2010 Consolidated Nestlé Environmental Performance Indicators

Indicator	Units	2000	2006	2009	2010	% Change 2009-2010	% Change 2006-2010	% Change 2000-2010	GRI reference
Production tonnage	10^6 tonnes	25.3	38.2	41.2	43.7	6.2%	14.4%	72.8%	*
Materials									
Material used by weight	10^6 tonnes	N/A	N/A	25.4	27.9	9.9%			EN1
Raw materials purchased	10^6 tonnes	N/A	20.3	21.2	23.3	9.9%	14.8%		EN1
Packaging materials purchased	10^6 tonnes	N/A	N/A	4.2	4.6	10.0%			EN1
Water									
Total water withdrawal	10^6 m^3	213.0	154.9	142.7	144.1	0.9%	-7.0%	-32.4%	EN8
Surface water	10^6 m^3	N/A	N/A	N/A	21.9				EN8
Ground Water	10^6 m^3	N/A	N/A	N/A	75.7				EN8
Municipal Water	10^6 m^3	N/A	N/A	N/A	46.4				EN8
Rain Water	10^6 m^3	N/A	N/A	N/A	0.1				EN8
Specific total water withdrawal	m^3 per tonne product	8.4	4.0	3.5	3.29	-5.0%	-18.7%	-60.9%	*
Once through cooling water from surface sources	10^6 m^3	N/A	N/A	N/A	16.4				*
Total volume of water recycled and reused	10^6 m^3	N/A	N/A	N/A	7.7				EN10
Percentage of water recycled and reused (% of total water withdrawal)		N/A	N/A	N/A	5.3				EN10
Energy									
Total on-site energy consumption	10^{15} Joules (PJ)	91.1	84.4	85.2	88.6	4.0%	5.0%	-2.8%	*
Specific total on-site energy consumption	10^9 Joules (GJ) per tonne product	3.6	2.2	2.1	2.03	-2.1%	-8.2%	-43.7%	*
On-site energy generated form renewable sources (% of total on-site energy consumption)		N/A	N/A	12.2	12.3	0.8%			*
Direct energy consumption	10^{15} Joules (PJ)	N/A	N/A	61.0	63.0	3.3%			*
Direct non-renewable energy consumption	10^{15} Joules (PJ)	N/A	N/A	54.5	56.4	3.6%			EN3
Direct renewable energy consumption	10^{15} Joules (PJ)	N/A	N/A	6.5	6.5	0.7%			EN3
Spent coffee ground (SCG)	10^{15} Joules (PJ)	N/A	N/A	3.7	3.7	-0.7%			EN3
Wood	10^{15} Joules (PJ)	N/A	N/A	2.8	2.8	2.9%			EN3
Intermediate energy consumption	10^{15} Joules (PJ)	N/A	N/A	24.2	25.6	5.8%			*
Indirect primary energy consumption	10^{15} Joules (PJ)	N/A	N/A	65.1	67.6	3.9%			EN4
Emissions									
Total direct greenhouse gas emission (Scope 1)	10^6 tonnes CO_2	4.7	4.0	4.0	4.0	0.1%	-1.6%	-15.6%	EN16
Specific total direct greenhouse gas emissions	kg CO_2 per tonne product	186.5	105.8	96.6	91.0	-5.7%	-14.0%	-51.2%	*
Total Indirect greenhouse gas emission (Scope 2)	10^6 tonnes CO_2	N/A	N/A	3.0	3.1	4.8%			EN16
Specific total indirect greenhouse gas emissions	kg CO_2 per tonne product	N/A	N/A	72.8	71.9	-1.3%			*
Emissions of ozone-depleting substances	tonnes R-11 equivalents	29.7	8.9	4.9	2.6	-45.9%	-70.6%	-91.2%	EN19
Specific emissions of ozone-depleting substances	g R-11 equiv. per tonne product	1.2	0.2	0.1	0.1	-49.1%	-74.3%	-94.9%	*
Air acidification potential	10^3 tonnes SO_x equivalents	28.2	19.0	16.6	17.2	3.4%	-9.6%	-39.0%	EN20
Specific air acidification potential	kg SO_x equiv. per tonne product	1.1	0.5	0.4	0.4	-2.6%	-21.0%	-64.7%	*
Effluents									
Total water discharge	10^6 m^3	158.0	118.2	91.3	93.9	2.8%	-20.5%	-40.6%	EN21
Specific water discharge	m^3 per tonne product	6.2	3.1	2.2	2.1	-3.2%	-30.5%	-65.6%	*
Total water discharge quality (total COD)	10^3 tonnes COD	N/A	N/A	8.3	7.3	-11.6%			EN21
Total water discharge quality (COD concentration)	Average mg COD / l	N/A	N/A	90.8	78.1	-14.0%			EN21
Total water discharge quality (efficiency)	% of COD removed	N/A	N/A	97%	97%	-0.2%			EN21
By-Products and Waste for disposal									
By-products	10^6 tonnes	1.3	1.2	1.4	1.4	4.2%	17.2%	9.9%	EN22
Specific by-products	kg per tonne product	50.6	31.4	32.8	32.2	-1.9%	2.4%	-36.4%	*
Waste for disposal	10^6 tonnes	0.5	0.4	0.4	0.4	2.9%	-17.3%	-23.0%	EN22
Specific waste for disposal	kg per tonne product	19.0	10.5	8.7	8.4	-3.1%	-19.5%	-55.5%	*

Environmental Performance Indicators exclude SHAS (Nestlé Waters Business)

*** Nestlé specific indicators that are not required by GRI.**

Definitions and Comments on 2010 Consolidated Nestlé Environmental Performance Indicators

General Comments

This report covers 449 manufacturing sites. It includes data from factories closed or sold during 2010 while they still belonged to Nestlé.

Data is presented for the current reporting year, 2009 and 2006 as well as for 2000.

In 2010, we include for the first time the following KPIs:

- Total water withdrawal by source
- Once through cooling water from surface sources
- Renewable direct energy consumption per biomass type
- Percentage and total volume of water recycled and reused

References in brackets refer to the Global Reporting Initiative Sustainability Reporting Guidelines Version 3.0.

Production Volume

The production volume is defined as the total of all products produced at the factory, based on net weight (i.e. without packaging). Since 2000, the production volume has increased by 72.8%.

Aspect: MATERIALS

Raw materials purchased (EN1)

The total of all input resources purchased (i.e. natural resources used for conversion to products or services such as milk, plants, crops, etc.) used to manufacture a product, including manufacturing losses, but excluding packaging material and water consumption, which are separate indicators. Based on 2010 improvement of data quality the increase of raw material should have matched the production tonnage increase.

Packaging materials purchased (EN1)

The total of all packaging materials purchased used for the production and in the distribution of products. The indicator includes all packaging with recycled content, bottles, cans, big bags, cartons, etc., and includes reusable packaging.

Aspect: WATER

In 2010 the total water withdrawal increased by 0.9% whiles at the same time the production volume increased by 6.2%.

Total water withdrawal by source (EN8)

The sum of water used by Nestlé factories from all sources, including purchases from suppliers as well as surface, ground and rain water sources. This includes water that may be treated through industrial services (such as softening and demineralising), non-contact cooling water, water used for cleaning and water used by itself as a raw material (e.g. for bottled waters) but does not include water contained in raw materials (e.g. from milk).

Since 2000, both absolute total water withdrawal and water withdrawal rate per tonne of product decreased.
This is the result of extensive efforts by Nestlé engineers and environmental professionals to improve water efficiency in our operations. For example, Fawdon Confectionery factory in the UK has installed a reverse osmosis recovery system to purify process waste water which allows its use in the industrial services systems, saving more than 5000 m^3/year of potable water.
Changes in the relative tonnage of each product category (volume change) and acquisitions and divestitures also influence this figure.

The following chart shows the contribution of these three components.

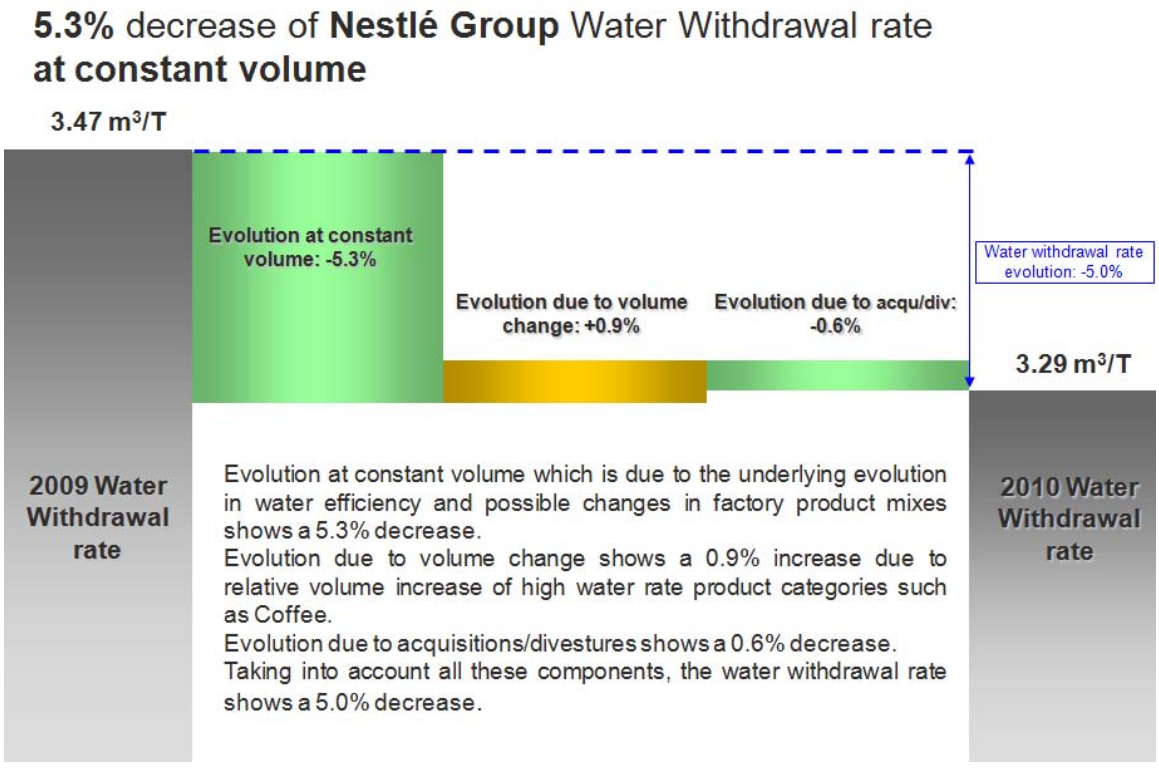

Chart 1: Components of Nestlé water withdrawal rate evolution

Reporting the total volume of water withdrawn by source contributes to an understanding of the overall scale of potential impacts and risks associated with the reporting organization's water use. The total water withdrawal comes from various sources:

- Surface water: is described as water present on the earth's surface: streams, lakes, and ponds. Includs water from shallow bores that are fed from streams, lakes, and ponds.
- Ground water: is described as water within the earth that supplies wells and springs; water in the zone of saturation where all openings in rocks and soil are filled, the upper surface of which forms the water table. It is normally recovered using beep bore pumps.
- Municipal water: is described as treated potable water normally provided by third parties such as municipalities, councils, water authorities, etc.
- Rain water: can be untreated and used for irrigation, road cleaning etc., or can be treated and used in production. It represents a minor amount (~0.04%).

Once through cooling water from surface sources

Cooling water usage is the water used solely for once-through cooling purposes. The water source (e.g. rivers, lakes, etc.) passes through the cooling process (spray condensers, shell and tube heat exchangers, etc.) and then returns to the environment (lakes and rivers) without any significant quality alteration. It represents 11.4% of our total water withdrawal.

Total volume of water recycled and reused (EN10)

The volume of recycled/reused water is mainly based on the water discharged to irrigation (including on site).This quantity represent 5.3% of the total water discharged. Increasing amount of water are actually recycled and reused in our processes, however due to the complexity of the manufacturing processes there is no standard tracking way.

Aspect: ENERGY

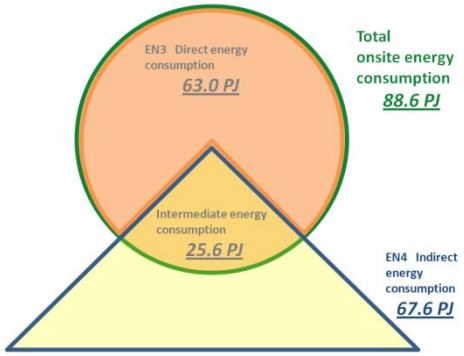

Chart 2: 2010 Energy consumption balance

Total on-site energy consumption

The sum of all energy consumed on Nestlé factory sites, whether purchased or produced – less any energy that, in some cases, is sold. This includes direct energy consumption (EN3) and intermediate energy consumption (part of EN4).

Since 2000 both absolute total energy consumption and energy consumption rate per tonne of product decreased. This is the result of efforts by Nestlé engineers and environmental professionals who work together to reduce, recover and use renewable energy which represent the successive milestones in the journey toward energy excellence. The energy consumption rate is also influenced by changes in the relative tonnage of each product category (volume change) and acquisitions and divestitures. The chart below shows the contribution of these three components.

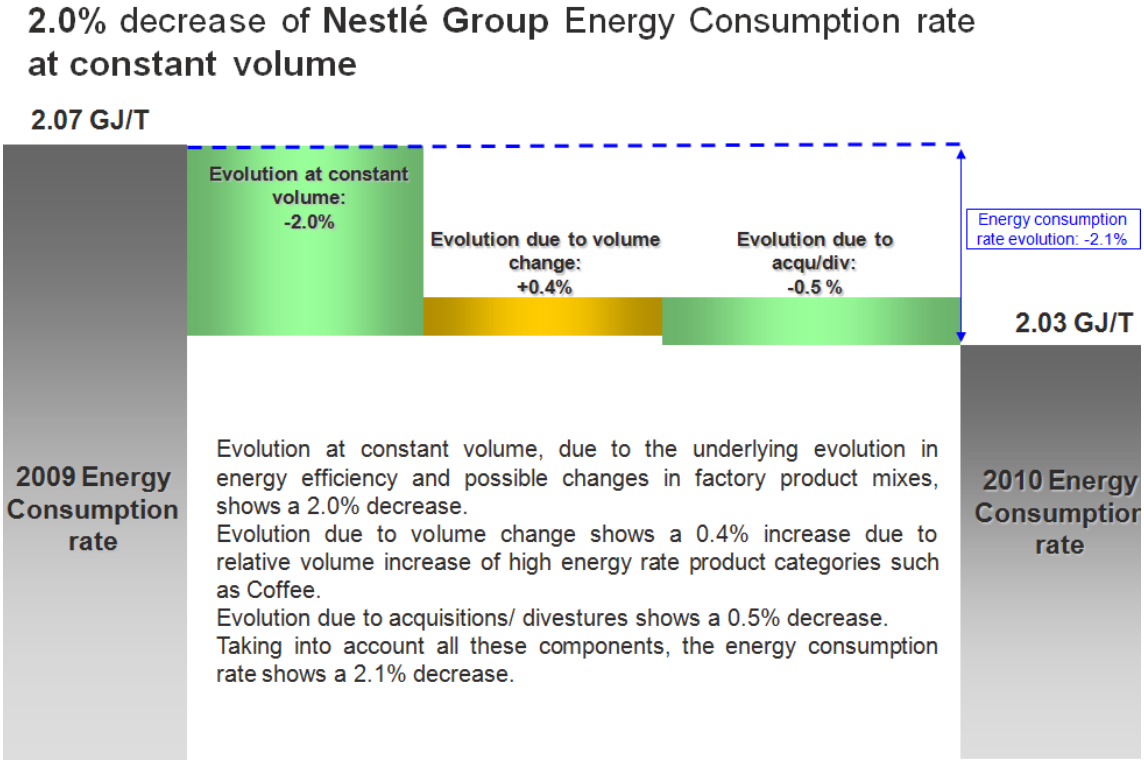

Chart 3: Components of Nestlé energy consumption rate evolution

Nestlé renewable energy utilisation accounts for 12.3% of the total consumption of Nestlé sites (see EN3). Spent coffee ground represents 4.2%, wood contributes for an additional 3.2% and an estimated 4.9% can be attributed to the purchase of electrical energy generated from renewable sources (based on national average). Halifax Confectionary factory in the UK has installed natural refrigerant based heat pumps which recover waste heat for use in the processes. This has eliminated the need to run coal fired boilers.

We also track the on-site energy consumption of 63 Data Centers, which amounted to 0.39 PJ, equivalent to two average manufacturing sites.

Direct energy consumption (EN3)

The sum of all energy generated and consumed by Nestlé factories. It is composed of **Non-renewable energy consumption** where the energy is produced from fossil fuels (oil, natural gas, etc.) and **Renewable energy consumption** where the energy is produced from biomass (e.g. spent coffee grounds, wood). Renewable energy represents 10.4% of the direct energy consumption (spent coffee grounds represent 5.9% and wood contributes for an additional 4.5%). This information also enables calculations of direct greenhouse gas emissions.

Intermediate energy consumption

The sum of all energy consumed by Nestlé factories purchased from a third party. This includes mainly electricity and minor amounts of steam and hot water.

Indirect primary energy consumption (EN4)

This indicator represents the energy required to produce and deliver purchased electricity and any other intermediate energy products (such as district heat) that involve significant energy consumption upstream from our reporting boundary. This information also enables calculations of indirect greenhouse gas emissions. Typically a default factor is used based on data from the energy supplier or country default values.

Aspect: EMISSIONS

The direct greenhouse gas emissions (Scope 1) maintain stable in 2010, despite the increase of production volume.

Total direct greenhouse gas emission (EN16)

The sum of all on-site greenhouse gas emissions at Nestlé factories which arise from combustion processes used to manufacture products as well as the CO_2 equivalents from refrigerants. These greenhouse gas emissions can result from burning of fuels in boilers, roasters, dryers, electric generators and from refrigerants losses (CO_2 eq). Not included are greenhouse gases arising from transportation and business travel. This indicator corresponds to Scope 1 of the WRI/WBCSD GHG Protocol.

Since 2000, absolute greenhouse gas emission (direct) decreased by 15.6%.The greenhouse gas emission (direct) rate per tonne of product also decreased by 51.2%.These reductions have been achieved through energy savings and fuel-switching projects where fuels such as coal and heavy fuel oil were replaced by cleaner-burning fuels such as natural gas.

In Nigeria, for example, Agbara factory has installed a cogeneration plant producing both electricity and chilled water at high efficiency and reducing CO_2 emissions by 37,000 tons per year. Furthermore, our estimated greenhouse gas emissions from transportation and value chain (Scope 3) account to 51 million tons.

Total indirect greenhouse gas emission (EN16)

These are greenhouse gas emissions arising from the generation of electricity, hot water and steam which is purchased by Nestlé or otherwise brought into our organizational boundary. The emissions physically occur at the facility where the electricity is generated. Typically publicly available country-specific default factors are used to calculate this from the purchased energy qualities. This indicator corresponds to Scope 2 of the WRI/WBCSD GHG Protocol.

Since 2010, we also track the greenhouse gas emissions generated from the electricity consumed in our Data Centers, which amounted to 48,315 tons of CO_2.

Emissions of ozone-depleting substances (EN19)

The sum of substances emitted from Nestlé factories which have been shown to contribute to the depletion of the ozone layer, that is, having ozone depletion potential. The common unit of measurement is R-11 equivalents. R-11 is one type of refrigerant, which has been assigned an ozone depleting potential of one, with all other ozone depleting substances being assigned relative values. The ozone depletion potential of each substance is determined using conversion factors commonly agreed by relevant authorities. These substances are primarily refrigerants in equipment used to cool or freeze products. In 2010 we focus on losses reductions and also on R22 phase out.
Both absolute ozone depletion potential and ozone depletion potential rate per tonne of product decreased since 2000.

Air acidification potential (EN20)

The sum of all SO_x and NO_x gas emissions at Nestlé factories resulting from the total on site energy consumption, converted into SO_x equivalents.
Since 2000 absolute air acidification potential decreased as well as the air acidification potential rate per tonne of product. These reductions have been achieved through energy savings and fuel-switching projects where fuels such as coal and heavy fuel oil were replaced by cleaner-burning fuels such as natural gas.

Aspect: EFFLUENTS

Despite the increase of production volume, the water discharged quality (efficiency) maintain stable in 2010.

Total water discharge (EN21)

The sum of all water effluents discharged from Nestlé factories. Water effluents are generated in manufacturing from processing, cleaning and some cooling processes and are discharged to subsurface waters, surface waters, sewers that lead to rivers, oceans, lakes, wetlands, treatment facilities and ground water.

Since 2000 absolute total water discharge decreased by 40.6% as well as the total water discharge per tonne of product, which decreased over this time period by 65.6%.

Total water discharge quality (EN21)

The water quality is expressed by the Chemical Oxygen Demand (COD), commonly used to measure the amount of organic compounds in water. A decrease in COD represents improvement of water quality.

Aspects: BY-PRODUCT AND WASTE FOR DISPOSAL

The same material leaving a Nestlé factory can be either a waste or a by-product, depending upon its final destination and use.

By-product (for recovery) (EN22)

Any materials that are generated during the manufacture of a product that leaves the factory and is destined for reuse or recovery, including recycling, composting and incineration with heat recovery. They are not limited just to the product manufactured; they include all materials used to support the manufacture.

In 2010, the by-products figure partly increased due to product mix change, increase of the production volume as well as a better data quality.

Waste for disposal (EN22)

Waste is any material, which arises during the manufacture or distribution stage of a product at a factory site, that is destined for final disposal to offsite landfill or to incineration without heat recovery. Not included are extraordinary wastes generated on a non-routine basis, such as construction and demolition waste, contaminated soils, etc.

Since 2000 absolute waste quantity decreased by 23%.The waste rate per tonne of product also decreased over this time period by 55%.The quantity of hazardous waste represent 1.6% of out waste for disposal.

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Production Volume

The production volume is defined as the total of all products produced at the factory, based on net weight (i.e. without packaging). Since 2000, the production volume has increased by 72.8%.

Aspect: MATERIALS

Raw materials purchased (EN1)

The total of all input resources purchased (i.e. natural resources used for conversion to products or services such as milk, plants, crops, etc.) used to manufacture a product, including manufacturing losses, but excluding packaging material and water consumption, which are separate indicators. Based on 2010 improvement of data quality the increase of raw material should have matched the production tonnage increase.

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The total of all packaging materials purchased used for the production and in the distribution of products. The indicator includes all packaging with recycled content, bottles, cans, big bags, cartons, etc., and includes reusable packaging.

Aspect: WATER

In 2010 the total water withdrawal increased by 0.9% whiles at the same time the production volume increased by 6.2%.

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This is the result of extensive efforts by Nestlé engineers and environmental professionals to improve water efficiency in our operations. For example, Fawdon Confectionery factory in the UK has installed a reverse osmosis recovery system to purify process waste water which allows its use in the industrial services systems, saving more than 5000 m^3/year of potable water.
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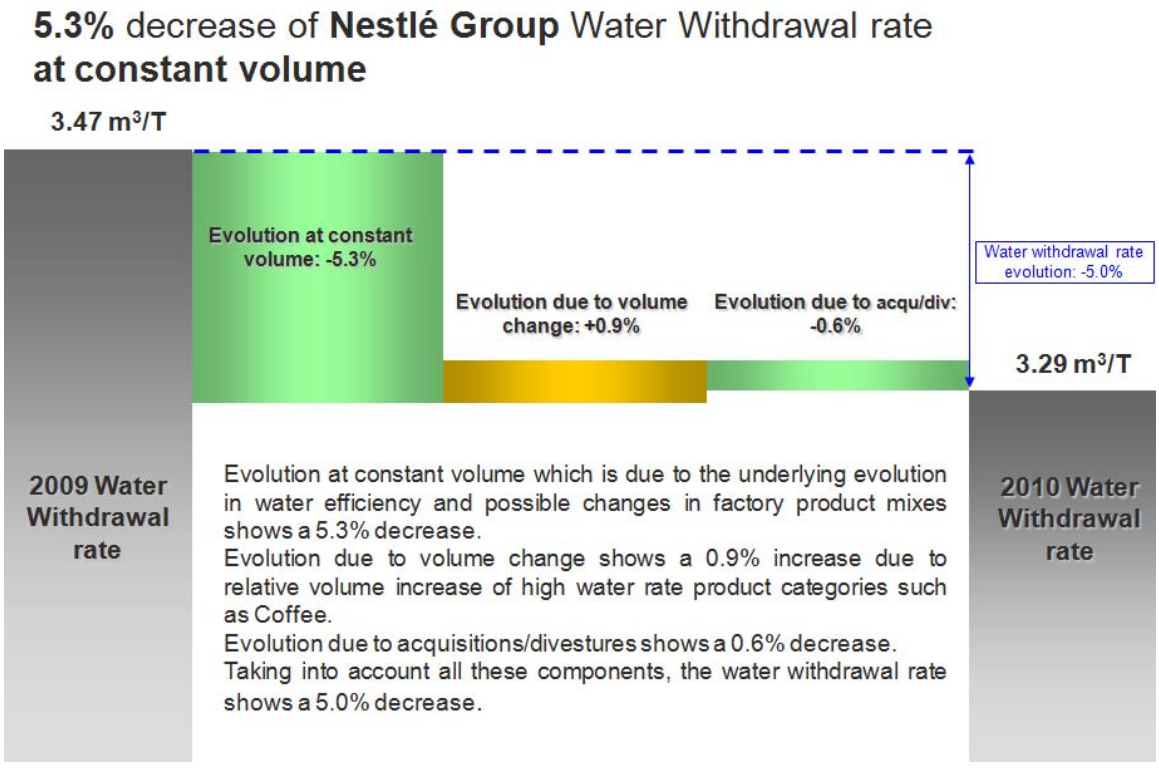

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Total volume of water recycled and reused (EN10)

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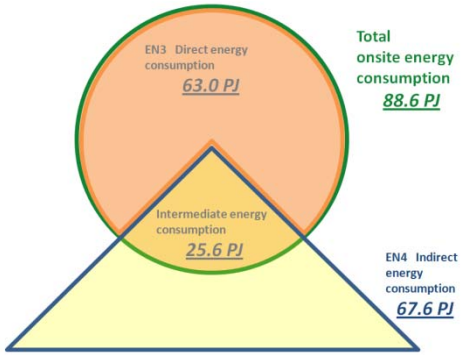
Aspect: ENERGY



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Total on-site energy consumption

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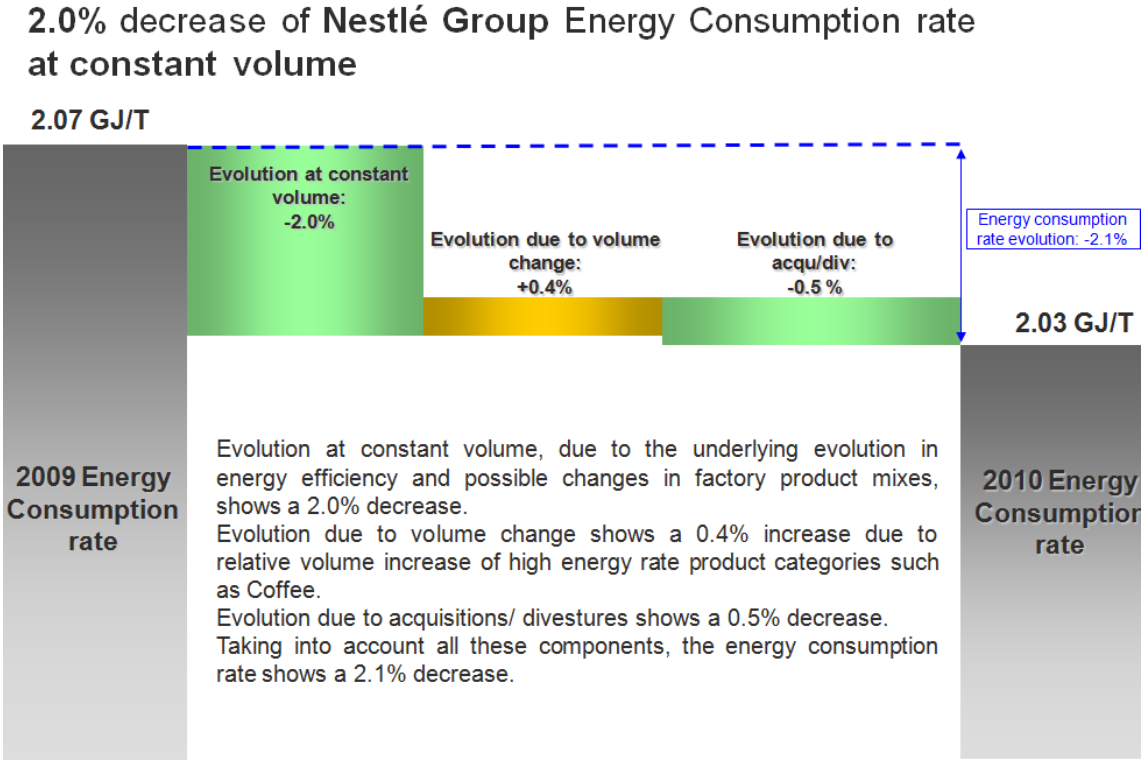

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Intermediate energy consumption

The sum of all energy consumed by Nestlé factories purchased from a third party. This includes mainly electricity and minor amounts of steam and hot water.

Indirect primary energy consumption (EN4)

This indicator represents the energy required to produce and deliver purchased electricity and any other intermediate energy products (such as district heat) that involve significant energy consumption upstream from our reporting boundary. This information also enables calculations of indirect greenhouse gas emissions. Typically a default factor is used based on data from the energy supplier or country default values.

Aspect: EMISSIONS

The direct greenhouse gas emissions (Scope 1) maintain stable in 2010, despite the increase of production volume.

Total direct greenhouse gas emission (EN16)

The sum of all on-site greenhouse gas emissions at Nestlé factories which arise from combustion processes used to manufacture products as well as the CO_2 equivalents from refrigerants. These greenhouse gas emissions can result from burning of fuels in boilers, roasters, dryers, electric generators and from refrigerants losses (CO_2 eq). Not included are greenhouse gases arising from transportation and business travel. This indicator corresponds to Scope 1 of the WRI/WBCSD GHG Protocol.

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Total indirect greenhouse gas emission (EN16)

These are greenhouse gas emissions arising from the generation of electricity, hot water and steam which is purchased by Nestlé or otherwise brought into our organizational boundary. The emissions physically occur at the facility where the electricity is generated. Typically publicly available country-specific default factors are used to calculate this from the purchased energy qualities. This indicator corresponds to Scope 2 of the WRI/WBCSD GHG Protocol.

Since 2010, we also track the greenhouse gas emissions generated from the electricity consumed in our Data Centers, which amounted to 48,315 tons of CO_2.

Emissions of ozone-depleting substances (EN19)

The sum of substances emitted from Nestlé factories which have been shown to contribute to the depletion of the ozone layer, that is, having ozone depletion potential. The common unit of measurement is R-11 equivalents. R-11 is one type of refrigerant, which has been assigned an ozone depleting potential of one, with all other ozone depleting substances being assigned relative values. The ozone depletion potential of each substance is determined using conversion factors commonly agreed by relevant authorities. These substances are primarily refrigerants in equipment used to cool or freeze products. In 2010 we focus on losses reductions and also on R22 phase out.
Both absolute ozone depletion potential and ozone depletion potential rate per tonne of product decreased since 2000.

Air acidification potential (EN20)

The sum of all SO_x and NO_x gas emissions at Nestlé factories resulting from the total on site energy consumption, converted into SO_x equivalents.
Since 2000 absolute air acidification potential decreased as well as the air acidification potential rate per tonne of product. These reductions have been achieved through energy savings and fuel-switching projects where fuels such as coal and heavy fuel oil were replaced by cleaner-burning fuels such as natural gas.

Aspect: EFFLUENTS

Despite the increase of production volume, the water discharged quality (efficiency) maintain stable in 2010.

Total water discharge (EN21)

The sum of all water effluents discharged from Nestlé factories. Water effluents are generated in manufacturing from processing, cleaning and some cooling processes and are discharged to subsurface waters, surface waters, sewers that lead to rivers, oceans, lakes, wetlands, treatment facilities and ground water.

Since 2000 absolute total water discharge decreased by 40.6% as well as the total water discharge per tonne of product, which decreased over this time period by 65.6%.

Total water discharge quality (EN21)

The water quality is expressed by the Chemical Oxygen Demand (COD), commonly used to measure the amount of organic compounds in water. A decrease in COD represents improvement of water quality.

Aspects: BY-PRODUCT AND WASTE FOR DISPOSAL

The same material leaving a Nestlé factory can be either a waste or a by-product, depending upon its final destination and use.

By-product (for recovery) (EN22)

Any materials that are generated during the manufacture of a product that leaves the factory and is destined for reuse or recovery, including recycling, composting and incineration with heat recovery. They are not limited just to the product manufactured; they include all materials used to support the manufacture.

In 2010, the by-products figure partly increased due to product mix change, increase of the production volume as well as a better data quality.

Waste for disposal (EN22)

Waste is any material, which arises during the manufacture or distribution stage of a product at a factory site, that is destined for final disposal to offsite landfill or to incineration without heat recovery. Not included are extraordinary wastes generated on a non-routine basis, such as construction and demolition waste, contaminated soils, etc.

Since 2000 absolute waste quantity decreased by 23%.The waste rate per tonne of product also decreased over this time period by 55%.The quantity of hazardous waste represent 1.6% of out waste for disposal.