

Factor-X « Bilan Carbone® » in 2011

January 2012

Summary

Factor-X is its first client! Factor-X regularly conducts and evaluates its carbon footprint, in order to inform its clients and to raise awareness amongst its team members on potential improvements.

Factor-X is a service company with very de-materialized activities. The carbon footprint of Factor-X underlines the following quantitative aspects:

- The impact of finances is a calculation innovation supported by the company itself, and also the major contribution to Factor-X's Bilan Carbone®
- Travels come next, and combines clients visits and home-work commuting. This item is under continuous improvement and should be continuously monitored
- The carbon footprint of one Factor-X employee reaches 5,5 tons equivalent CO₂ per year on a traditional scope, and 34 tonnes if financial aspects are counted. This should make us all think about the impact of finance on the environment.
- For each ton equivalent CO₂ emitted by Factor-X, we help our customers spare 8000 tons.
- For 2012, we plan to keep improving our travel modes and the provision of supplies, but most importantly to manage our finances differently.

Discover all details on the methodology, detailed results and improvement proposals hereafter.

Context

Greenhouse effect

Greenhouse effect is often heard of in the news. Most of the time, the greenhouse effect is improperly used in its relationship with climate change, without being really understood. The greenhouse effect is the mechanism allowing the energy received from the sun not to be directly sent back to space. Indeed, the earth receives energy from the sun in electromagnetic form. Part of it is absorbed by the earth, which emits it again in infrared form. Because it naturally contains "greenhouse gases" such as carbon dioxide (CO₂) and methane (CH₄), which can capture this radiation, the atmosphere can attain an average temperature of 15°C on the surface of the earth. Without greenhouse effect, the average temperature would drop to -18°C. Greenhouse effect is therefore essential!

Human impact

What is the current problem then?

Since the industrial revolution and the related development of polluting activities, human beings emit in the atmosphere considerable amounts of all types of gases, amongst other CO₂ and CH₄, leading to increased concentrations. The greenhouse effect is therefore reinforced, and irremediably increases the average surface temperature. Already visible today, climate change will be reinforced in the course of the 21st century. Variations in temperatures, rainfalls, v-winds and related meteorological extremes (storms, heat waves, draughts...) will occur at time scales that will make ecosystem adaptation difficult. For example, the disappearance of beechwood in our regions is expected by the end of the century. Beyond the direct environmental impact, human societies will also be concerned by these changes. For example, the temperatures reached during the heat wave of 2003, and the related 70.000 deaths in Europe, will become a possible average for the summer periods at the end of the century.

But this extreme event has shown the limits of our societies to face these events, and it was obvious that major equipment (power plants, public transportation...), housing, buildings, infrastructure, cities, environment... were totally inadequate to such climatic conditions.

Bilan Carbone® (carbon footprint)

If we want to drastically limit climate change and its impacts, mitigation – consisting in the reduction of greenhouse gas emissions - is a necessary approach.

The Bilan Carbone® tool has been created in this context, in order to account for greenhouse gas (GHG) emissions of all activities of an organisation, by identifying its most polluting activities and initiate changes toward continuous improvement. This approach is crucial for the identification of the main sources of emissions and to target priority actions in a suitable way.

Providing services to help our clients in establishing their Bilan Carbone®, Factor-X wishes to be exemplary and tries to apply best practices on a daily basis in order to reduce its environmental footprint. This is why Factor-X has calculated its carbon footprint, in order to identify emission sources on which to focus its efforts. The method applied is Bilan Carbone®, a recognised and widespread tool developed by French ADEME and currently supported by the [association bilan carbone](#).

All company activities are integrated in the calculation, including transport (home-work and for professional activities), food, activities (use of computers, printers, server,...), office (energy, furniture...) etc. By doing this, we are our first client, keen to ensure the coherence and relevancy of the methods we use.

Calculation unit: the kilo equivalent CO2

Several GHG exist: CO2 is the best known and most frequently encountered. But other gases, natural or artificial, have the same effect, with a more or less marked effect. For example, 1 kg of methane, gas issued from organic fermentations, acts as equivalent to 21 kg of CO2, and 1 kg of nitrogen dioxide as equivalent to 310 kg of CO2. All gases issued from production processes are transformed and expressed in a unique “equivalent” unit (in short: “eq”).

This equivalences method, formalised by the [IPCC](#), is used to express all GHG impacts in a single unit, the kilo (and tonne) equivalent CO2.

2011 footprint, “classical” scope

The 2011 carbon footprint (Bilan Carbone®) of Factor-X activities amounts to **60 tonnes equivalent CO2**.

By way of comparison, Factor-X 2009 carbon footprint amounted to 28 tonnes eq CO2. However, it is important to stress that in 2009 the company employed 4 people, while they are 11 employees in 2011.

This corresponds to an improvement per employee, at 7 tonnes eq CO2 in 2009 and 5,5 tonnes today. This is one quarter of the total emissions of each Belgian individual (according to national statistics, including all life aspects and consumption with import).

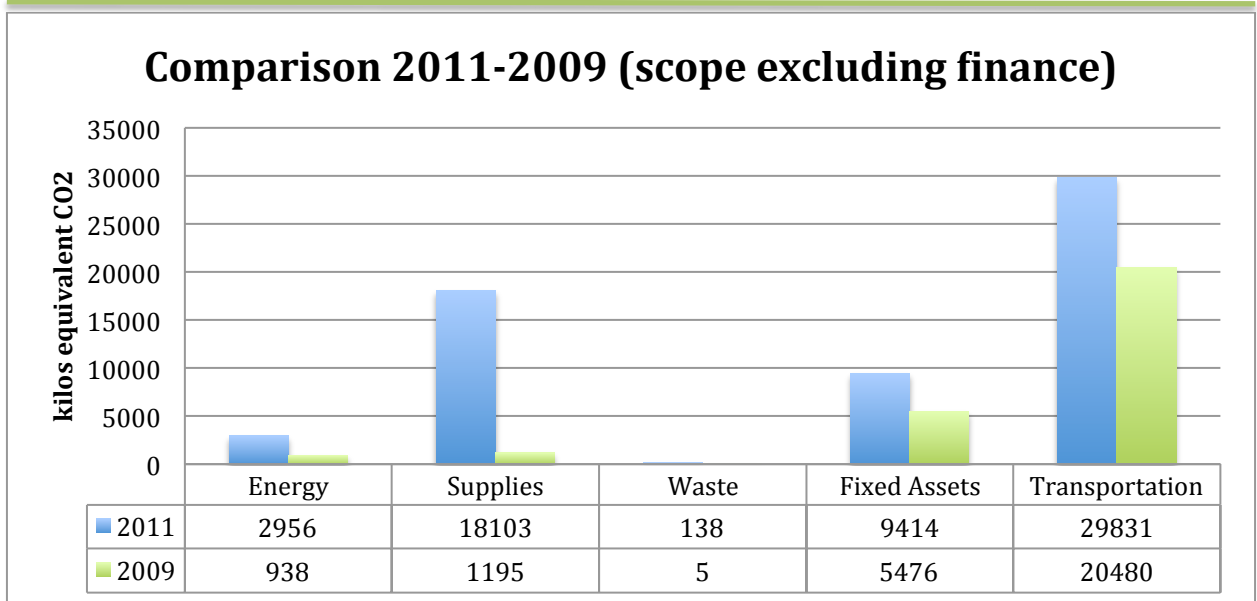


Figure 1 : comparison of the carbon footprint of Factor-X in 2011 and 2009, scope excluding finance

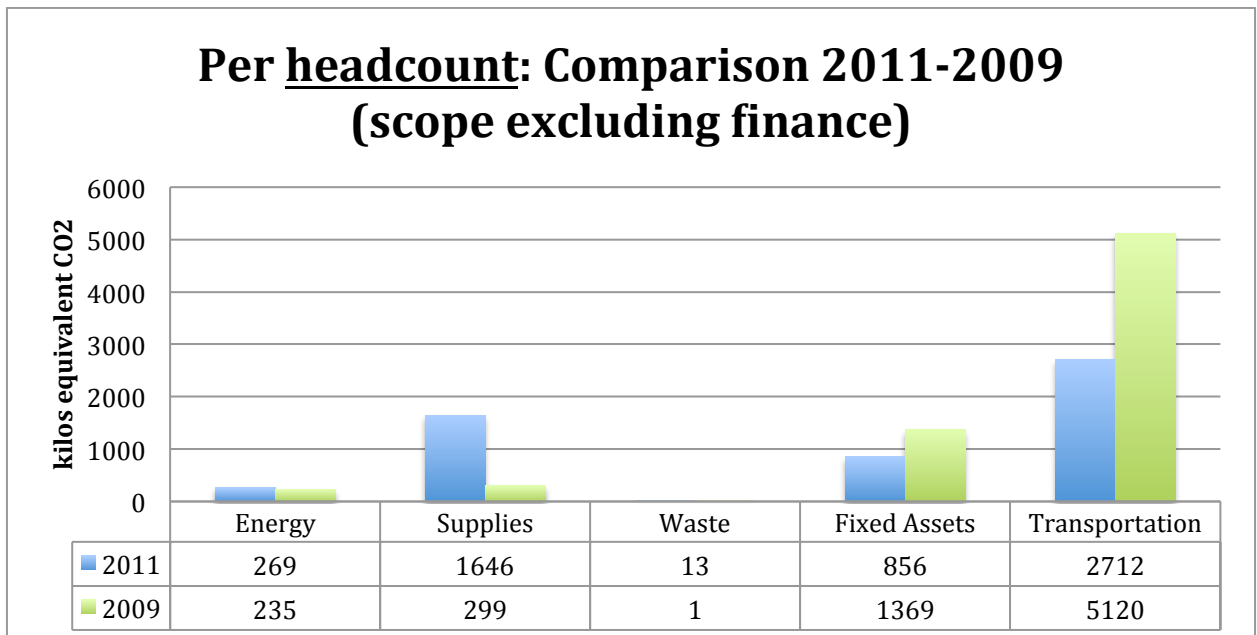


Figure 2 : comparison of the carbon footprint of Factor-X in 2011 and 2009 per headcount, scope excluding finance

22% improvement even though the scope is enlarged

In order to analyse the origin of this improvement in a short time period of two years, it is useful to compare the spread of emissions between 2009 and 2011.

Key features are:

- Transportation has been significantly reduced. This is mainly due to the fact that the vast majority of employees strictly apply to themselves our usual recommendations: work-home travel is mainly done by public transportation (underground, train, bus, company bicycles, walking) and professional travel is mainly done by train/Thalys/TGV or car sharing when possible. Additionally, the engine size of cars that are used is smaller (5 or 6 horsepower). The number of travelled km by car has evolved much less (from 50.000 to 65.000 km) than the number of employees (from 4 to 11).
- Fixed assets and waste are approximately unchanged, mainly because of a better use of the available space.
- The proportion of supplies has significantly increased for two reasons:

- On the one hand, the use of consumables, especially IT-related, has significantly increased because of the installation of an enterprise network.
- On the other hand, the scope has been enlarged in order to take into account all meals taken during the working hours (lunch acquired during working days). This aspect was not taken into account in 2009, but it was decided to include it now in order to raise everyone's awareness on the impact of our food choices, not only when going to the restaurant. This adds 1,98 tonne eq CO2 to the carbon footprint.
- Finally, the relative share of energy in the footprint has significantly increased, even though efforts have been realized (including switch to green electricity). This is due to the fact that domestic energy used by employees during teleworking days has been taken into account. From a strictly carbon footprint viewpoint, teleworking is less advantageous than expected: the office is heated and lighted for those who work there while teleworking employees do the same at home. And this consumption annihilates half of the GHG emissions reduction from avoided transportation. Social gains and time saving related to teleworking remain valuable of course. More specifically, the « carbon » offset delivered by teleworking relies heavily on the commuting mode which is avoided by the teleworker. There is a gain as soon as 22 km by cars are avoided, while there is a loss if less than 110 km of train commute are saved.

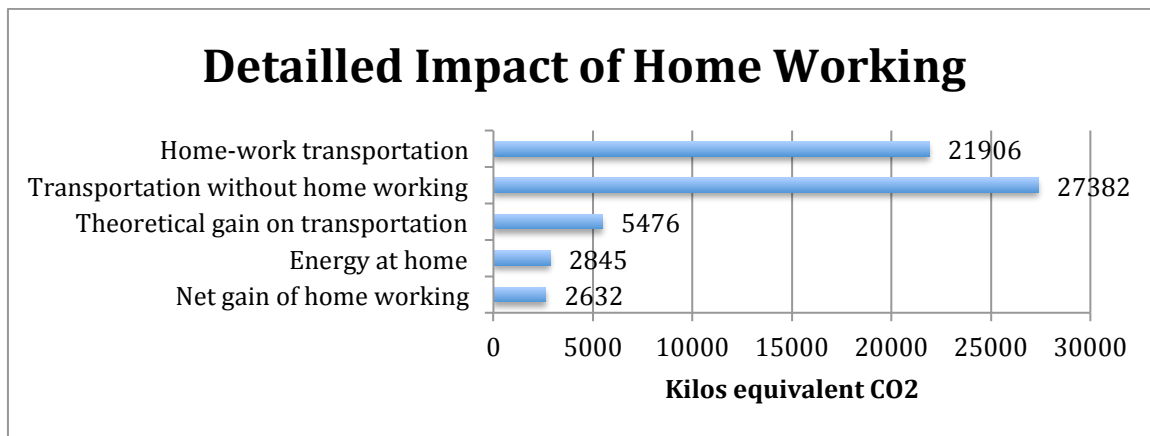


Figure 3 : impact of teleworking on the carbon footprint of Factor-X

2011 Carbon footprint extended to finance

Innovative feature: scope extended to finance

Always eager to stimulate progressive thinking on the environmental implication of human activities, Factor-X innovates regularly. Since 2010, we systematically suggest our clients to also evaluate the impact of their cash investment and other financial aspects. It is therefore logical to apply this approach to ourselves, and to draw the necessary conclusions, in particular in terms of action plan.

When including this aspect, the 2011 Bilan Carbone® of Factor-X amounts to **372 tonnes equivalent CO2**, spread as follow:

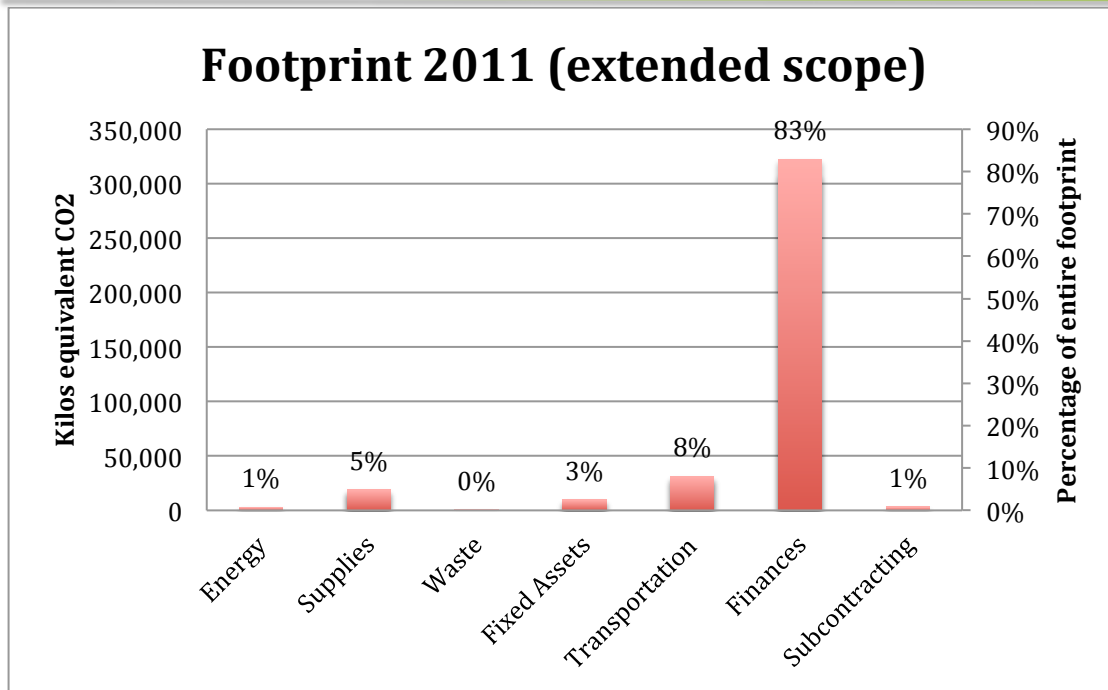


Figure 4 : carbon footprint of Factor-X in 2011 with extended scope (including finance)

As shown above, as soon as finance is taken into account, it takes a very prominent place. It is therefore useful to provide details on how this result has been obtained.

The impact of finance

Since the pilot project Exit CO2 which aimed at helping families to reduced their carbon impact, Factor-X has developed emission factors for the GHG generated by cash investment and other financial aspects. Such an approach is based on reports by Utopies and Friends of the Earth, and by WWF and Vigéo. The overall principle is: unspent cash is usually placed on a bank account, which “produces” interests for its owner. To deliver such interests, the bank achieves several financial operations, and notably lend the money for activities that emit GHG. Therefore, any bank account, savings account, share or stock do generate GHG emissions to increase our wealth. The same rationale applies to other placement product of capital, such as (life) insurance.

As we recommend this approach to our clients, it is also appropriate that we apply it t ourselves as company and as individuals. This is why three financial items have been evaluated: Factor-X cash flow position (as available on the company’s bank account), the employees savings, and the amounts paid to the Belgian state, based on the salaries (national office for social security, income taxes...). For this last contribution, we used the average ratio in Belgium of 2500 € of GDP per ton equivalent CO2 (assuming that the state uses its money to back the national economy, hence generating emissions according to the national average). Such investments have an impact about five times lower in terms of GHG.

As shown on Figure , keeping the cash flow on a traditional debit bank account instead of placing it on environmentally-friendly one (such as saving accounts and investments ranked by the [Réseau Financement Alternatif](#)), is clearly the most impacting measure, and simultaneously the most easy to change! It is the same for the employees savings.

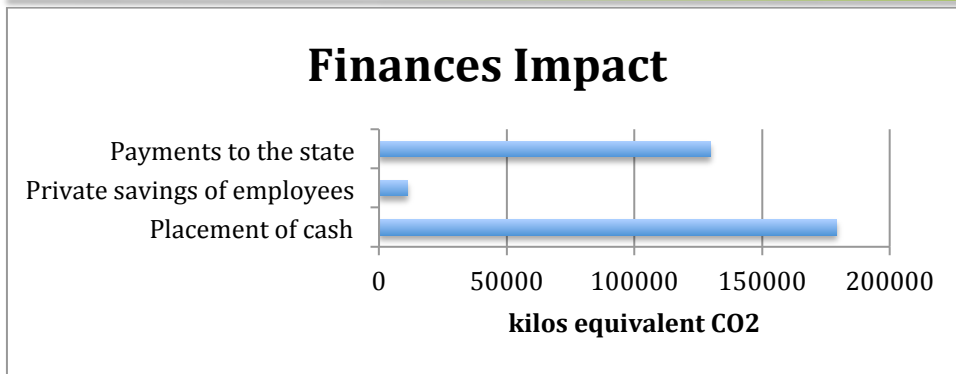


Figure 5 : impact of various financial items on the carbon footprint of Factor-X

Carbon balance of Factor-X sprl

Finally, it should be noted that the total GHG emissions of Factor-X, i.e. 372 tonnes eq CO2 in 2011 (including finance), represent less than 0,013% of the emissions reductions suggested to all our clients during the year 2011.

In other words, each tonne of CO2 emitted by Factor-X enables approximately 8.000 tonnes of CO2 to be avoided at one of our clients.

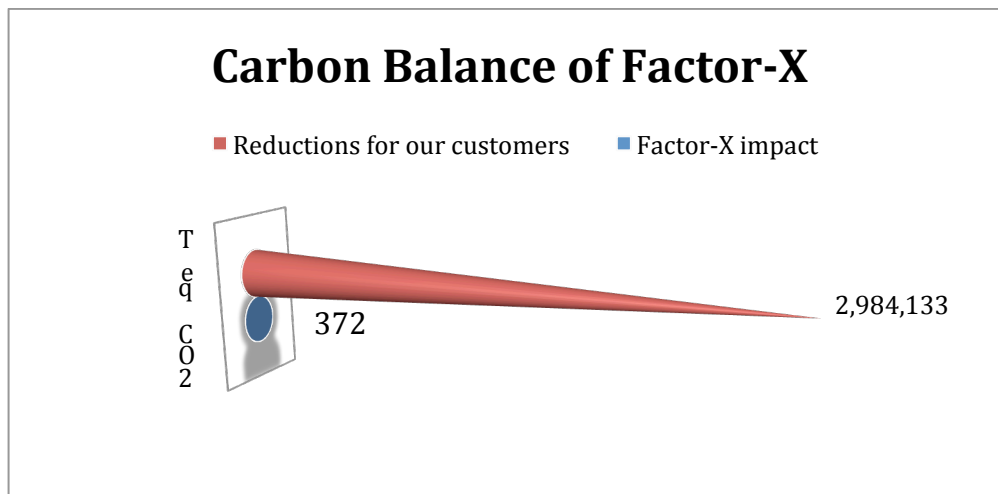


Figure 6 : carbon balance of Factor-X

Responsible commitment and Carbon Balance of Factor-X

Factor-X is its first client!

We accompany enterprises and communities in defining and implementing their carbon strategy. We work on a daily basis to establish action plans to reduce GHG emissions.

Since 201, we also roll out similar approaches related to the water footprint and ecosystem services valuation. Our ambition is to guide our clients in all their environmental issues.

Our strength is to believe in what we are doing and to be a credible partner because we apply to ourselves the recommendations we put forward to our clients.

From an environmental viewpoint, this means:

- A small office space: Factor-X occupies 110 m2 for 11 consultants
- Low energy consumption of our offices (efficient lighting system, low heating consumption thanks to passive gains, 100% green electricity, low water usage – see our water footprint)

- Plans for a refurbished ecologic low impact shared office for enterprises that repair the environment, with organic garden. The high quality environmental renovation has been delayed due to permitting issues, but will be finalised in 2013
- Rational use of transportation means
 - Top priority given to train and subway transport everywhere where it is possible
 - Minimal use of cars (only when no other option is available)
 - Daily use of teleconference with clients and partners to conduct assignments
 - Work-home journeys by bike are made possible (office located near the train station)
 - No air transportation unless exceptional circumstances
- Maximum dematerialization of working documents and reports, priority is given to e-reports vs. paper version
- Careful printing of deliverables when necessary
 - Use of 100% recyclable FSC labelled, de-inked without bleach or brightener
 - Double sided by default, except on specific request of clients
 - Vegetal ink, re-charge of ink cartridges
- Careful management of water usage and improvement actions
- Systematic conduct of the carbon / water footprint of our activities in the framework of carbon /water footprint assignments and when relevant, balancing the benefits of the project with the potential negative impact on the environment

From social and labour viewpoints, this means:

- Strict obedience to social laws and regulations toward our employees (including but not limited to decent work, freedom of association, non-discrimination, equal pay for women and men, narrow range of remuneration span)
- Training schemes going well beyond common practices and regulations
- Transparent and collaborative ways of developing the company's activities
- Encouragement of social and environmental involvement of employees in complementary projects, and systematic involvement of stakeholders for various horizons in analysis and action plans of specific assignments
- Importance of ethics and respect: in our daily professional practice, we consistently think about how to act best, and we attempt to always behave with respect for everyone.
- Transmission of knowledge and know-how: 25 days of work have been dedicated to assist for free projects with a high environmental or societal output.

Action plan

Since 2007 first diagnostic, Factor-X emissions per headcount have been reduced.

These improvement measures are part of our will to reduce our carbon footprint of at least 5% per year, in order to achieve by 2050 a sustainable and fair level at world level (Factor 12 for Belgian enterprises). Thanks to our efforts, Factor-X is today on track with this 5% reduction objective, as illustrated on figure 7.

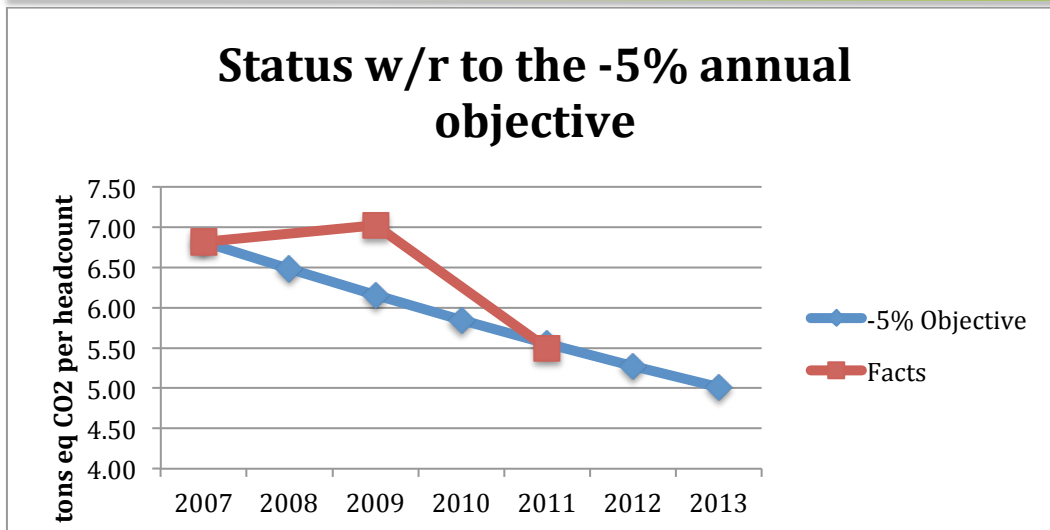


Figure 7 : annual Variation of the carbon footprint of Factor-X per employee in view of the 5% annual reduction objective (scope excluding finance)

In line with the inclusion of finance in our scope, we redefine the objective for the years to come as per figure 8.

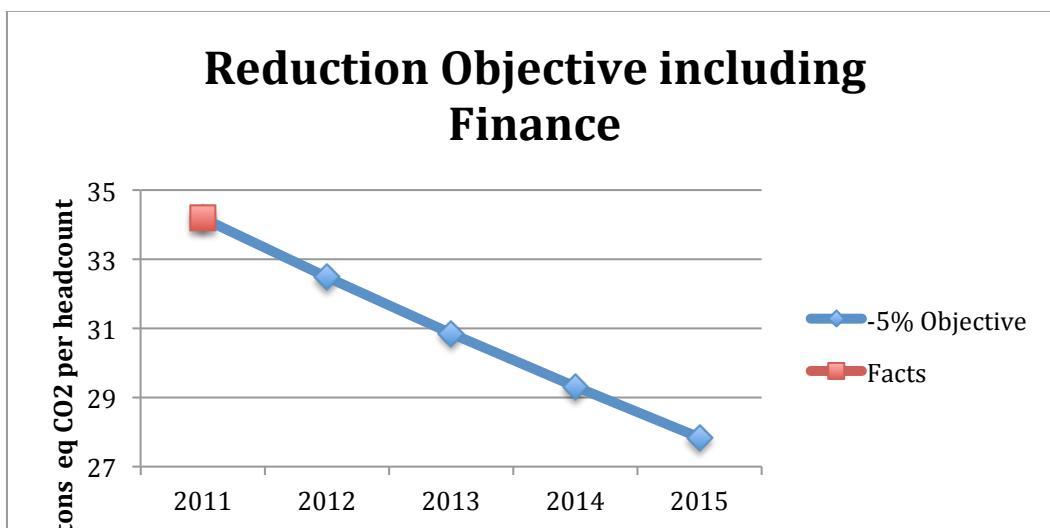


Figure 8 : new objective of 5% yearly reduction with inclusion of finance in the scope

Objectives for 2012

In order to pursue this global 2050 objective, and in very practical terms, in 2012 we will need to ensure that the following actions are implemented:

- Continue to reduce the use of cars for all transportation, and carefully consider beforehand the relevancy of each travel;
- Reduce our IT expenses and the use of related consumables;
- Improve the carbon and social usage of the company's cash flow by maximizing the deposit on a sustainable savings account, and convince the employees to do the same.

Our projects for 2012 include:

- Participation to the [time bank](#) : each employee will spend 2 days of paid work to help an association chosen by Factor-X to implement a project that everybody cares for.
- Allow collaborators who wish it to spend 2 days per month to develop a personal environmental project, assisted and co-financed by Factor-X (intrapreneurship).
- Provision of 1% of our turnover to sustain local, social, solidary and environmental activities according to the principles of « [1% for the planet](#) ».