Mandatory Greenhouse Gas (GHG) Emissions Balance

ITRON France

Year 2014

TABLE OF CONTENT

1. INTRODUCTION

1.1 PURPOSE

ITRON France is a legal person and private company employing over 500 individuals under the same SIREN number. In this respect, ITRON France must audit its direct and indirect GreenHouse Gas (GHG) emissions (category 1 and 2).

The following individual is responsible for handling the project within ITRON:
Ronan TISSIER
Responsable HSE / HSE Manager
ITRON France
1 allée de Toscane
69800 Saint Priest
Tél :04.72.47.38.31
Mail : ronan.tissier@itron.com

The information and data recorded in this document are provided by ITRON, which has checked this document, and guarantees the authentic nature of and is responsible for content.

The balance was carried out using Bilan Carbone® V7.1.06 software by Association Bilan Carbone (ABC).

1-2 - THE REGULATORY FRAMEWORK

Article 75 of law 2010-788 of 7/12/2010 (Grenelle law II), and its enforcement order (decree no. 2011-829 of 11 July 2011) introduced the obligation for companies to audit their GHG emissions.

Companies with more than 500 employees (in overseas departments and regions, this threshold is lowered to 250) are affected. Personnel numbers are calculated according to the provisions of article L.1111-2 of the Labour code.

The companies affected must carry out an inventory of greenhouse gas emissions per activity in compliance with the requirements of the “Grenelle II” method. The aim is to determine the amount of greenhouse gas emissions generated during the year preceding the year of the balance or, should data not be available, the penultimate year.

Emissions are expressed in equivalent tons of carbon dioxide. Target greenhouse gases will correspond to the six gases listed in the Kyoto protocol (order of 8/24/2011):

- Carbon dioxide (CO2)
- » Methane (CH4)
- » Nitrogen protoxide (N2O)
- » Hydrofluorocarbons (HFC)
- » Perfluorocarbons (PFC)
- » Sulphur hexafluoride (HF6)

The regulatory GHG balance is limited to categories 1 & 2, i.e.:

1- Direct emissions, produced by the fixed and mobile sources required for company operations (leaks and sources, fleet of vehicles used by the company, processes, etc.).

2- Indirect emissions associated with the consumption of electricity, heat and steam, as required for company operations (electricity purchased, etc.).

Emissions are expressed in equivalent tons of carbon dioxide.

The balance must be accompanied by a summary of the actions presenting, for each emissions category, the actions planned by the company over the 3 years following the balance. This summary indicates the expected overall reduction in the volume of gas greenhouse emissions.

1-3 – CONTENT OF THE REPORT

This report is based on the framework provided in the guide drafted by the MEDDE (Ministry of the Ecology of Sustainable Development and Energy) with the title "Méthode pour la réalisation des bilans d'émissions de gaz à effet de serre conformément à l'article 75 de la loi n°75 de la loi n°2010-788 du 12 juillet 2010 portant engagement national pour l'environnement (ENE) _ version2".
(Method for greenhouse gas emission balance in accordance with article 75 of law no. 75 of law no. 2010-788 of July 12, 2010 on the national commitment to the environment (ENE) _ version2)

The final part of this report presents the summary of the reduction actions planned over a 3-year period.

1.4 DEFINITIONS

A few definitions from the aforementioned Ministerial method:

Greenhouse gas (GHG)
gaseous component of the natural or man-made atmosphere, which absorbs and emits radiation at a specific wavelength of the infrared spectrum emitted by the surface of the Earth, the atmosphere and clouds. The greenhouse gases listed in the order of 24 August 2011 are considered.

Greenhouse gas (GHG) emissions balance
evaluation of the total volume of greenhouse gases emitted into the atmosphere over one year by the activities of the legal person in the national territory, expressed in equivalent tons of carbon dioxide.

Emission category
All GHG emissions headings. Three emissions categories are identified: direct GHG emissions, indirect GHG emissions relating to energy and other indirect GHG emissions. These categories are referred to as "scopes" in other reference documents.

Verifiable data
Data which can be checked, i.e. justified or documented (particularly in the context of the transmission of the balance of the legal person to the prefect, article R 229-48 of the environmental code).

Direct GHG emission
emission of GHG from fixed and mobile sources of greenhouse gases controlled by the legal person.

Indirect GHG emission associated with energy
emission of GHG, from the generation of electricity, heat or steam imported or consumed by the legal person for its operations. Other indirect GHG emission: emission of GHG, other than GHG emissions associated with energy, as a consequence of the activities of a legal person, but from sources of greenhouse gases controlled by other entities.

Emission or removal factor for greenhouse gases
factor indicating GHG removal or emission activity data.

Emission headings
GHG emissions from homogeneous sources or types of sources. An emissions heading can be considered as a sub-category.

Global Warming Potential (GWP)
factor describing the impact of the radiative forcing of a given mass of greenhouse gas over an equivalent mass of carbon dioxide for a given period.

2. BALANCE OF GREENHOUSE GAS EMISSIONS

2.1 DESCRIPTION OF THE COMPANY

2.1.1 - Administrative information

Company name: ITRON France
NAF code: 2651B
SIREN code: 434 027 249
Adress: 52, rue Camille Desmoulins
92130 Issy Les Moulineaux

Number of employees: 1148 personnes au 31/12/2014

2.1.2 - Brief description of operations

Itron is a world-leading technology and services company dedicated to the resourceful use of energy and water. We provide comprehensive solutions that measure, manage and analyze energy and water. Our broad product portfolio includes electricity, gas, water and thermal energy measurement devices and control technology; communications systems; software; as well as managed and consulting services. With thousands of employees supporting nearly 8,000 customers in more than 100 countries, Itron applies knowledge and technology to better manage energy and water resources. Together, we can create a more resourceful world.

2.1.3 - Selected consolidation mode

Standard ISO 14064-1 describes two consolidation modes used to determine the organizational scope:

1- IThe “share of capital” approach: the organization consolidates emissions for equipment and activities, equivalent to capital invested in the latter.

2- The “control” approach:
- financial: the organization consolidates 100% of emissions for units which it controls financially,
- or operational: the organization consolidates 100% of emissions for units which it controls operationally (i.e. it operates).

The Ministry’s method adopts the “control” approach, limited to sites identified under the SIREN number of the company, and required to carry out a greenhouse gas emissions balance.

On this basis, the organizational scope of the company integrates all equipment and activities controlled, for all sites identified under its SIREN number, and the associated emissions must therefore be consolidated. This legal person must specify if the control method adopted is “financial” or “operational”.

ITRON opted for the consolidation method based on financial controlling, in the context of this balance.

2.1.4 - Description of the selected organizational scope

The organizational scope integrates all French sites of the company: the emissions associated with the various sites must therefore be consolidated.

ITRON France has registered the following sites under the same SIREN number in France :

Site name	Location	Siret code	Surface area	Number of employees*
ITRON france (head office)	Issy Les Moulineaux	434 027 249 002 19	3200m²	145
ITRON France	Saint Priest		939m²	
ITRON France	Argenteuil	434 027 249 00 110	5 000m²	64
ITRON France	Mâcon	434 027 249 000 29	18 917m²	352
ITRON France	Reims	434 027 249 000 86	6 045m²	129
ITRON France	Haguenau	434 027 249 000 52	8 000m²	73
ITRON France	Chasseneuil du Poiitou	434 027 249 000 37	10 070m²	326
ITRON Massy Plastique	Massy	434 027 249 00 219	6 000m²	59

* effectif calculé au 31/12/14

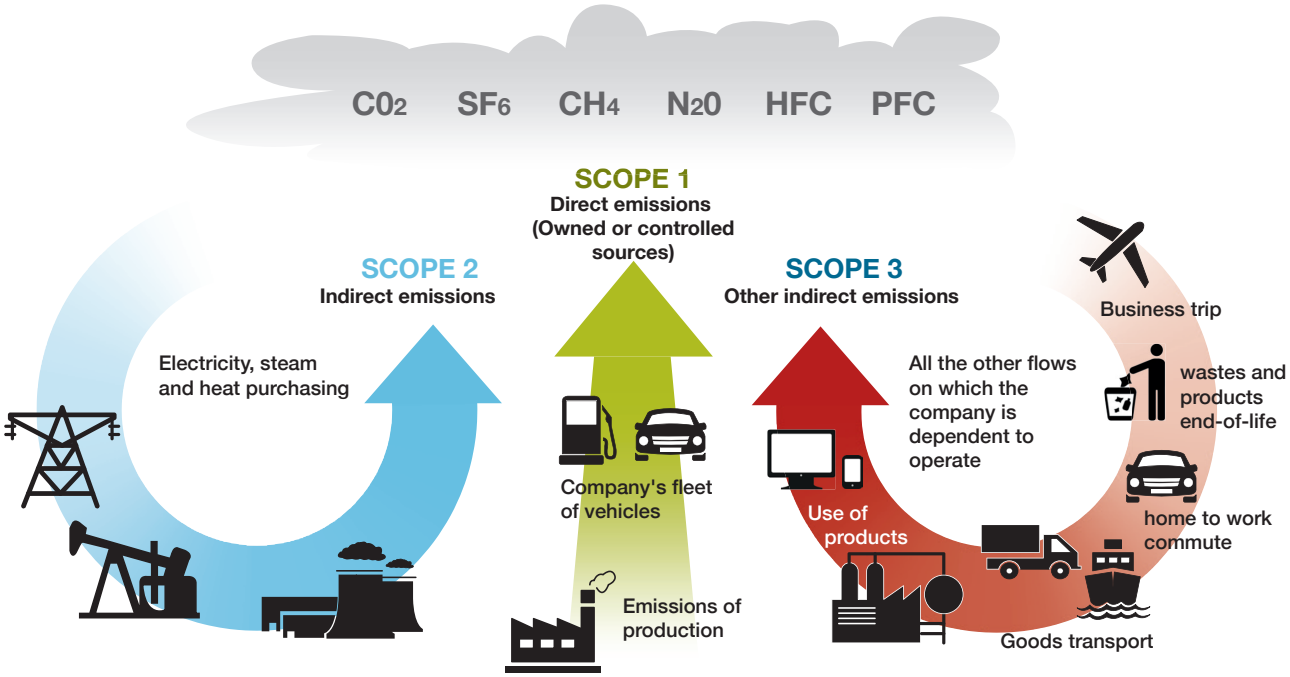
Decree no. 2011-829 of July 11, 2011, the regulatory GHG balance is limited to categories 1 & 2, i.e.:

1-Direct emissions, produced by the fixed and mobile sources required for company operations (leaks and sources, fleet of vehicles used by the company, processes, etc.).

2-Indirect emissions associated with the consumption of electricity, heat and steam, as required for company operations (electricity purchased, etc.).

Category 3 corresponding to other indirect emissions (visitors, waste, upstream cargo, etc.) is optional.

To illustrate, the figure opposite shows the various aforementioned categories:



The scope adopted by ITRON France for its GHG balance corresponds to the strict regulatory obligation, i.e. categories 1 & 2.

Emission headings 1 to 7 of the nomenclature for categories, headings and sources of emissions are integrated in this balance.

EMISSIONS CATEGORY	NUMBER	EMISSION HEADING	OBLIGATIONS AS PER DECREE N°211-829
Direct GHG emissions	1	Direct emissions from fixed sources of combustion	Mandatory
	2	Direct emissions from mobile sources with thermal engines	
	3	Direct emissions from non-energy processes	
	4	Fugitive direct emissions	
	5	Biomass emissions (sols and forests)	
Indirect emissions associated with energy	6	Indirect emissions relating to the consumption of electricity	Mandatory
	7	Indirect emissions relating to consumption of steam, heat or cold	
Other indirect GHG emissions	8	Emissions relating to energy not included in headings 1 to 7	Optional
	9	Purchase of products or services	
	10	Fixed assets	
	11	Waste	
	12	Upstream goods transport	
	13	Professional travel	
	14	Upstream deductibles	
	15	Assets leased upstream	
	16	investment	
	17	Transport for visitors ans customers	
	18	Downstream goods transport	
	19	Use of product sold	
	20	End-of-life for products sold	
	21	Downstream deductible	
	22	Downstream lessing	
	23	Work-home traval	
	24	Other indirect emissions	

2.2 REPORTING YEAR FOR THE PERIOD AND BENCHMARK YEAR

2.2.1 - Reporting year

The reporting year corresponds to the year for which data was collected for the activity in view of establishing the balance.

The reporting year for this balance is 2014 (from 1 January to 31 December).

2.2.2 - Benchmark year

The benchmark year can be used by the entity to track emissions over time and assess the effectiveness of the actions implemented.

The greenhouse gas emissions balance for this benchmark year must be recalculated if the organisational scope of the company changes or if a different method is used to evaluate greenhouse gas emissions, when establishing future GHG balances.

In order to avoid carrying out several greenhouse gas emission balances during the 1st period, the company may use its first reporting year as a benchmark year.

It is the second period studied. The benchmark year selected by ITRON France is 2013.

2.3 DETAILED GHG EMISSIONS PER HEADING

This paragraph specifies the various components used to calculate GHG emissions, for each heading, for the following two categories:

- direct emissions, fixed and mobile sources, inherent to ITRON operations,
- indirect emissions associated with the consumption of electricity, heat and steam, as required for ITRON operations.

A summary of emissions is then shown in table format.

2.3.1 - Direct GHG emissions

Direct emissions from fixed sources of combustion (heading 1)

Direct emissions from sources of combustion are exclusively generated by the combustion of any type of fuel within fixed sources controlled by the legal person carrying out the balance, i.e. burners, ovens, turbines, flares, boilers, generators, or other fixed motors, etc.

The fuel in question may be a fossil fuel (oil products, bituminous coal, gas, etc.) or other (biomass, organic and non-organic waste, etc.).

Identification of ITRON sources

Argenteuil, Haguenau, Mâcon and Reims plants are supplied with town gas for heating in buildings. Consumption data is obtained from GDF management information.

Chasseneuil du Poitou plant is supplied with heating oil for heating in buildings.

Fuel	Site	Qty consumed in 2014	Emission factor	Emissions generated (t CO2 eq)
Naturel Gas (kWh PCI)	Argenteuil	754 610	0,204 kg eq CO2 per kWh PCI	153,950
	Haguenau	1 860 313		379,526
	Mâcon	793 999		161,985
	Reims	2 459 729		501,814
Heating oil (L)	Chasseneuil du Poitou	1 400	2,681 kg eq CO2 per L	3,754
			TOTAL	**1 201**

Fugitive direct emissions (heading 4)

Fugitive direct emissions from intentional or accidental discharges of sources are often difficult to control physically.

Emissions generally come from:

- leakage during filling, storage, or transport operations, or the use of greenhouse gases, for example, when transporting natural gas, or using refrigerant gases in cooling systems, etc.
- anaerobic reactions, for example with the decomposition of organic material in waste burial centres, rice growing areas, stagnant water in settling basins, etc.,
- some nitrification or denitrification reactions, for example, when spreading nitrogen fertilisers in fields, or treating wastewater, etc.,
- methane emissions in coal mines or from a coal heap, etc...

Identification of ITRON sources

All ITRON sites are equipped with air conditioning systems. Furthermore, the sites at Chasseneuil du Poitou and Mâcon are equipped with chillers.

Calculating emissions

Fugitive emissions are integrated in the net volume of refrigerant gases replaced (filling-drainage), which is allocated to the reporting year.

Coolant leakage was estimated using the Clim_froid utility of the carbon balance of the ADEME when the precise quantities of fluids replaced within the year were not known.

An estimate of 10% leakage was considered for equipment for which the cooling capacity is not known.

Estimated leakage of 10% was taken into consideration for equipment with unknown cooling power.

The leakage of coolant is known for 2014 for some items of equipment.

Site	Coolant	Estimated qty of leakage	Emission factor	Emissions generated (t CO2 eq)
Argenteuil	R 410A	No top up in 2014	1 975 kg eq CO_2 per kg	0
	R 22		1 810 kg eq CO_2 per kg	
Chasseneuil du Poitou	R 410A	0,0054	1 975 kg eq CO_2 per kg	10,665
	R 22	0,009	1 810 kg eq CO_2 per kg	16,290
	R 407C	0,003	1 653 kg eq CO_2 per kg	4,959
	R 408A	0,0001	1 500 kg eq CO_2 per kg	0,090
Haguenau	R 410A	0,0014	1 975 kg eq CO_2 per kg	51,350
	R 407C	0,0023	1 653 kg eq CO_2 per kg	61,161
	R 134A	0,0946	1 430 kg eq CO_2 per kg	1,430
Issy Les Moulineaux	R 410A	0,0012	1 975 kg eq CO_2 per kg	2,370
Mâcon	R 401A	No top up in 2014	1 182 kg eq CO_2 per kg	0
Massy	R 410A	0,0039	1 975 kg eq CO_2 per kg	8,690
Reims	R 410A	0,059	1 975 kg eq CO_2 per kg	116,525
	R22	No top up in 2014	1 810 kg eq CO_2 per kg	
	R 407C	0,0043	1 653 kg eq CO_2 per kg	7,108
Saint-Priest	R 410A	0,0008	1 500 kg eq CO_2 per kg	1,580
			TOTAL	**282,2**

2.3.2 - Indirect GHG emissions

Indirect emissions related to electricity consumption (heading 6)

Indirect emissions related to electricity consumption are from various sources (heating, lighting, utilities, processes, etc.). The scope to be taken into consideration covers the electricity generation phase.

The impact of energy consumption in the balance can be evaluated or calculated on the basis of the emission factors for usages (heating, lighting, basic usage, intermittent usage), or on the basis of the mean factor for electricity generated. This latter approach is adopted for this study.

Identification of ITRON sources

The 8 ITRON sites consume electricity for lighting, machine operation, and air conditioning.

At the sites of Issy Les Moulineaux and Massy, electricity is also used to heat premises.

The annual electricity consumption of each site is determined from EDF management information.

Calculating emissions

The following data was used to calculate emissions and the results obtained:

Site	Electricity consumed in 2014	Emission factor	Emissions generated (t CO2 eq)
Argenteuil	304 243	0,06048 kg eq CO2 per kWh	18,401
Chasseneuil du Poitou	3 051 258		184,540
Haguenau	1 629 237		98,536
Issy Les Moulineaux	332 868		20,132
Mâcon	5 467 348		330,665
Massy	5 803 720		351,009
Reims	2 820 360		170,575
Saint-Priest	42 439		2,567
		TOTAL	**1 176,4**

2.3.3 - Reason for excluding GHG sources and GHG emission headings when evaluating GHG emissions

The following emission headings are excluded from the mandatory scope:

Heading 2 (Direct emissions from mobile sources with a thermal engine): not suitable – vehicles are not controlled financially.

Heading 3 (Direct emissions from processes, excluding energy): not suitable – no direct emissions from processes.

Heading 5 (Biomass emissions): not suitable.

Heading 7 (Indirect emissions related to the consumption of steam, heat or cold): not suitable – no purchase of heat, steam or cold.

2.3.4 - How to appraise uncertainty

Uncertainties per emission heading are as follows:

Emission category	Number	Emission heading	Uncertainty (T CO2)
Direct GHG emissions	1	Direct emissions from fixed sources of combustion	33
	2	Direct emissions from mobile sources with a thermal engine	0
	3	Direct emissions from processes, excluding energy	0
	4	Fugitive direct emissions	44
	5	Biomass emissions (soils and forests)	0
		Sub-total	**55**
Indirect emissions associated with energy	6	Indirect emissions related to electricity consumption	51
	7	Indirect emissions related to the consumption of steam, heat or cold	0
		Sub-total	**51**

The emission factors in the Base Carbone® were used. Uncertainties for the result of greenhouse gas emissions balance relate to these same emission factors, for which the uncertainties described in the ADEME Base Carbone® are applied. Uncertainty for the data collected for coolant emissions was integrated in the balance at 5%. This figure was estimated based on coolant purchases or by a utility.

2.3.5 - Explaining any recalculations for the benchmark year (2013)

This is the second mandatory GHG balance done by ITRON France. The first one has been done in 2013. There was no change of method or emission factors between these two closed years and no recalculation of the benchmark year is needed. As reminder, results obtained in 2013 were:

Emission category	N°	emission heading	GHG emissions							Reduction in GHG emissions
			CO2 (tons)	CH4 (tons)	N20 (tons)	Autres gaz (tons)	Total (t C02e)	CO2 B (tons)	Uncertity (t C02e)	Total (t CO2e)
Direct GHG emissions	1	Direct emissions from fixed sources of combustion	1571	0	0	0	1595	0	43	0
	2	Direct emissions from mobile sources with thermal engines	0	0	0	0	0	0	0	0
	3	Direct emissions from non-energy processes	0	0	0	0	0	0	0	0
	4	Fugitive direct emissions	0	0	0	0	244	0	44	0
	5	Biomass emissions (sols and forest)	0	0	0	0	0	0	0	0
		Sub-total	**1571**	**0**	**0**	**0**	**1839**	**0**	**61**	
Indirect emissions associated with energy	6	Indirect emissions relating to the consumption of electricity	0	0	0	0	1084	0	47	0
	7	Indirect emissions relating to consumption of steam, heat or cold	0	0	0	0	0	0	0	0
		Sub-total	**0**				**1084**		**47**	**0**
Other indirect GHG emissions	8	Emissions relating to energy not included in headings 1 to 7	198	4	0	0	600	0	16	0
	9	Purchase of products or services	0	0	0	0	0	0	0	0
	10	Fixed assets	0	0	0	0	0	0	0	0
	11	Waste	0	0	0	0	0	0	0	0
	12	Upstream goods transport	0	0	0	0	0	0	0	0
	13	Professional travel	0	0	0	0	0	0	0	0
	14	Upstream deductibles	0	0	0	0	0	0	0	0
	15	Assets leased upstream	0	0	0	0	0	0	0	0
	16	investment	0	0	0	0	0	0	0	0
	17	Transport for visitors ans customers	0	0	0	0	0	0	0	0
	18	Downstream goods transport	0	0	0	0	0	0	0	0
	19	Use of product sold	0	0	0	0	0	0	0	0
	20	End-of-life for products sold	0	0	0	0	0	0	0	0
	21	Downstream deductible	0	0	0	0	0	0	0	0
	22	Downstream lessing	0	0	0	0	0	0	0	0
	23	Work-home traval	0	0	0	0	0	0	0	0
	24	Other indirect emissions	0	0	0	0	0	0	0	0
		Sub-total	**198**	**4**			**600**		**16**	**0**

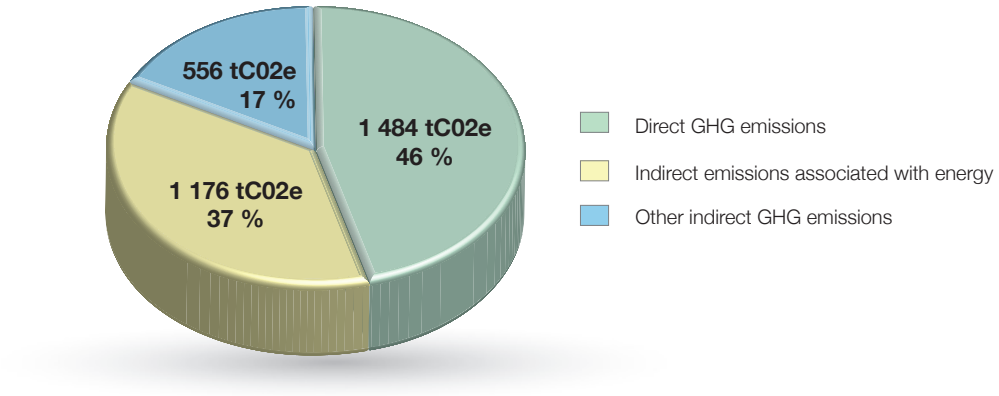
2.3.6 - Tableau de synthèse des émissions (2014)

Emission category	N°	emission heading	GHG emissions							Reduction in GHG emissions
			CO2 (tons)	CH4 (tons)	N20 (tons)	Autres gaz (tons)	Total (t C02e)	CO2 B (tons)	Uncertity (t C02e)	Total (t CO2e)
Direct GHG emissions	1	Direct emissions from fixed sources of combustion	1183	0	0	0	1201	0	33	0
	2	Direct emissions from mobile sources with thermal engines	0	0	0	0	0	0	0	0
	3	Direct emissions from non-energy processes	0	0	0	0	0	0	0	0
	4	Fugitive direct emissions	0	0	0	0	282	0	44	0
	5	Biomass emissions (sols and forest)	0	0	0	0	0	0	0	0
		Sub-total	**1183**	**0**	**0**	**0**	**1483**	**0**	**55**	
Indirect emissions associated with energy	6	Indirect emissions relating to the consumption of electricity	0	0	0	0	1176	0	51	0
	7	Indirect emissions relating to consumption of steam, heat or cold	0	0	0	0	0	0	0	0
		Sub-total	**0**				**1176**		**51**	**0**
Other indirect GHG emissions	8	Emissions relating to energy not included in headings 1 to 7	149	4	0	0	556	0	16	0
	9	Purchase of products or services	0	0	0	0	0	0	0	0
	10	Fixed assets	0	0	0	0	0	0	0	0
	11	Waste	0	0	0	0	0	0	0	0
	12	Upstream goods transport	0	0	0	0	0	0	0	0
	13	Professional travel	0	0	0	0	0	0	0	0
	14	Upstream deductibles	0	0	0	0	0	0	0	0
	15	Assets leased upstream	0	0	0	0	0	0	0	0
	16	investment	0	0	0	0	0	0	0	0
	17	Transport for visitors ans customers	0	0	0	0	0	0	0	0
	18	Downstream goods transport	0	0	0	0	0	0	0	0
	19	Use of product sold	0	0	0	0	0	0	0	0
	20	End-of-life for products sold	0	0	0	0	0	0	0	0
	21	Downstream deductible	0	0	0	0	0	0	0	0
	22	Downstream lessing	0	0	0	0	0	0	0	0
	23	Work-home travel	0	0	0	0	0	0	0	0
	24	Other indirect emissions	0	0	0	0	0	0	0	0
		Sub-total	**149**	**4**			**556**		**16**	**0**

2.4 SUMMARY

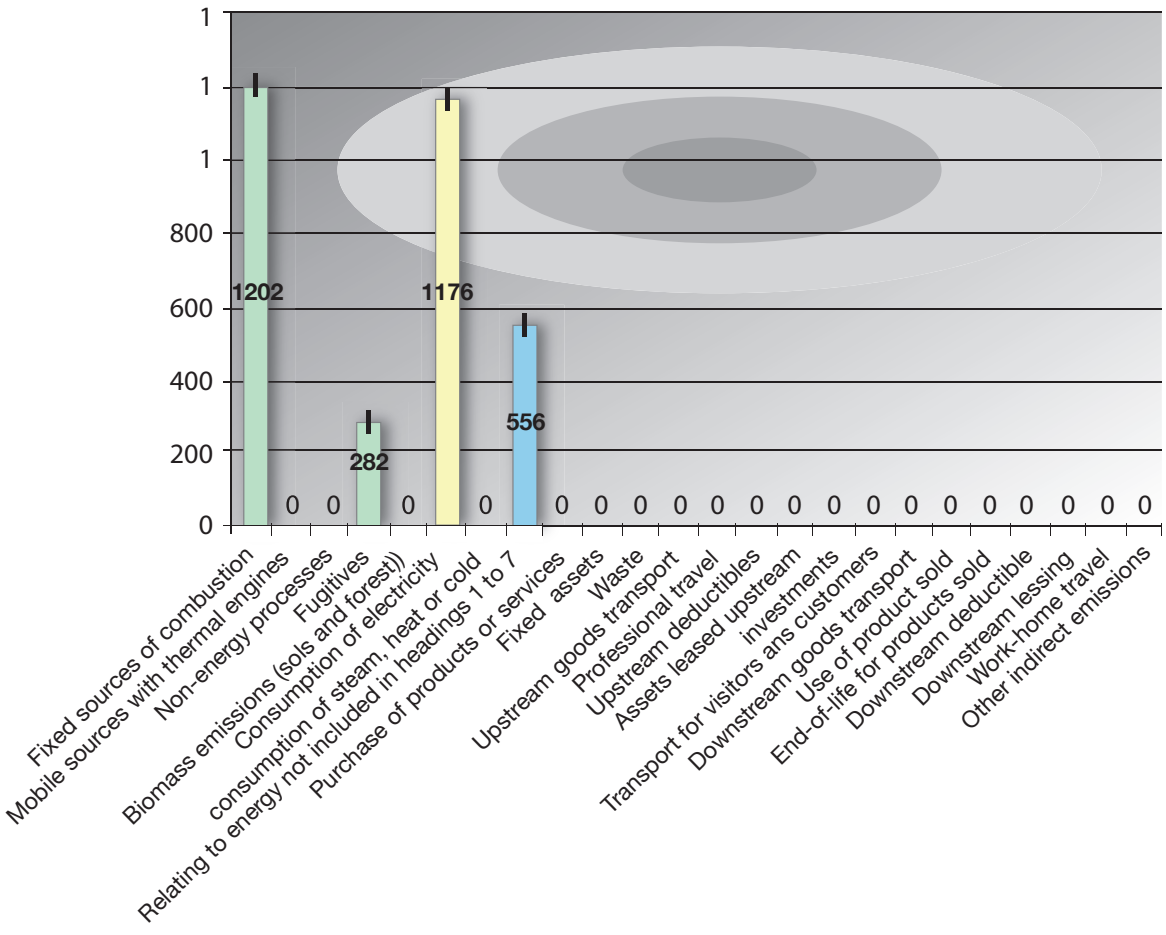
The following graphic shows the distribution of greenhouse gas emissions, depending on various scopes. Scope 3 has not been taken into consideration in the study:

GHG balance: GHG emissions by scope and by tC02e%



The following graphic shows the distribution of greenhouse gas emissions by regulatory emission heading, and the associated uncertainty:

GHG balance: GHG emissions by scope and by tC02e%



2.5 ADDRESS OF THE WEBSITE WHERE THE PUBLIC CAN ACCESS THE BALANCE

www.itron.fr (go to our Environment page)

3. SUMMARY OF THE ACTIONS PLANNED BY ITRON OVER THE NEXT 3 YEARS (2015-2018)

Emission category	Emission heading	Actions proposed	Concerned Site
Direct Emissions	1	Renovation of the roof of the South roof (new insulation)	Haguenau
		Plans to remove the final paint	Reims
	4	Replacement of Chillers	
Indirect Emissions associated with energy	6	Installation of a movement detectors	Haguenau
		Plans to remove the final paint	Reims
		Search for compressed air leaks to limit the use of the compressor	
		Decrease of paint needs	
		Replacement of the compressed air compressor with a variable speed compressor	Chasseneuil du Poitou
		Rehabilitation of the old restaurant room into a meeting room with: - New roof insulation - Movement detectors - LED lights	Mâcon

We expect a reduction of 5% to 10% of our emissions over the following three years thanks to these actions.

A more complete balance, covering category 3, have been carried out in-house and will be monitored during this period, in order to identify additional means of improvements for each site and reduce the greenhouse gas emissions generated in our operations.

Finally, a national energy audit is in progress, including an action plan that should also allow us to reduce our GHG emissions.

Join us in creating a more **resourceful world.**
To learn more visit **itron.com**

ITRON
52, rue Camille Desmoulins
92130 - Issy les Moulineaux
France

Tel. : +33 (0)1 46 62 23 00
Fax : +33 (0)1 46 62 24 77