to all OECD employees. It will be monitored on a regular basis and updated as necessary.

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## 1. OVERVIEW

This report provides an update on the progress made in implementing corporate environmental management in OECD operations. Since 2010 details of the greenhouse gas emissions (GHG) arising from our operations have been reported annually to all OECD staff. The present report goes one step further by including not only the results of these annual greenhouse gas emissions inventories, but also reviews of other parts of our environmental management programme.

The report addresses five objectives:

- Environmental certification of OECD buildings;
- Green procurement;
- Use of natural resources in operations;
- Greenhouse gas and vehicle emissions;
- Waste management.

Progress towards achieving these five objectives is assessed against eight indicators.

The results confirm that our operations have become more efficient and environmentally friendly in 2013. This was achieved thanks to the following initiatives: improvement in our daily practices; change of management policies; introduction of new technologies; and awareness-raising of staff and delegates.

The report also includes measurements of our GHG emissions. It confirms that emissions related to official missions increased in 2013 compared with 2010. This is linked directly to specific missions and the locations of global events to which the OECD contributes.

In 2013, as part of its environmental strategy the OECD participated in a United Nations-led programme in which the environmental performance of the UN and other agencies was peer-reviewed. The Secretariat took part in the team evaluating the environmental management of the United Nations' offices in Vienna. This initiative allowed the OECD to share good practices with other organisations. Detailed information is available at [www.unemg.org](http://www.unemg.org).

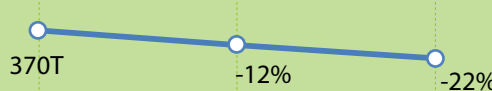

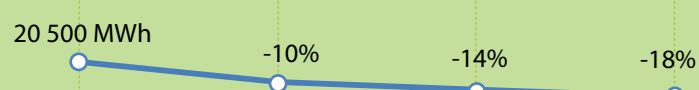

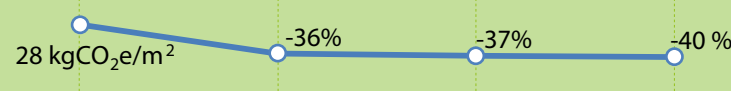



An efficient environmental management system requires a mechanism for continuous improvement. We aim to develop further initiatives and communication tools in order to improve our environmental performance and monitoring. In 2014, the focus will be on finalising the formalisation of the corporate environmental management system, implementing an energy awareness campaign and seeking to have the HQE®E – green building certificate awarded to the OECD Château.

### Reporting scope

The OECD, based in Paris, France, operated in 14 buildings in 2013. In addition to accommodating its staff (2 996 in 2013), the OECD welcomes a large number of delegates and visitors annually (116 000 in 2013). The International Energy Agency (IEA), the International Transport Forum (ITF), and the Nuclear Energy Agency (NEA) are autonomous OECD bodies and operate in three of these Paris-based buildings. **This report covers the 11 buildings in the Paris area (75 183 m<sup>2</sup> in total, 2 609 employees)** for which the Executive Directorate of the OECD has full operational responsibility. OECD consumption with regard to **communal areas in the Delta building**, such as the self-service restaurant, is estimated to amount to 70% of the total consumption of that building. **2010 is used as the base year** because it is considered to be the first stable year for OECD buildings following completion of the site renovation project.

The table below shows the environmental performance of OECD operations in the period 2010-2013<sup>1</sup>.

●●● indicates that the trend is very good, ●● good, and ● satisfactory.

<b>Total paper consumption</b>		●●●
<b>Total water consumption</b>		●●
<b>Total energy consumption</b>		●●●
<b>Total GHG emissions</b>		●●
<b>GHG emissions related to buildings</b>		●●●
<b>Total vehicle fuel consumption</b>		●●●
<b>Total waste generation</b>		●
<b>Total waste recycled (share)</b>		●●
	<b>2010</b> <b>2011</b> <b>2012</b> <b>2013</b>	

<sup>1</sup> For each indicator, the reduction is calculated in comparison with the base year 2010 except in the case of "Total paper consumption" where the comparison is with 2011 as no comparable data are available for 2010. In the case of "Total waste recycled", a relative value (out of 100%) is indicated and the percentage value does not include a comparison with previous years.

## 2. ENVIRONMENTAL CERTIFICATION OF OECD BUILDINGS

**OECD Conference Centre** is granted a green building certificate

### Objective:

To obtain the High Environmental Quality (La Haute Qualité Environnementale, HQE®Exploitation i.e. HQE®E) certification for all of the OECD's real estate.

### Definition and Background

Environmental certification programmes are a **voluntary approach to environmental protection**. Green building certificates such as the HQE®E, Leadership in Energy and Environmental Design (LEED), and Building Research Establishment Environmental Assessment Methodology (BREEAM®) promote practices that aim to reduce the environmental impacts of buildings.

HQE®E is a French standard for green buildings. It has 14 indicators that aim to measure impacts on the external environment and to create a satisfactory internal environment. The indicators focus on four topics and are defined by three different performance levels:

CONSTRUCTION	1	Relationship between the building and its immediate environment
	2	Integrated choice of construction products, systems and processes
	3	Low-impact construction site
MANAGEMENT	4	Energy management
	5	Water management
	6	Waste management
	7	Management of operations
COMFORT	8	Temperature and humidity comfort
	9	Acoustic comfort
	10	Visual comfort
	11	Olfactory comfort
HEALTH	12	Sanitary quality of indoor spaces
	13	Sanitary air quality
	14	Sanitary water quality



Certification of the OECD Conference Centre was initiated in 2013 and the green building certificate was granted in June 2014. **Two OECD office buildings had already been certified earlier: the Marshall Building was certified in 2011 and the Delta building in 2012.** In 2014, work will begin on certifying the Château.



### 3. GREEN PROCUREMENT

Site development and contracted services continue to **go green**

#### Objective:

To implement green procurement by ensuring that works, goods and services are chosen with environmentally sustainable characteristics.

#### Definition and Background

Environmentally responsible or 'green' procurement refers to the **purchase of goods and services that are less environmentally-damaging**. It requires an organisation to carry out an assessment of the goods and services' environmental standards in the design, selection and award of projects and in contract performance.

To date, environmental criteria are included in the Executive Directorate's tenders and contracts alongside traditional purchasing criteria where appropriate. In addition, the environmental impacts of on-site renovation projects are monitored.

In 2013, the following actions were undertaken:

- **A positive financial incentive** was added to the contract with Eurogem, the company assisting the OECD with the management of its facilities, to be awarded if the company successfully helps the OECD reduce its energy consumption by 3%/year;
- Eco-friendly, **environmentally certified (FSC™), recycled office paper**, Nautilus, was selected to ensure the use of paper which is of high quality and whose origin can be traced;
- 46 000 letters were sent by the OECD using **the French Post Office's Green Letter** (*"La Lettre Verte"*) service. This service is less costly and more environmentally friendly than the traditional priority service. In addition, express mail is sent using DHL's GoGreen-service and all transport-related greenhouse gas emissions (290 tCO<sub>2</sub>e in 2013 ) are offset by DHL through external climate protection projects;
- Energy-efficient **multifunction printers with Watchdoc printer management software** were installed throughout the Organisation. These printers consume a third of the electricity of the previous ones and make it simpler for users to run a print job on any printer. New printing arrangements help to reduce unnecessary printing;
- **The contract with the furniture supplier Steelcase was renewed**. This company uses environmentally sound production techniques, transport, recycling and re-use. Most of its products are easy to dismantle and up to 99% recyclable.

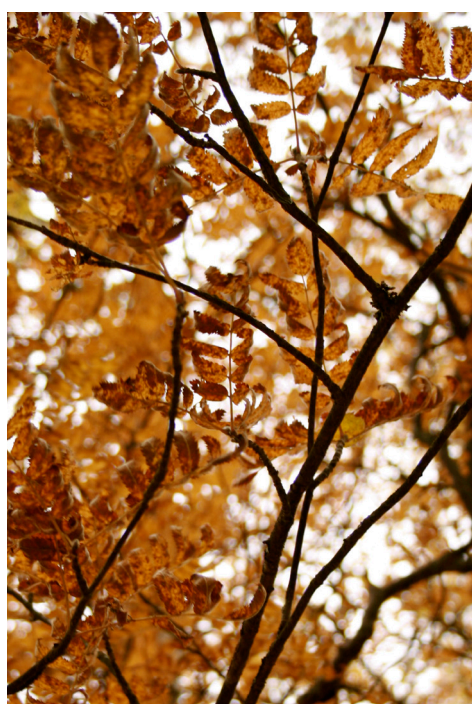


## 4. USE OF NATURAL RESOURCES IN OPERATIONS

Using natural resources in operations in an  
**increasingly efficient manner**

**Objective:**

To optimise the use of energy, water, wood, paper, and other natural resources.



Photos: Liisa Maija HARJU



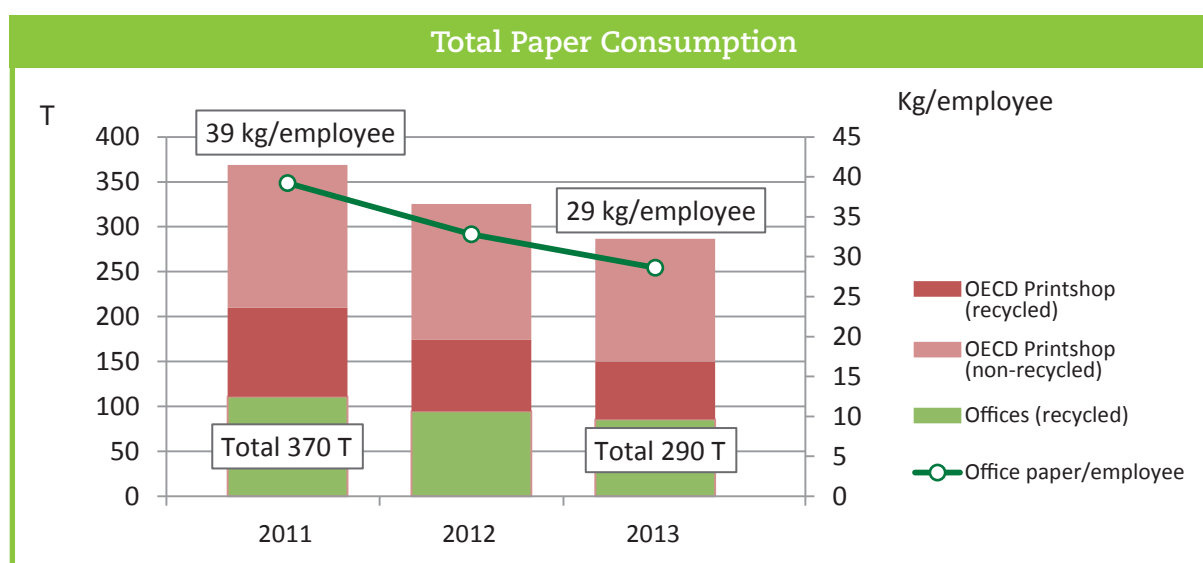
## Paper

Office paper consumption has **decreased by 26%**

### Definition and Background

This indicator includes paper delivered by EXD to offices and paper used in the print shop. Envelopes, magazines and newspapers as well as publications printed off-site are not included. Comparable 2010 data were not available.

40% of the industrial wood harvested annually worldwide is processed to make paper and paperboard. **Paper (50% of consumption) is one of the most recycled products in the world<sup>2</sup>.** Paper-based products are increasingly being replaced by electronic devices and documents, which themselves have environmental impacts that are not readily measurable.



**In 2013, the OECD office workers and print shop consumed 290 tonnes of paper** (of which 52% was recycled paper), i.e. a 22% decrease compared with 2011. **On average, each official consumed 29 kg of recycled office paper a year, i.e. 26% less than in 2011.** The volume of official documents submitted for printing fell from 20 million pages in 2011 to 15 million pages in 2013 (i.e. a 25% decrease).

Consumption decreases as work habits shift towards the increased use of electronic documents and forms. **In 2013, 99% of newspaper and magazine titles (11 900 in total) offered to employees were available in electronic format compared to 96% in 2010.** Also, as noted above, the print management software of the multifunction printers installed in 2013 allows printing jobs that are not picked up from the printers by users to be deleted. The savings generated amounted to 8% in 2013.

<sup>2</sup> ICFPA (2013) Sustainability Progress Report; FAO (2011 and 2012) State of the World's Forests; Pöyry (2012) Future from Fibre, from Forest to Finished Product. Technical report for World Business Council on Sustainable Development/WWF, Gland, Switzerland

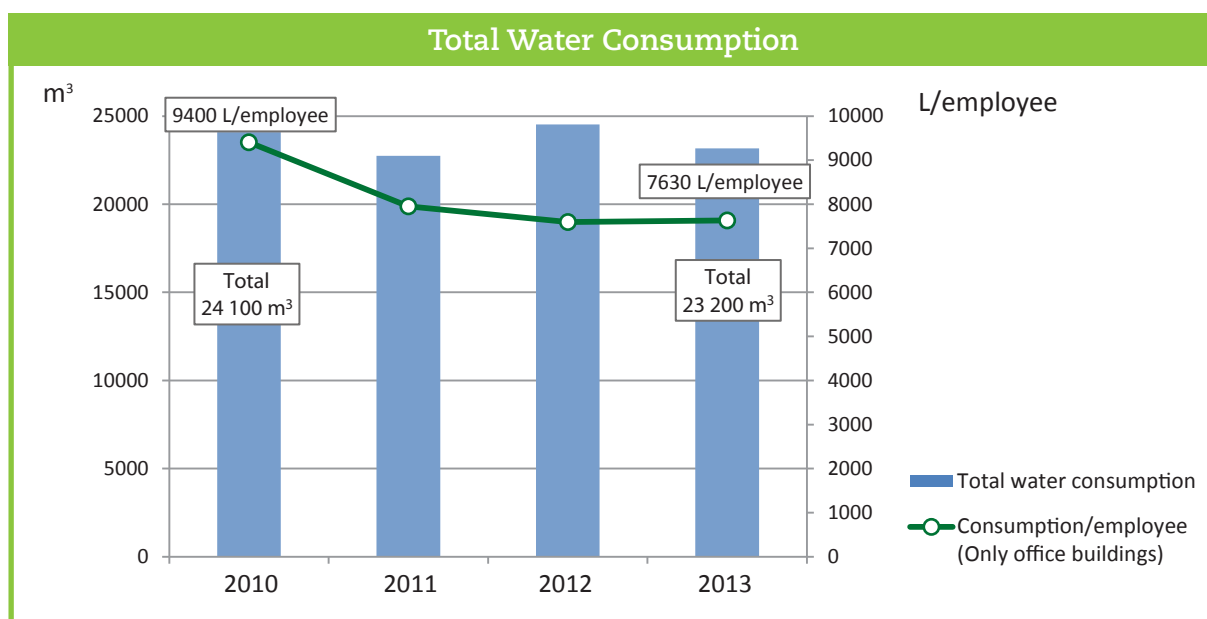
## Water

**4% water savings** were achieved through improved management and leakage detection practices

### Definition and Background

This indicator includes metered water consumption and employee data for the following buildings: Château, Conference Centre, Franqueville, Marshall, Monaco and Octave Feuillet. Detailed data on consumption patterns are not currently available for the other buildings.

Good water management is a longstanding policy challenge. **Total worldwide demand for water is projected to increase by some 55% by 2050**, as a result of growth in demand for manufacturing, energy generation and domestic purposes.<sup>3</sup>



**Total water consumption in OECD facilities amounted 23 200 m³ in 2013, a reduction of 4% compared to 2010.** Water consumption is now managed more efficiently as annual consumption per employee in office buildings **has fallen by 19% since 2010** from 9400 L to 7630 L.

The reductions in 2013 were achieved through **improvements to garden watering practices at the La Muette site** and more accurate monitoring and detection of water leakages in buildings. In addition, an automatic meter reading system has been installed to monitor water consumption and work started on studying the feasibility of **harvesting rainwater on OECD premises**. The consumption data can be explained in part by the average annual rainfall figures.

<sup>3</sup> OECD (2013) Work on Water Overview

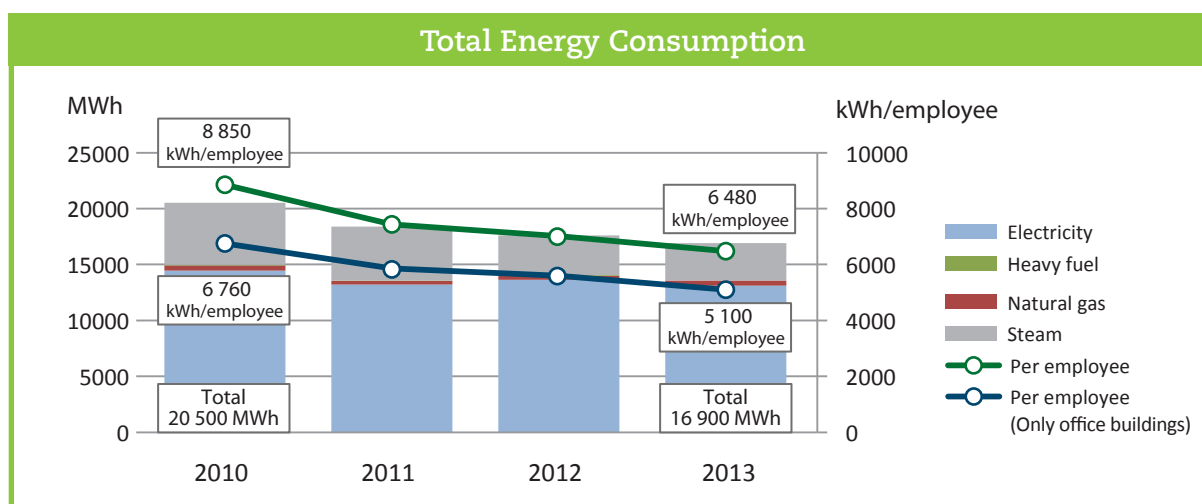
## Energy

**Significant energy savings** have been achieved through efficient energy management

### Definition and Background

This indicator reflects four different energy sources used by the OECD: electricity, heavy fuel oil, natural gas, and steam. The data were extracted from invoices.

Energy efficiency is a way of managing and curbing growth in energy consumption. **Improving the energy efficiency of existing buildings is recommended** because it offers a powerful and cost-effective tool for achieving a sustainable energy future.<sup>4</sup>



Total energy consumption in 2013 amounted to 16 900 MWh, which represents a **reduction of 18% compared to 2010**. The OECD is becoming more energy efficient as consumption has decreased from 8 850 to 6 480 kWh/employee, i.e. 27% reduction from 2010.

The progress made in 2013 is largely due to the use of **smart energy management and technology** such as upgrading the new Windows operating system; switching from traditional light bulbs to LED bulbs in the Conference Centre, communal areas and the La Muette car park; installing double-glazing in the Château; and cleaning the air conditioning system in Delta. The energy consumption data can be explained in part by annual variations in weather conditions.

It is essential to scale up information and educational campaigns in order to raise awareness of environmental issues and operating costs.<sup>5</sup> In this context, the winning idea in the Value For Money Idea Awards initiative launched in 2013, “*Display the OECD’s energy consumption in real time and promote energy use awareness*”, will be implemented in 2014.

<sup>4</sup> IEA (2013) 25 energy efficiency recommendations.

<sup>5</sup> OECD (2013), Greening Household Behaviour: Overview from the 2011 Survey, OECD Studies on Environmental Policy and Household Behaviour, OECD Publishing.



## 5. GREENHOUSE GAS AND VEHICLE EMISSIONS

### Objective:

To limit and offset the release of greenhouse gases, reduce vehicle emissions, and minimise the use of other substances damaging to health and the environment.



Photo: Elisa LOPEZ ROLDAN

## Greenhouse gas emissions

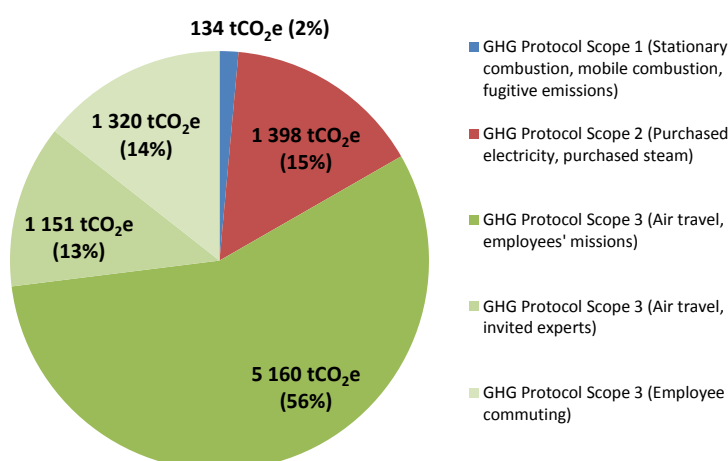
### Greenhouse gas emissions from buildings **continue to fall**

#### Definition and Background

The OECD's GHG emissions are calculated in accordance with the **GHG Protocol methodology** (see Annex 1).

Governments around the world have reached a consensus on the need to achieve large reductions in GHG emissions over the coming decades, to adapt to the impacts of climate change, and to ensure the necessary financial and technical support for developing countries to take action.

#### Total Greenhouse Gas Emissions in 2013



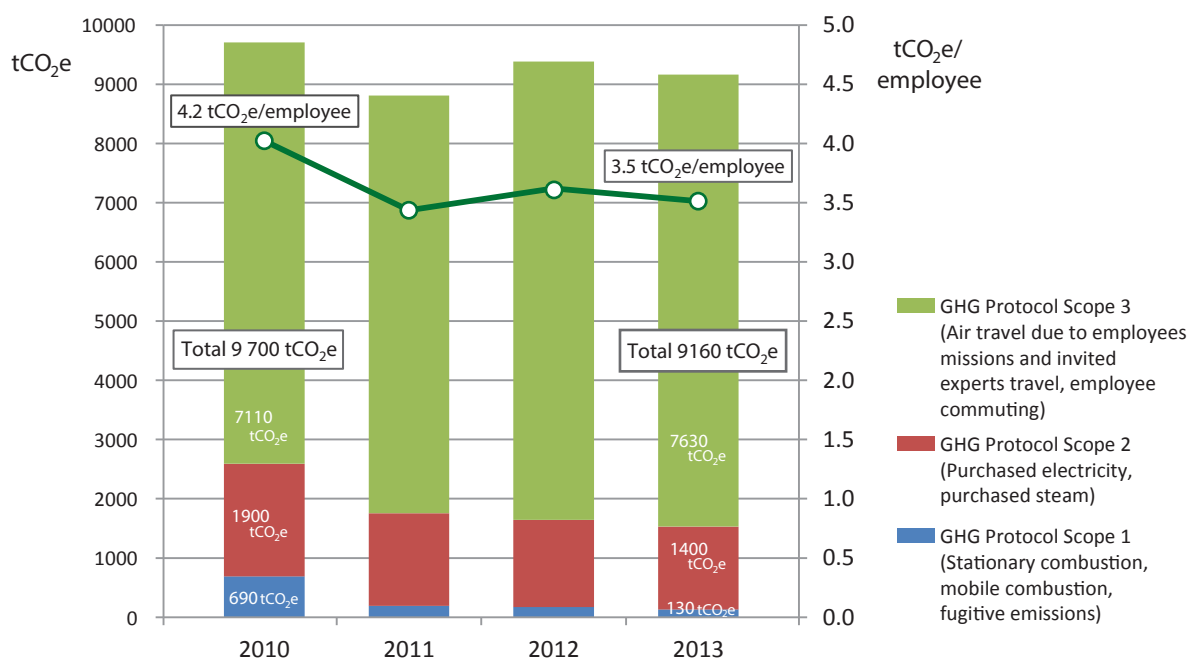
The OECD's greenhouse gas (GHG) emissions in 2013 amounted to **9 160 tonnes of carbon equivalent (tCO<sub>2</sub>e)**. Emissions related to facilities (GHG Protocol Scope 1 and Scope 2 emissions) amounted to 1 530 tCO<sub>2</sub>e and emissions related to employees and invited experts' air travel as well as employees commuting (GHG Protocol Scope 3) to 7 630 tCO<sub>2</sub>e.

In comparison with the base year 2010, **emissions decreased by 540 tCO<sub>2</sub>e (i.e. 6%)** in 2013 as a result of energy efficiency measures implemented in facilities management. The OECD is becoming more efficient overall: since 2010, **per capita emissions have decreased by 0.7 tCO<sub>2</sub>e/employee (i.e. 17%)** and **emissions from buildings have fallen by 14 kgCO<sub>2</sub>e/m<sup>2</sup> (i.e. 40%)**.

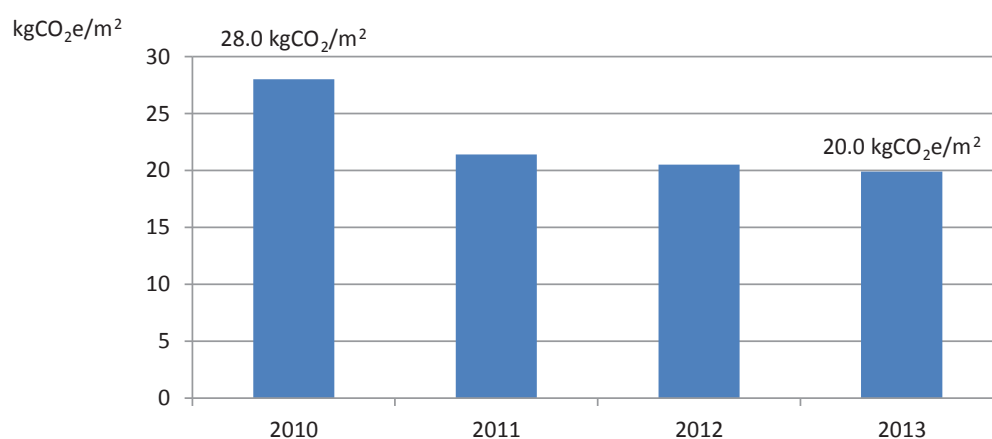
Emissions related to official air travel (included in GHG Protocol Scope 3 emissions) remained stable in comparison with 2012, but increased (550 tCO<sub>2</sub>e, i.e. 10%) in comparison with the base year. The volume of air travel depends on the missions needed to implement the Work Programme and the locations of events to which the Organisation contributes.

<sup>6</sup> It should be noted that, due to a technical error in the GHG emissions reporting tool, this indicator is not correctly displayed in the reports for the years 2011-2012.

### Total Greenhouse Gas Emissions



### Greenhouse Gas Emissions from Buildings



In 2013, the Secretary-General introduced an internal carbon tax to address the growth in air travel-related GHG emissions. This tax (20€/tCO<sub>2</sub>e) is calculated on the basis of the GHG emissions generated by air travel by Directorates/Programmes in the previous year. **The funds collected in 2013 have been allocated to improving the Organisation's remote conferencing facilities.** The impact of these projects will be monitored in the coming years and the tax will remain in place in 2014.



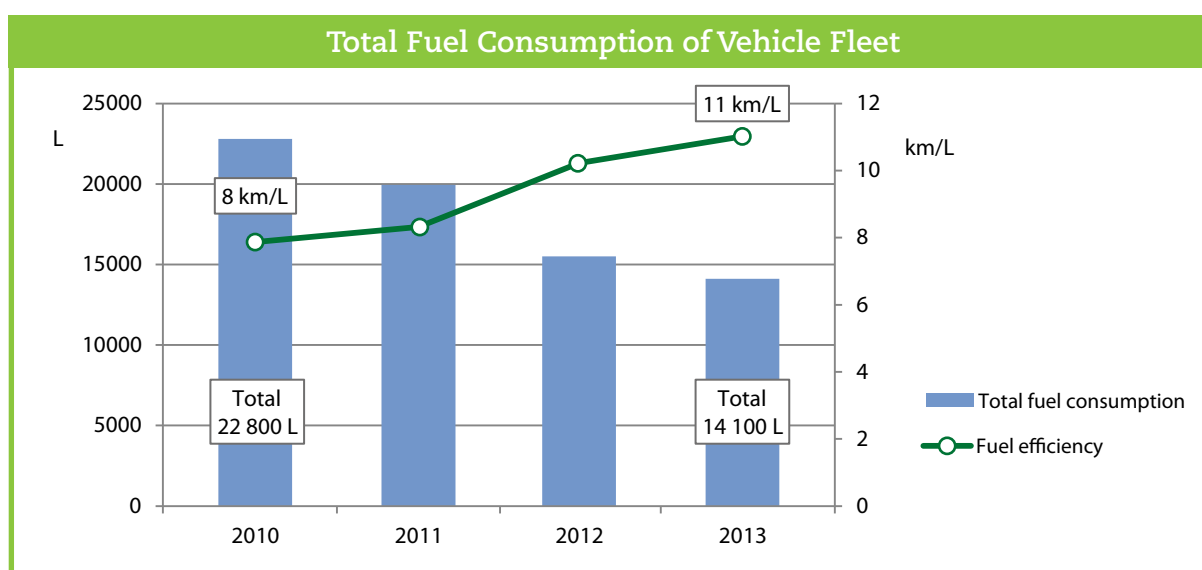
## Vehicle fleet and employee shuttles

OECD uses **fuel-efficient** vehicles

### Definition and Background

The data for this indicator are extracted from fuel invoices and driving reports.

The concentration of pollutants in air raises major concerns over its impact on human health. Human exposure is particularly high in urban areas where economic activities are concentrated. If no new policies are implemented, urban air quality will continue to deteriorate globally and with increasing urbanisation and population ageing **outdoor air pollution will become the leading cause of environment-related deaths by 2050.**<sup>7</sup>



In 2013, the OECD vehicle fleet comprised **15 vehicles: 2 electric and 13 diesel cars**. The size of the vehicle fleet has contracted over the years (21 vehicles in 2010, 15 in 2013) with the result that **the fuel consumption of the fleet has fallen by 38% from 22 800 L/year in 2010 to 14 100L/year in 2013**.

The distances driven have also fallen by 13%, from 179 500 km to 155 600 km, which means that **use of the car fleet in 2013 was more efficient and effective than in 2010**.

Two cars were replaced in 2013: a new shuttle was purchased and the Secretary-General's official car was replaced with a second-hand car.

<sup>7</sup> OECD (2014) The Cost of Air Pollution. Health Impact of Road Transport.

## 6. WASTE MANAGEMENT

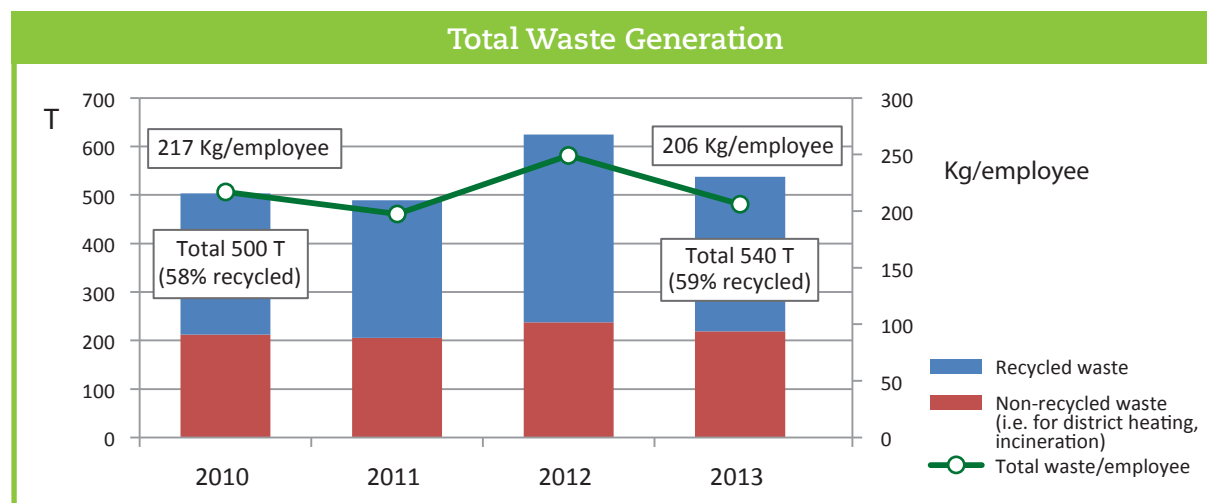
The total amount of waste generated **has remained stable**

**Objective:** To reduce waste and expand re-use, recycling and use of recycled materials.

### Definition and Background

The data for this indicator are taken from the cleaning company, caterer, and EXD reporting. Non-recyclable waste data for the years 2010-2012 relate to the Château, Conference Centre, Franqueville, and Marshall Buildings. The Delta building was included in 2013. Data are not available for the other buildings.

The composition and amount of waste depend largely on consumption and production patterns. While municipal waste accounts for only part of the total waste generated (about 10%), its management and treatment often represent more than **a third of public sector financial efforts to abate and control pollution.**



In 2013, OECD produced 540 T of waste, i.e. a 7% increase on 2010. **Per capita waste generation decreased by 5% from 217 Kg/employee in 2010 to 206 Kg/employee in 2013.** Hazardous (e.g. electronic waste, batteries), liquid (e.g. fat separator waste), and solid (e.g. cans, paper) waste was produced by building and renovation works, restaurants and cafeterias, offices, and the print shop. The majority of the waste generated was paper waste (234 T, 43%) that is recycled.

Waste monitoring has increased significantly. In 2010, only two waste streams were monitored compared to 19 in 2013. This, as well as the increase in staff, explains the increase in the total amount of waste generated. In 2013, a particular focus was placed on ensuring the correct monitoring and disposal of electronic waste (13 T in 2013, 7 T in 2011, no data for 2010), which represents the fastest growing waste stream worldwide. Recycling certificates were monitored and employees offered the possibility of purchasing their obsolete OECD PC equipment. In addition, in 2013, the OECD organised awareness-raising events for employees during the European Week for Waste Reduction.



## ANNEX 1. GHG EMISSIONS INVENTORY METHODOLOGY

### ➤ Background

The greenhouse gas (GHG) emission calculations for the inventory were carried out under the operational control approach set out in the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard. This methodology is the outcome of a partnership between the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). It is internationally recognised as best practice for greenhouse gases emissions accounting and reporting, and is compliant with ISO 14064-1. The reporting of emissions is carried out during an Excel tool on the basis of data available at the time the report is drafted.

Details of the methodology relating to the GHG inventory were reviewed in 2012 by PwC, a third party, on the basis of a detailed methodological report by the OECD and the GHG Protocol Guidelines.

### ➤ Organisational boundaries

The GHG inventory covers the 11 buildings in the Paris area for which the Executive Directorate of the OECD has full operational responsibility (representing 75 183 m<sup>2</sup> and 2 609 employees). Accordingly, the International Energy Agency (IEA), the International Transport Forum (ITF), and the Nuclear Energy Agency (NEA) as well as the offices located outside France are excluded.

### ➤ Operational boundaries

This GHG Inventory includes three categories ("scopes") of emissions that are defined by the GHG Protocol for GHG accounting and reporting purposes:

- **Scope 1** is compulsory and includes direct GHG emissions from stationary combustion sources, i.e. natural gas and heavy fuel oil (HFO), emissions from mobile combustion by the vehicle fleet, and fugitive emissions from refrigeration and air conditioning equipment;
- **Scope 2** is compulsory and includes indirect GHG emissions from the generation of purchased electricity and purchased steam;
- **Scope 3** is voluntary and covers air travel related to employees and invited experts' professional travel and estimates of employees' personal commuting habits.

Even though scope 3 emissions are optional for reporting purposes, they have been included because, in respect of the official travel component, they are relevant to our daily business and significant.

## ➤ Greenhouse gases included in the inventory

GHGs weighed in this methodology are the gases required by the UNFCCC/Kyoto Protocol: carbon dioxide (CO<sub>2</sub>), hydrofluorocarbons (HFCs), methane (CH<sub>4</sub>), nitrogen trifluoride (NF<sub>3</sub>), nitrous oxide (N<sub>2</sub>O), perfluorocarbons (PFCs), and sulphurhexafluoride (SF<sub>6</sub>).

GHG emissions are expressed in tonnes of carbon equivalent (tCO<sub>2</sub>e) or in kilogrammes of carbon equivalent (kgCO<sub>2</sub>e). Only GHG emissions from activities over which OECD has direct operational control are considered in the boundaries of the inventory:

**Table 1. Global warming potential of GHGs that OECD emits.**

Source Climate Change 1995. The Science of Climate Change. Summary for policymakers and Technical Summary of the Working Group I Report.

Greenhouse gas	OECD source	Global warming potential, GWP (Time horizon: 100 years)
Carbon dioxide (CO <sub>2</sub> )	Purchased electricity, purchased steam, stationary and mobile combustion, air travel, commute	1
Methane (CH <sub>4</sub> )	Stationary and mobile combustion, air travel, commute	25
Nitrous oxide (N <sub>2</sub> O)	Stationary and mobile combustion, air travel, commute	298
HFC-134a, Hydro fluorocarbon gas	Cooling system and air conditioning maintenance operations	1300
R-404A, a blend of Hydro fluorocarbon gas	Cooling system and air conditioning maintenance operations	3260

## ➤ Base year (2010)

2010 has been chosen as the OECD's reporting base year. In order to accurately track our progress we will adjust our base year emissions inventory for significant qualitative or quantitative structural or methodology changes. The significance threshold is considered to be 5%. Base year emissions recalculation was not seen as necessary for the year 2013.

## ➤ Data

*Scope 1, Scope 2:* Data are extracted from monthly or annual invoices

*Scope 3:* Air travel data is based on the methodology of the International Civil Aviation Organization (ICAO) and obtained from the OECD air travel agency; commute data is indicative only, based on employees' home postal codes and statistics from the French National Institute for Statistics and Economic Studies (INSEE).

## ➤ Emission factors

Direct measurement of GHG emissions by monitoring concentrations and flow rates is not common practice. More often, the approach for calculating GHG emissions consists in applying documented emission factors. These factors are calculated ratios relating GHG emissions to a proxy measure of activity at an emission source. The OECD tool's emission factors are checked for accuracy every year to ensure that the most up-to-date emissions factors are used.

	#	EMISSION TITLE	EMISSION SOURCE	EMISSION FACTORS		
				Value	Source	Uncertainty
SCOPE 1	1-1	Emissions from stationary combustion	Natural gas	0.2020 kgCO <sub>2</sub> /kWh	GHG Protocol 2010	5%
			Heavy fuel oil	2.9393 kgCO <sub>2</sub> /L	GHG Protocol 2010	5%
	1-2	Emissions from mobile combustion	Vehicle fleet (petrol)	0.2070 kgCO <sub>2</sub> /km	GHG Protocol 2010	5%
			Vehicle fleet (diesel)	0.1979 kgCO <sub>2</sub> /km	GHG Protocol 2010	5%
	1-4	Fugitive emissions	Refrigerant HFC - 404A	3260 kg/GWP	GHG Protocol 2010	50%
			Refrigerant HFC-134A	1300 kg/GWP	GHG Protocol 2010	50%
SCOPE 2	2-1	Purchased electricity	EDF Electricity	0.057 kgCO <sub>2</sub> /kWh	EDF 2012	15%
	2-2	Purchased steam	CPCU steam	0.195 kgCO <sub>2</sub> /kWh	ADEME Base Carbone 2012 ("Paris et communes limitrophes")	30%
SCOPE 3	3-6	Air travel	Employees' air travel for missions	N/A	ICAO Air Travel Agency Report	N/A
	3-7	Employee commuting	Metro	0.0057 kgCO <sub>2</sub> e/person.km	ADEME Base Carbone 2012	20%
			Bus	0.0666 kgCO <sub>2</sub> e/person.km	GHG Protocol 2010	20%
			Motorcycle (<750cm <sup>3</sup> )	0.0680 kgCO <sub>2</sub> e/person.km	ADEME Base Carbone 2012	60%
			Motorcycle (>750cm <sup>3</sup> )	0.0792 kgCO <sub>2</sub> e/person.km	ADEME Base Carbone 2012	60%
			Private car (petrol)	0.2070 kgCO <sub>2</sub> e/km	GHG Protocol 2010	60%
			Private car (diesel)	0.1979 kgCO <sub>2</sub> e/km	GHG Protocol 2010	60%
			RER regional train	0.0057 kgCO <sub>2</sub> e/person.km	ADEME Base Carbone 2012	20%
			TGV high speed train	0.0037 kgCO <sub>2</sub> e/person.km	ADEME Base Carbone 2012	60%
			Other: Invited experts' air travel	N/A	ICAO Air Travel Agency Report	N/A



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