

CEMENT

PRIMARY ENERGY FROM NON RENEWABLE SOURCES - CEMENT	Unidad de medida	2017	2018	2019	2020
COAL CONSUMPTION	GJ	21.753.525	21.510.600	22.612.479	21.435.283
CONSUMPTION OF NATURAL GAS	GJ	7.913.030	9.582.560	8.944.215	5.049.408
PET COKE	GJ	-	1.630.508	2.303.126	2.749.205
OTHER FUELS (SPECIFY THE TYPE OF FUELS INCLUDED IN THIS CATEGORY IN THE COMMENTS BOX)	GJ	1.575.387	664.123	821.199	759.414
PRIMARY ENERGY FROM NON-RENEWABLE SOURCES	GJ	31.241.943	33.387.790	34.681.019	29.993.310

PRIMARY ENERGY FROM RENEWABLE SOURCES - CEMENT	Unidad de medida	2017	2018	2019	2020
BIOMASS	GJ	222.054	65	273.024	557.090
OTHER RENEWABLE FUELS	GJ	-	-	-	-
PRIMARY ENERGY FROM RENEWABLE SOURCES	GJ	222.054	65	273.024	557.090

PRIMARY ENERGY FROM ALTERNATIVE SOURCES - CEMENT	Unidad de medida	2017	2018	2019	2020
TIRES	GJ	412.642	280.445	341.537	280.140
REFUSE-DERIVED FUEL - RDF INCLUDING PLASTIC MATERIAL	GJ	994.077	432.289	644.599	440.610
OTHER FUELS (SPECIFY THE TYPE OF FUELS INCLUDED IN THIS CATEGORY IN THE COMMENTS BOX)	GJ	114.307	1.013.586	724.417	659.063
PRIMARY ENERGY OF ALTERNATIVE SOURCES	GJ	1.521.025	1.726.320	1.710.553	1.379.813

ELECTRICITY CONSUMED FROM SELF- GENERATION POWER PLANTS - CEMENT	Unidad de medida	2017	2018	2019	2020
ENERGY CONSUMED FROM SELF-GENERATED HYDROELECTRIC POWER	GJ	375.303	151.424	-	-
ENERGY CONSUMED FROM SELF-GENERATED THERMOELECTRIC POWER	GJ	1.702.916	1.282.573	1.355.008	1.361.580
ELECTRICITY CONSUMED FROM SELF-GENERATION POWER PLANTS	GJ	2.078.219	1.433.997	1.355.008	1.361.580

ELECTRICITY FROM THE NETWORK - CEMENT	Unidad de medida	2017	2018	2019	2020
CONSUMPTION OF ELECTRICITY PURCHASED FROM THE NETWORK	GJ	3.215.674	4.027.972	4.259.866	3.767.077
CONSUMPTION OF ELECTRICITY TRANSFERRED BY OTHER PLANTS	GJ	200.865	40.613	-	-
ELECTRICITY FROM THE NETWORK	GJ	3.416.539	4.068.585	4.259.866	3.767.077

TOTAL ENERGY CONSUMPTION - CEMENT	Unidad de medida	2017	2018	2019	2020
TOTAL THERMAL ENERGY	GJ	32.985.022	35.114.176	36.664.595	31.930.213
TOTAL ELECTRICAL ENERGY	GJ	5.494.759	5.502.582	5.614.874	5.128.657
CEMENT TOTAL ENERGY CONSUMPTION	GJ	38.479.780	40.616.758	42.279.469	37.058.870

STARDARDS, METHODOLOGIES AND ASSUMPTIONS IN THE CALCULATIONS - CEMENT.

For the CCA region, consumption and LCVs (Lower Calorific Values) of fossil fuels and other fuels used in the plants and mines, as well as the consumption of electric power, were supplied by the facilities.

For the Colombia region, fuel consumptions for the process inside the kiln were extracted from SAP, as well as electric power consumption. Quarry and third-party diesel consumptions were supplied by the facilities.

For the USA region, all fossil and alternative fuel consumption and LCVs (lower caloric values) used in the process of the kiln were supplied by the plants, as well as the electric power consumption.

CONCRETE

PRIMARY ENERGY FROM NON RENEWABLE SOURCES - CONCRETE	Unidad de medida	2017	2018	2019	2020
DIESEL OIL CONSUMPTION	GJ	1.834.291	1.551.199	1.711.147	972.006
OTHER FUELS (SPECIFY THE TYPE OF FUELS INCLUDED IN THIS CATEGORY IN THE COMMENTS BOX)	GJ	-	409	-	-
PRIMARY ENERGY FROM NON-RENEWABLE SOURCES	GJ	1.834.291	1.551.608	1.711.147	972.006

ELECTRICITY PURCHASED - CONCRETE	Unidad de medida	2017	2018	2019	2020
CONSUMPTION OF ELECTRICITY PURCHASED	GJ	161.221	145.150	125.364	130.258
ELECTRICITY PURCHASED	GJ	161.221	145.150	125.364	130.258

TOTAL ENERGY CONSUMPTION - CONCRETE	Unidad de medida	2017	2018	2019	2020
TOTAL THERMAL ENERGY	GJ	1.834.291	1.551.608	1.711.147	972.006
TOTAL ELECTRICAL ENERGY	GJ	161.221	145.150	125.364	130.258
CONCRETE TOTAL ENERGY CONSUMPTION	GJ	1.995.513	1.696.758	1.836.511	1.102.264

STARDARDS, METHODOLOGIES AND ASSUMPTIONS IN THE CALCULATIONS - CONCRETE.

Lower Calorific Value (LCV) for diesel and gasoline found in: Units & Conversion Fact Sheet (MIT)

AGGREGATES

PRIMARY ENERGY FROM NON RENEWABLE SOURCES - AGGREGATES	Unidad de medida	2017	2018	2019	2020
DIESEL OIL CONSUMPTION	GJ	42.413	71.165	54.099	37.862
OTHER FUELS (SPECIFY THE TYPE OF FUELS INCLUDED IN THIS CATEGORY IN THE COMMENTS BOX)	GJ	-	-	-	-
PRIMARY ENERGY FROM NON-RENEWABLE SOURCES	GJ	42.413	71.165	54.099	37.862

ELECTRICITY PURCHASED - AGGREGATES	Unidad de medida	2017	2018	2019	2020
CONSUMPTION OF ELECTRICITY PURCHASED	GJ	22.270	21.565	17.687	12.673
ELECTRICITY PURCHASED	GJ	22.270	21.565	17.687	12.673

TOTAL ENERGY CONSUMPTION - AGGREGATES	Unidad de medida	2017	2018	2019	2020
TOTAL THERMAL ENERGY	GJ	42.413	71.165	54.099	37.862
TOTAL ELECTRICAL ENERGY	GJ	22.270	21.565	17.687	12.673
AGGREGATES TOTAL ENERGY CONSUMPTION	GJ	64.683	92.730	71.786	50.535

STARDARDS, METHODOLOGIES AND ASSUMPTIONS IN THE CALCULATIONS - AGGREGATES.

Lower Calorific Value (LCV) for diesel and gasoline found in: Units & Conversion Fact Sheet (MIT).

POWER GENERATION

PRIMARY ENERGY FROM NON RENEWABLE SOURCES - POWER GENERATION	Unidad de medida	2017	2018	2019	2020
COAL CONSUMPTION	GJ	4.559.985	3.182.272	2.770.590	2.431.087
CONSUMPTION OF NATURAL GAS	GJ	1.757.618	1.197.425	2.024.470	1.962.198
OTHER FUELS (SPECIFY THE TYPE OF FUELS INCLUDED IN THIS CATEGORY IN THE COMMENTS BOX)	GJ	213.638	239.624	219.319	221.021
PRIMARY ENERGY FROM NON-RENEWABLE SOURCES	GJ	6.531.242	4.619.321	5.014.380	4.614.307

TOTAL ENERGY CONSUMPTION - POWER GENERATION	Unidad de medida	2017	2018	2019	2020
TOTAL ENERGY CONSUMPTION IN POWER GENERATION	GJ	6.531.242	4.619.321	5.014.380	4.614.307

STARDARDS, METHODOLOGIES AND ASSUMPTIONS IN THE CALCULATIONS - POWER GENERATION.

The LCV (lower calorific value) of coal and natural gas were supplied by the plants.

Diesel and Gasoline: Units & Conversion Fact Sheet (MIT)

COMPANY

ENERGY CONSUMPTION WITHIN THE ORGANIZATION (GJ) - TOTAL	Unidad de medida	2017	2018	2019	2020
ENERGY SOLD (ELECTRICITY)	GJ	-	-	161.688	211.309
TOTAL ENERGY CONSUMPTION WITHIN THE ORGANIZATION (GJ)	GJ	45.368.302	45.742.995	47.685.449	41.253.086

DJSI TOTAL ENERGY CONSUMPTION (MWH)	Unidad de medida	2017	2018	2019	2020
A. FOSSIL FUELS (COAL, OIL, NATURAL GAS, ETC.) PURCHASED AND CONSUMED (FOR ENERGY PURPOSES)	MWH	11.436.366	11.008.302	11.516.847	9.893.747
A.1 ALTERNATIVE FUELS (TIRES, REFUSE-DERIVED FUEL - RDF INCLUDING PLASTIC MATERIAL, BIOMASS, OTHERS) CONSUMED	MWH	-	-	-	538.029
B. ELECTRICITY (NON-RENEWABLE) PURCHASED	MWH	676.029	995.979	896.876	744.808
C. STEAM / HEATING /COOLING AND OTHER ENERGY (NON-RENEWABLE) PURCHASED	MWH	-	-	-	-
D. TOTAL RENEWABLE ENERGY (BIOMASS, SOLAR, WIND ENERGY ETC.) PURCHASED OR GENERATED	MWH	489.912	214.446	326.157	341.305
E. TOTAL NON-RENEWABLE ENERGY (ELECTRICITY AND HEATING & COOLING) SOLD	MWH	-	-	44.913	58.697
TOTAL NON-RENEWABLE ENERGY CONSUMPTION (A+B+C-E) (MWH)	MWH	12.112.395	12.004.281	12.368.809	10.579.857
TOTAL ENERGY CONSUMPTION (MWH)	MWH	12.602.307	12.218.727	12.694.966	11.459.191
PERCENTAGE RENEWABLE ELECTRICITY PURCHASED (%)	%	ND	ND	36	31

GRI [302-4]

Reduction of energy consumption

COLOMBIA

INITIATIVE #1 TO REDUCE ENERGY CONSUMPTION IN COLOMBIA

INITIATIVE
BASELINE YEAR TO CALCULATE THE REDUCTION
REDUCTION IN THE CONSUMPTION OF ENERGY IN MJ BY 2020
INDICATE WHETHER THIS IS FUEL OR ENERGY CONSUMPTION
DESCRIPTION OF THE INITIATIVE

INFORMATION
Colombia - (Cement Plants: Cartagena, Rioclaro, Tolviejo): improvements in operations and stability of kilns in various cement plants
2019
248.229.828
Fuel.
Increase in TPD of the kiln 4 at Cartagena Cement Plant. Quality of the coal and increase in MTBF at the Rioclaro plant. Quality of the coal consumed in the Tolviejo plant.

INITIATIVE #2 TO REDUCE ENERGY CONSUMPTION IN COLOMBIA
INITIATIVE
BASELINE YEAR TO CALCULATE THE REDUCTION
REDUCTION IN THE CONSUMPTION OF ENERGY IN MJ BY 2020
INDICATE WHETHER THIS IS FUEL OR ENERGY CONSUMPTION
DESCRIPTION OF THE INITIATIVE

INFORMATION
Colombia - Rioclaro Plant: use of ash in thermally activated clays process at Rioclaro plant.
2019
22.648.000
Fuel.
Dosing of ash as a reducing agent in kiln 3 of Rioclaro Plant in which the process of thermal activation of the clays is carried out. These calcined clays are then used as substitutes for clinker in the cement milling process.

CARIBE Y CENTROAMÉRICA

INITIATIVE #1 TO REDUCE ENERGY CONSUMPTION IN CCA
INITIATIVE
BASELINE YEAR TO CALCULATE THE REDUCTION
REDUCTION IN THE CONSUMPTION OF ENERGY IN MJ BY 2020
INDICATE WHETHER THIS IS FUEL OR ENERGY CONSUMPTION
DESCRIPTION OF THE INITIATIVE

INFORMATION
Caribbean and Central America - Piedras Azules Plant (Honduras): injection of hot gases to cement mill 1
2019
1.708.301
Electricity.
Use of excess gases from the clinker cooler in the cement mill. A production increase of more than 2.0 t / h was obtained.

INITIATIVE #2 TO REDUCE ENERGY CONSUMPTION IN CCA
INITIATIVE
BASELINE YEAR TO CALCULATE THE REDUCTION
REDUCTION IN THE CONSUMPTION OF ENERGY IN MJ BY 2020
INDICATE WHETHER THIS IS FUEL OR ENERGY CONSUMPTION
DESCRIPTION OF THE INITIATIVE

INFORMATION
Caribbean and Central America - Dominican Republic Plant: implementation of Digital Twin system
2019
864979
Electricity.
Implementation a master control system that allows the mill to be operated remotely, optimizing its operation. During the months of October and November the percentage of connectivity improved to 72%. It should be noted that our Digital Twin system was operating intermittently for the first 9 months of 2020.

INITIATIVE #3 TO REDUCE ENERGY CONSUMPTION IN CCA
INITIATIVE
BASELINE YEAR TO CALCULATE THE REDUCTION
REDUCTION IN THE CONSUMPTION OF ENERGY IN MJ BY 2020
INDICATE WHETHER THIS IS FUEL OR ENERGY CONSUMPTION
DESCRIPTION OF THE INITIATIVE

INFORMATION
Caribbean and Central America - Quebrancha Plant (Panama): water injection system and Phase 2 additive.
2019
889.930
Electricity.
Modification of water and additive injection system, incorporating arrangements and control systems to mix water and additive together with air to generate aspersion on the grinding table of the vertical mill.

REDUCTION IN THE CONSUMPTION OF ENERGY IN MJ BY 2020
COLOMBIA
UNITED STATES
CARIBBEAN AND CENTRAL AMERICA
TOTAL

INFORMATION
270.877.828
-
3.463.209
274.341.037