

LVMH

MOËT HENNESSY · LOUIS VUITTON

**INFORMATION ABOUT GHG EMISSIONS,
WATER CONSUMPTION
AND DEFORESTATION**

1) GOVERNANCE AND STRATEGY

GOVERNANCE

The LVMH environmental affairs direction reports directly to Antonio Belloni - Group Managing Director. He has signed and supported the "Business Proposals for COP 21" which aim to be a key input for COP 21 negotiations and include a long-term objective of limiting global warming below 2°C.

MANAGEMENT AND STRATEGY

The LIFE (LVMH Initiatives For the Environment) program aims to reinforce the inclusion of environmental concerns in management processes, facilitate the development of new steering tools, and take into account the changes and enhancements resulting from Group companies' innovative practices. The LIFE program is implemented by the Steering Committee of each Group company, part of the strategic plan updated every year and is based on nine key aspects of environmental performance:

- 1) environmental design;
- 2) securing access to strategic raw materials and supply channels;
- 3) traceability and compliance of materials;
- 4) environmental and social responsibility among suppliers;
- 5) preserving critical savoir-faire;
- 6) reducing greenhouse gas emissions;
- 7) environmental excellence in manufacturing processes;
- 8) product life span and reparability;
- 9) customer and key stakeholder information.

Following the implementation of the LIFE (LVMH Initiatives For the Environment), including 9 key stakes with one dedicated to climate change, the 2016 strategic plan of all LVMH Maisons include one page dedicated to the environment as part of the Strategic Plan. This will force each of the brands to reflect on the key environmental issues for their business, including climate change mitigation and adaptation, choose a few to be tackled with priority, put together a plan to improve.

INNOVATING BY INTRODUCING AN INTERNAL CARBON PRICE

LVMH is contributing to international efforts to limit the increase in temperature to 2 °C by 2100 by implementing an internal carbon price. A flagship idea: assigning an internal price to carbon. LVMH's approach is based on the idea that assigning a carbon price to activities that emit greenhouse gases may encourage economic operators to change their behavior, and therefore are an effective driver for combating climate change.

The governance process for the plan is provided by the Group's Environmental and Financial divisions. The Maisons will be required to invest in innovative projects aimed at improving their energy efficiency or their carbon footprint, for each metric ton of greenhouse gas generated by their activities, and more specifically by the production facilities and stores' energy consumption. The price for a metric ton, which was set at €15 in November 2015, is within the range of current practices and may be reviewed over time. The contribution basis may be broadened, specifically by including transport.

The amounts raised will be dedicated to financing investment plans intended to reduce the Maisons' greenhouse gas emissions in 2016. The Group has planned to finance three kinds of projects: investment in equipment that enables a reduction in energy consumption, investment in the production of renewable energy on an international scale and research aimed at improving LVMH's understanding of its greenhouse gas emissions. Accordingly, LVMH is creating a virtual circle that will boost the effectiveness of its environmental policy.

TARGETS

To give our environmental policy an extra boost, we are working on setting and implementing specific objectives based on the strategic priorities of the LIFE program for the next five years. We plan to make significant progress in:

- improving the environmental performance of all our products;
- improving the environmental performance of all our manufacturing sites;
- enforcing best practices at our key internal and external supply chains;
- working with our suppliers to bring their production sites up to the highest environmental standards;
- reducing our greenhouse gas emissions: LVMH is already aiming for a 25% reduction in direct and indirect emissions (scope 1 and 2) across all manufacturing sites, logistics centers and stores between 2013 and 2020.

2) CLIMATE CHANGE

INITIATIVES IMPLEMENTED TO ACHIEVE THE CO2 EMISSION REDUCTION

- **Energy efficiency in buildings:** In 2012 a Store Lighting Working Group was set up by the Group, tasked specifically with regulation, technology and energy consumption measuring in stores. Its goal was to boost efforts to reduce lighting related energy consumption. All brands now installed LED lighting in many of its stores. In September 2013, LVMH therefore launched the “LVMH Lighting” program, whose aim is to secure and optimize the sourcing of energy-efficient lighting equipment for stores, production and storage sites, and for office areas. In addition to promoting LED technology, the program aims to ensure that lighting meets the Maisons’ exceptionally high standards. **Around 12 000 tons estimated of CO2 are saved annually.**
- **Energy efficiency in buildings:** Most of the LVMH group manufactures, warehouses or administrative offices, now incorporate environmental criteria. For construction, renovation and building operation, the Maisons apply various standards and certifications such as HQE®, BBC, BREEAM and LEED. In the last ten years, more than 30 buildings have been built to these standards. La Ruche, the new Guerlain’s manufacture has been awarded “Excellent” HQE certification, an energy-efficient building with solar-powered hot water, Canadian well for cooling offices, rainwater recovery, recovery of energy from manufacturing processes, parking that has electric charging stations, and minimal environmental nuisance.
- **Renewable energy:** Starting in 2016, France and Italy are going to use only green electricity produced from renewable energy. **Around 60 000 tons estimated of CO2 are saved annually.**
- **Transportation:** Transportation is also a major source of CO2 emissions (not included yet in the group 25% reduction). Although transportation is not carried out directly by the Group’s companies, it is nevertheless subject to specific measures, such as the preference for maritime transport. Since 2013, Louis Vuitton developed a tool to calculate CO2 emissions and produce for each journey made a real-time report of emissions related to the shipping of leather goods and accessories that transit through its central warehouse. Louis Vuitton successfully revised its shipping methods and completely reorganized its logistics flows; the tendency now is to favor maritime shipping. When infrastructure allows, inland waterways are therefore systematically preferred over road transportation, as is the case with Parfums Christian Dior, Louis Vuitton, Wines & Spirits brands... which uses the waterway between the port of Gennevilliers and Le Havre prior to export. Many Maisons are taking an interest in electric transportation, where transportation over short distances is concerned. In France, 80% of the Maison’s sales outlets are located in town centres, and urban traffic constraints complicate their supply. Sephora opted for a “final kilometre” delivery by 100% electric trucks in 2009, with the assistance of Transports Deret. The Maison has also launched a pioneering initiative in China by having its 21 stores in Shanghai supplied by electric trucks. It therefore avoids the emission of 10 metric tonnes of CO2 equivalent into the atmosphere every year. The same system is also used by Louis Vuitton for its stores in Shanghai. Guerlain made innovations in the sustainable urban logistics field in 2014, including a world first: The Maison introduced a process for supplying its Paris boutiques from Béville-le-Comte, in the Eure-et-Loire department, via fully-electric 16-tonne trucks, which do not generate any polluting emissions or noise nuisance and perform roundtrips of over 200 km, in partnership with Renault Trucks, the truck manufacturer, and Speed Distribution, the logistics service provider. The vehicle was tested under actual operating conditions throughout 2015. It has enabled seven metric tons of CO2 to be avoided in one year. Sephora has also been attracted by green deliveries.

CLIMATE CHANGE RISKS AND OPPORTUNITIES

- **Wineries in Argentina and California:** Climate change could reduce the average precipitation and grapes harvesting in these areas could be significantly affected (quantity and quality). The estimation of financial implication is still very difficult to evaluate as it is still difficult to evaluate the concrete impact of climate change on grapes harvesting and the possible adaptation in term of marketing. Whatever at the LVMH group level the turnover of these brands is not significant. An in-depth analysis of sensitivity to local constraints was carried out at each Group company using Pfister’s 2009 water scarcity index and the 2012 Aquastat database. This analysis was based on measurements of each geographic area’s sensitivity, obtained by comparing water consumption to available resources at the local level. Four Group companies with significant water consumption at the Group level were identified in areas where water stress is close to 100%, i.e. where water requirements are close to the level of resources available:
 - o the vineyards of Cheval des Andes and Terrazas de Los Andes, which represent 93% of the Group’s agricultural water requirements;
 - o the vineyards of Domaine Chandon California and Newton, which represent 3% of the Group’s agricultural water requirements.

Vineyard irrigation is an authorized and supervised practice in California and Argentina due to the climate. It is essential for the preservation of vines. The Group has also taken measures to limit water consumption: recovery of rain water, drafting of agreements on measures and specifications with respect to water requirements, standardized drip method of irrigation, weather forecasts for optimized irrigation or adoption of the “reduced loss irrigation” technique, which reduces water consumption and actually improves the quality of the grapes and the size of the vine, yielding an enhanced concentration of aroma and color.

- **Store location:** Some of our stores are located in regions (USA, South East Asia...) where tropical cyclones frequency could increase and affect our ability to operate business (open stores and welcome customers). Today the main financial impact regarding stores is the increase in insurance premiums or the inability to insure for certain location as Florida. LVMH has developed a specific tool dedicated to the operational, financial and reputational risks' identification and evaluation called ERICA. Store location and climate risks are included in the evaluation and analysis.
- **Champagne:** In short term, climate change (precipitation and temperature) could increase significantly grapes harvesting (quantity and quality) in Champagne. During the last 20 years, the production efficiency of vineyards in Champagne has increased of 50%, mainly because of better climate conditions. The financial implication is positive. In 2013, an in-depth analysis of sensitivity to local constraints was carried out at each Group company using Pfister's 2009 water scarcity index and the 2012 Aquastat database and local climate evolution. For Champagne Maisons, the professional association of Champagne (CICV) has also implemented many studies to evaluate the impact of climate change. It is clear that for the next 20-25 years, quality and quantity will still increase.

GHG ACCOUNTING

- LVMH environmental reporting benefits from a reasonable assurance report from statutory auditors.
- **Scope 1: 64 468 CO2 equivalent metric tons**
The uncertainty is less than 2%. The source of uncertainty for scope 1 emissions is mainly linked to data management as the updating or the accuracy of emission factors.
- **Scope 2: 344 336 CO2 equivalent metric tons**
The uncertainty is more than 5% but less than 10%. In 2015, the scope of the stores reporting covered 64 % of the sales areas for energy consumption and CO2 emissions. The environmental indicators for stores that are not covered are deducted by extrapolation, on the basis of actual average ratios per unit of sales area. The scope of the store reporting does not cover the franchise stores for Perfumes and Cosmetics and Fashion and Leather Goods. Energy consumption by retail sales areas excluded from the reporting scope, representing 36 % of total retail space, is estimated at 110,331 metric tons of CO2 equivalent.

Scope 1 Breakdown

- By country:

Country	Emissions in tons equivalent CO2
France	19 483
Italy	18 869
United Kingdom	11 586
Poland	3 175
USA	2 616
China	2 356
Switzerland	1 252
Japan	1 133
Argentina	1 036
Netherlands	851
Australia	501
Spain	393
Singapore	387
New Zealand	245
Hong Kong	234
Brazil	155
Canada	120
Romania	43
India	28
Other	4

- By group of activities

Group of activities	Emissions in metric tons equivalent CO2
Wines and Spirits	29 408
Fashion and Leather Goods	23 241
Perfumes and Cosmetics	6 215
Watches and Jewelry	1 706
Selective Retailing	2 982
Other activities	916

Scope 2 Breakdown

- By country:

Country	Emissions in tons equivalent CO2
USA	88 472
China	61 436
Italia	25 511
Hong Kong	21 175
France	16 658
Japan	16 483
Macao	10 388
Poland	8 721
Australia	8 262
Russia	7 947
Singapore	7 607
United Kingdom	6 687
Micronesia	6 160
Spain	5 338
United Arab Emirates	5 317
Korea	4 138
Greece	3 751
Saudi Arabia	3 098
Taiwan	3 016
Canada	2 851
Malaysia	2 680
Germany	2 564
Argentina	1 883
Turkey	1 865
Czech Republic	1 796
India	1 790
Romania	1 761
Mexico	1 685
Kuwait	1 670
Netherlands	1 458
Indonesia	1 384
Northern Mariana Islands	1 258
Thailand	1 214
Portugal	912
Qatar	605
New Zealand	523
Brazil	512
Ireland	408
South Africa	390
Bahrein	389
Serbia	360
Puerto Rico	333
Mongolia	325

Luxem	312
Philippines	309
Denmark	304
Belgium	274
Ukraine	231
Switzerland	224
Morocco	218
Vietnam	197
Lebanon	185
Kazakhstan	162
Oman	151
Austria	127
Bulgaria	118
Dominican Republic	117
Israel	108
Panama	100
Chile	92
Aruba	72
Hungary	70
Jordan	52
Finland	33
Monaco	33
British Virgin Islands	32
Sweden	20
Colombia	8
Saint Barthelemy	6
Norway	3

- **By group of activities**

Group of activities	Emissions in tons equivalent CO2
Wines and Spirits	14 073
Fashion and Leather Goods	135 753
Perfumes and Cosmetics	9 639
Watches and Jewelry	11 921
Selective Retailing	171 024
Other activities	1 926

Energy consumption:

Energy type	MWh
Distillate fuel oil No 1	21 145
Distillate fuel oil No 5	31 390
Electricity (including estimated energy consumption for the sales floor areas excluded)	813 561
Natural gas	226 026
Butane propane	10 778
Steam	8 581
Cooling	4 720
Renewable energy (low carbon emission factor)	51 332

EMISSIONS PERFORMANCE

Our gross global emissions (Scope 1 and 2 combined) for 2015 has increased by 2% compare to the previous year (378 804 metric tons CO₂e in 2015 and 372 644 metric tons CO₂e in 2014). The main reasons are the change in boundary (opening of new stores + the inclusion in 2015 of Loro Piana and the crocodiles farm in Florida).

Our performance in metric tons CO₂e per unit currency total revenue (euros) has decreased by 15 % due to a good business performance. Sales for 2015 are 35 664 in EUR millions.

Our performance in metric tons CO₂e per full time equivalent (FTE) is stable in 2015 :3.02 (metric tons CO₂e per full time equivalent) in 2015 vs 3.07 in 2014.

SCOPE 3 EMISSIONS

Source of scope 3 emissions	Metric tons CO ₂ e	Comments/methodology	Evolution
Upstream transportation and distribution	64 161	The shipment of goods is one of the principal impacts of LVMH's operations on climate change. The Group has therefore defined a "downstream transport" indicator so that it can quantify the CO ₂ emissions related to the shipment of finished products between the production site and the retail stores. There are a number of difficulties in calculating this indicator, which requires precise knowledge of the logistics arrangements between the different production sites, warehouses and stores. A large number of improvements have been made since this indicator was created, resulting in a gradual extension the scope of the measurement and the growing reliability of this information. The methodology for calculating this indicator is still being optimized within the Group, particularly with regard to questions concerning scope, emissions factors or the liability of the carrier for the data. This indicator is now covered by the statutory auditors' work. The main sources of emissions are the transportation of products from Europe to Asia and America by boat and plane.50% of the figure is calculated using primary data. If not available, the following factors are used : - plane : 0,002510 teq CO ₂ /t.km - boat : 0,000010 teq CO ₂ /t.km - road (electric) : 0,000202 teq CO ₂ /t.km - road : 0,000096	Increase by 94% compared to 2014. This increase is due to a change of scope, some brands did not report some transportation in 2014 (data not available).

		teq CO2/t.km - rail : 0,000004 teq CO2/t.km - River : 0,000036teq CO2/t.km	
Downstream transportation and distribution	355 377	Cf comment above.	Increase by 8% compared to 2014. This increase is mainly due to the activity.
Business travel	250 000	LVMH travel agencies provide an annual data of plane and train overall distance travelled and some airline and train companies are able to provide primary data	Increase by 8% compared to 2014. This increase is mainly due to the activity and a better reporting from travel agencies.
Waste generated in operations	12 440	The LVMH corporate level encourages all LVMH companies to perform a carbon footprint. The brands have used the French tool Bilan Carbone to assess CO2 emissions (Quantity and Origin) in order to develop a strategy to minimize them. Carbon footprints are up-dated every 3 years. The data includes Louis Vuitton, Veuve Clicquot, Moët & Chandon, Hennessy, Parfums Christian Dior, Parfums Givenchy, Parfums Kenzo, Guerlain, DFS, Sephora, Le Bon Marché and Make Up For Ever.	Increase by 6% compared to 2014.
Purchased goods and services	177 900	In 2015, for extraction and production of purchased components (mostly for packaging components): - Glass: 60 590 t eq CO2 - Paper-cardboard: 60 643 t eq CO2 - Plastics: 22 005 t eq CO2 - Metals: 8083 t eq CO2 - others:6 072 t eq CO2. Emissions factors used are those from the French tool 'Bilan Carbone' : - Glass : 0.44 t eq CO2/t - Paper-Cardboard : 2.1 t eq CO2/t - Plastics : 4.4 t eq CO2/t for PET, 2 t eq CO2/t for PE - Metal : 3.2 t eq CO2/t	This increase is mainly due to the activity.
Capital goods	69 000	The LVMH corporate level encourages all LVMH companies to perform a carbon footprint. The brands have used the French tool Bilan Carbone to assess CO2 emissions (Quantity and Origin) in order to develop a strategy to minimize them. Carbon footprints are up-dated every 3 years. The data includes Louis Vuitton, Veuve Clicquot, Moët & Chandon, Hennessy, Parfums Christian Dior, Parfums Givenchy, Parfums Kenzo, Guerlain, DFS, Sephora, Le Bon Marché and Make Up For Ever.	Increase by 6% compared to 2014.

3) WATER

IMPORTANCE OF WATER

The importance of water quality and quantity is key for wines activities:

- LVMH operations: Using water for irrigation is necessary to maintain vineyards in Australia, Argentina and California and use depends on climatic conditions of each year.
- Supply chain: Within our supply chain, cotton irrigation with brackish water is possible for some countries but not significant at the group level.
- Products: Our products are not water intensive during the use phase except for a few products like shower or shampoo products which need to be rinsed off with hot water.

Water risks are regularly assessed. In 2013, LVMH conducted an in-depth analysis of sensitivity to local constraints for all Maisons in the Group and 4 significant commodities for the Group (grapes, paper/cardboard, leather and cotton). The analysis is based on assessing the sensitivity of each geographic region by comparing local and water consumption with the available resources. This analysis was carried out at each Group company using Pfister's 2009 water scarcity index and the 2012 Aquastat database. This analysis was based on measurements of each geographic area's sensitivity, obtained by comparing water consumption to available resources at the local level.

Four Group companies with significant water consumption at the Group level were identified in areas where water stress is close to 100%, i.e. where water requirements are close to the level of resources available:

- the vineyards of Cheval des Andes and Terrazas de Los Andes, which represent 93% of the Group's agricultural water requirements;
- the vineyards of Domaine Chandon California and Newton, which represent 3% of the Group's agricultural water requirements.

These 4 Companies do not represent a significant part of the LVMH profit and margin. But all best practices are implemented (irrigation...) in order to preserve local ecosystem and our activity. Regarding expenditure, Australia and China have been identified like countries at potential risk even if our water footprint is not significant.

REPORTING

LVMH environmental reporting benefits from a reasonable assurance report from statutory auditors. Water withdrawal and water discharge are regularly measured and monitored. Group figures are available p.51 of the 2015 environmental report: https://r.lvmh-static.com/uploads/2016/03/ra2015_complet_gb.pdf

Figures for the four Group companies with significant water consumption in areas where water stress is close to 100% are:

	Process consumption (in m3)	Water for irrigation (in m3)	evolution for irrigation
Newton	2 960	37 819	+ 116% (new vineyards irrigated)
Domaine Chandon California	55 135	211 217	-25% (2015 was a very early harvest, with grapes harvested 6 weeks early. This resulted in less irrigation.)
Bodegas Chandon Terrazas	42 697	2 178 408	-13%
Bodegas Chandon Agrelo	110 120	3 493 327	-15%

4) DEFORESTATION

INITIATIVES IMPLEMENTED TO AVOID DEFORESTATION-RELATED RISKS IN LVMH SOURCING POLICY

Large-scale conversion of forests to plantations or grazing has a devastating impact on a huge number of plants and animals, also causing soil erosion and contributing to air pollution and climate change. Avoiding deforestation-related risks in its supply chain is of key importance for LVMH.

Deforestation-related commodities: In order of importance and volumes, main deforestation-related commodities bought by LVMH or its suppliers - or their sub-contractors - are hides/leather, timber for furniture, paper and packaging, palm oil and palm kernel oil derivatives, and very few non GMO soya derivatives.

- Public engagement: Within our LIFE program, LVMH has made the following public engagements « All Maisons' products have an improved environmental performance » and «LVMH Maisons promote environmental best practices and cooperate with their suppliers to implement the most advanced environmental standards on upstream supply chain ».
- Mapping of supply-chains: Each brand conducts the risk assessment of its supply-chain; complete mapping of products containing palm oil or palm kernel oil derivatives has been conducted and now followed year after year, even if LVMH is a small actor for this commodity.
- Internal policies: Concerning leather, its origin is mainly European (western and northern Europe) or from zero-deforestation certified farms, with third-party verification. Concerning timber, the EU regulation is aligned with the strategy which was decided years ago, like sourcing 100 % FSC and PEFC certified woods for Wines & Spirits, and, for Perfumes & Cosmetics, choosing for its packaging 100% European paper from certified and world's best-in-class Scandinavian supplier. For palm oil and palm kernel oil, LVMH policy is to buy more and more RSPO sourced derivatives, when they are available, and to support suppliers which are switching to sustainable palm oil.
- Working groups and pilots: LVMH is an active member of the Leather Working Group (LWG), of the Responsible Sourcing Platform (RESP), of the Business for Sustainability Roundtable (BSR).... At different level, these working groups aim to improve/enhance traceability and environmental performance (including animal welfare) throughout the whole supply chains, from the fields to the retail. Their goal is to reduce the environmental impacts of sourcing and processing. New ways of producing are tested i.e. currently, the oil palm plantations in Indonesia are large-scale plantations of this single crop. This homogeneity can be linked to major issues such as depopulation and environmental damages including disease dispersion, and plants and animal extinction. The practice of growing two or more crops on the same parcel of land in some form of spatial and temporal arrangement is widespread throughout the tropics. Intercropping various plants offers farmers the opportunity to engage nature's principle of diversity on their farms, and is becoming increasingly practiced since it can diversify production to increase social, economic and environmental benefits such as nutrient exchange, reduced weed competition and pathogen control for land users. Such a project will be piloted through one of the working groups.

RISK AND OPPORTUNITIES

- Revenue dependency to deforestation-related commodities: Leather is the only strategic deforestation-related commodity for the Group.
- Type of risks inherent to deforestation-related commodities: The main risk is reputational for all four commodities and could consist of a negative media coverage.
- Operational risks are in changes in the availability or quality of some commodities: i.e. availability of French woods used directly in the production process of two of our emblematic products (cognac and suitcases). The risk of disruption or reduction of the supply of key timber products is on the long-term and unlikely to happen.
- Opportunities: Buyers and environment correspondents are trained to better evaluate impacts of activity on the status of ecosystems and habitats. They can forward this information to direct and indirect suppliers.
- Improvement possibilities: New suppliers' selection and environmental audits policy have added an improvement to source sustainable raw materials.