# ENVIRONMENTAL PROGRAM CRIFOLS 2017–2019





**ENERGY** 

**ENVIRONMENTAL PROGRAM** Our commitment to the environment 2017–2019





## INCREASE THE ENERGY EFFICIENCY OF EXISTING FACILITIES. REDUCE ELECTRICITY CONSUMPTION BY 2.06 MILLION kWh ANNUALLY

Objective	Company	Goals
Ontimize electric energy use at the Bioscience division	GE/GH	Increase the energy efficiency of heating and cooling.
facilities in Parets del Vallès (Barcelona, Spain)		Optimize the generation and distribution circuit of industrial cooling.
Reduce consumption by 1,458 Mivin annually	BI	Carry out an energy audit subject to Grifols standards.
Optimize electric energy use at the Hospital division facilities. Reduce consumption by 110 MWh annually	LG	Monitor the production of cold water for the cooling process and establish operation schedules according to the needs of each area at Laboratorios Grifols facilities in Parets del Vallès (Barcelona, Spain).
		Increase the energy efficiency of the industrial compressed air network at the Parets del Vallès facilities.
		Carry out an energy audit subject to Grifols standards at the facilities in Las Torres de Cotillas (Murcia, Spain).
Optimize electric energy use at the affiliates in Spain and at the corporate headquarters. Reduce consumption by 68 MWh annually	GH/GMV	Install presence detectors and photosensitive cells in the Valencia affiliate (Spain) and install energy-efficient heating and cooling equipment in the warehouse of the Madrid affiliate (Spain).
	GH	Optimize heating and cooling programming in the corporate headquarters in Sant Cugat del Vallès (Barcelona, Spain).





Objective	Company	Goals
Optimize electric energy use at the Diagnostic division	GDS	Monitor energy consumption and apply energy efficiency measures to the lighting.
Reduce consumption by 430 MWh annually		Carry out an energy audit subject to Grifols standards and study the implementation of solar panels.

### **REDUCE ELECTRIC ENERGY DEMAND IN NEW FACILITIES BY 6.2 MILLION kWh ANNUALLY**

Objective	Company	Goals
Apply energy efficiency measures during the design of new facilities, resulting in an annual reduction of 6,229 MWh	GH	Apply energy efficiency measures during the construction of the Sant Cugat 5 building and to the new auditorium in Sant Cugat del Vallès (Barcelona, Spain).
	GTI	Apply energy efficiency measures to the construction of the new fractionation building and to the expansion of purification and dosage processes at the Bioscience division facilities in Clayton (North Carolina, U.S.A.).
	IG	Install energy-efficient equipment in the expansion of the albumin manufacturing plant.





# DECREASE THERMAL ENERGY CONSUMPTION IN EXISTING BUILDINGS. REDUCE CONSUMPTION BY 19.7 MILLION kWh ANNUALLY

Objective	Company	Goals
Reduce thermal energy consumption at the Bioscience	IG/GH	Apply energy efficiency measures to the steam network: optimize residual heat in steam generation and decrease heat loss during distribution.
Decrease consumption by 19,000 MWh annually		Carry out an overhaul of the cogeneration engines to prolong their service life by ten years.
Reduce thermal energy consumption at the Hospital division facilities. Decrease consumption by 589 MWh annually	LG	Decrease heat loss in the distribution of steam, hot water, and cold water at the facilities in Parets del Vallès (Barcelona, Spain).
Reduce thermal energy consumption at the Diagnostic facilities in Emeryville, California, U.S.A. Decrease consumption by 126 MWh annually	GDS	Improve roof and window insulation.





### REDUCE THE DEMAND FOR NATURAL GAS IN THE CONSTRUCTION OF NEW FACILITIES BY 0.92 MILLION kWh ANNUALLY

Objective	Company	Goals
Optimize thermal energy consumption at the Bioscience division facilities in Parets del Vallès (Barcelona, Spain) by 692 MWh annually	IG/GE	Apply energy efficiency measures in the expansion of the albumin manufacturing plant: Implementation of two automatic cleaning systems (CIP) and pipe insulation.
Optimize thermal energy consumption in the Hospital division by 233 MWh annually	LG	Install a high-efficiency distiller at the facilities in Las Torres de Cotillas (Murcia, Spain).





Objective	Company	Goals
Optimization of electricity consumption in existing facilities. Reduction of 829 MWh per year.	GH/GWO/GI	Energy audits in GWO Ireland, Grifols Deutschland and Grifols Italia.
	GH	Standardization of outdoors lighting systems and implementation of energy-efficient systems.
	GH	Reconditioning of the absorption machine used in the Bioscience facilities at Parets del Vallès (Barcelona, Spain).
	GH	Implementation of the pilot project for the climate control modelling in the Central offices facilities at Sant Cugat (Barcelona, Spain).
Optimization of natural gas consumption in existing facilities. Reduction of 4100 MWh per year.	GH/GT	Implementation of oxygen controls in several boilers used in the Bioscience facilities at Parets del Vallès (Barcelona, Spain) and Clayton (North Carolina, USA).
	GH	Optimization of the condensate management from the boilers used in all Parets del Vallès facilities (Barcelona, Spain).
Optimization of natural gas consumption in new facilities. Reduction of 1121 MWh per year.	GE/GWO	Implementation of an energy-efficient boiler in the Bioscience facilities at Dublin, Ireland.



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WATER

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## **REDUCE WATER CONSUMPTION IN EXISTING FACILITIES BY 265,000 m3 ANNUALLY**

Objective	Company	Goals
Reduce water consumption in the Bioscience division. Decrease consumption by 247,800 m3 annually	GE/IG/GH	Reuse 100,000 m3 of clean water for maintenance and other secondary processes. Parets del Vallès (Barcelona, Spain)
		Decrease reverse osmosis reject water by 43,200 m3 in Parets del Vallès (Barcelona, Spain)
	GBI	Reuse 28,770 m3 of clean water for maintenance and other secondary processes in Los Angeles (California, U.S.A.)
	GTI	Decrease reverse osmosis reject water by 75,600 m3 in Clayton (North Carolina, U.S.A.)
Reduce water consumption in the Hospital division. Decrease water consumption by 16,900 m3 annually	LG	Decrease reverse osmosis reject water by 14,000 m3 at the facilities in Parets del Vallès (Barcelona, Spain)
		Recover 2,900 m3 of clean water at the facilities in Parets del Vallès (Barcelona, Spain)
Optimize water use for irrigation. Reduce by 300 m3 annually	GDS	Optimize water use for irrigation by 300 m3 at the Diagnostic division facilities in Emeryville (California, U.S.A.).
	GTI	Reduce water use for irrigation by 50% in the new office building at the Bioscience division facilities in Clayton (North Carolina, U.S.A.).



Objective	Company	Goals
Reduction of 6,500 m3 per year in water consumption.	GT	Implementation of vacuum pumps for reducing the water consumption and recovering water from the refrigeration towers in the Bioscience facilities at Clayton (North Carolina, USA).







#### **REDUCE THE VOLUME OF WASTE BY 450 METRIC TONS ANNUALLY**

Objective	Company	Goals
Reduce the volume of externally managed chemical waste at the Diagnostic division facilities in San Francisco (California, U.S.A.) Decrease externally managed chemical waste by 40 MT/year in San Francisco (California, USA).	GDS	Design and construct a system to neutralize basic solutions originating from automated equipment-cleaning systems.
Reduce the disposal of harmful cleaning chemicals and containers at the Bioscience division facilities in Clayton (North Carolina, U.S.A.)	GTI	Only use environmentally friendly sanitation products in the new office building.
Achieve Zero Waste to Landfill Status. Decrease waste going to the landfill by 410 MT	GTI	Complete required actions to conduct certification audit to verify Zero Waste To Landfill standard.

#### **INCREASE THE RECYCLING OF WASTE BY 270 METRIC TONS ANNUALLY**

Objective	Company	Goals
Increase the recycling of generated waste in the cafeteria	GH/GE/IG/G MV/GI/LG/D G/BI	Recycle the cups used in the cafeteria and kitchen areas.
and kitchen areas. Recycle 270 MT annually		Separate the organic parts from the cafeteria waste and organize its composting.
Minimize the waste going to the landfill	GTI	Recycle 95% of the waste generated in the construction of the new office building at the Bioscience division facilities in Clayton (North Carolina, U.S.A.)

## GRIFOLS



Objective	Company	Goals
Reduction of 6 T per year in plastic waste generation.	GH/GE/IG/GMV /GI/LG/DG/BI	Remove the use of water plastic bottles from the catering services in Parets del Vallès and Sant Cugat facilities (Barcelona, Spain).





# CONSUMPTION

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#### **REDUCE THE CONSUMPTION OF RAW MATERIALS**

Objective	Company	Goals
Reduce the consumption of raw materials at the Diagnostic	DG	Digitize instrument manuals and eliminate their paper format
Decrease of 4.5 MT/year		Decrease glass consumption by discontinuing the use of pipettes in the production of red blood cells.
Reduce sodium hydroxide consumption at the Hospital division facilities in Parets del Vallès (Barcelona, Spain)	LG	Minimize sodium hydroxide consumption in the automated cleaning equipment (CIPs).



## **OTHERS**

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## **OTHERS**

## STANDARDIZATION OF THE ENVIRONMENTAL MANAGEMENT SYSTEM IN THE COMPANY'S PRODUCTION FACILITIES

Objective	Company	Goals
Implement and certify the ISO 14001 environmental management system.	GDS	Achieve ISO 14001 environmental management system certification at the Diagnostic division facilities in Emeryville (California, U.S.A.).
	GBI	Achieve ISO 14001 environmental management system certification at the Bioscience division facilities in Los Angeles (California, U.S.A.).

#### **REDUCE GAS EMISSIONS INTO THE ATMOSPHERE**

Objective	Company	Goals
Reduce the amount of fluorinated gases used in cooling systems	BI	Replace the fluorinated gas in the cooling system for a –30°C cold chamber with another that has a lower Global Warming Potential (GWP) at the Biomat facilities in Parets del Vallès (Barcelona, Spain).
	GBI	Replace five cooling systems with others that use greenhouse gases with lower GWP.
Reduce CO2 emissions originating from plasma transportation by 95 tonne of oil equivalent (toe)/year	BI/GI	Optimize the plasma pick-up routes to the plasma donation centers in the U.S.A.
		Optimize loads in plasma transportation from the U.S.A. to Europe.
Reduce VOC emissions	GTI	Use materials low in VOCs for the construction of the new office building.



#### **ENVIRONMENTAL AWARENESS**

Objective	Company	Goals
Encourage the use of clean energy and best practices in transportation	GH/IG/LG/ DG/GI/GMV/ BI/GTI	Install electric chargers on company premises to encourage the use of electric cars
	GTI	Designate ten parking spaces at the Bioscience division facilities in Clayton (North Carolina, U.S.A.) for shared vehicles
	GH	Purchase two electric cars for package delivery on the Grifols premises in Parets del Vallès, Sant Cugat, and Barcelona.

GRIFOLS, S.A.: GH GRIFOLS THERAPEUTICS, INC: GTI INSTITUTO GRIFOLS, S.A.: IG GRIFOLS BIOLOGICALS, INC: GBI BIOMAT, S.A.: BI LABORATORIOS GRIFOLS, S.A.: LG GRIFOLS DIAGNOSTICS SOLUTIONS, INC: GDS DIAGNOSTIC GRIFOLS, S.A.: DG GRIFOLS ENGINEERING, S.A.: GE GRIFOLS INTERNATIONAL, S.A.: GI GRIFOLS MOVACO, S.A.: GMV



Objective	Company	Goals
Implementation of new cooling systems using refrigerants with a lower or null GWP (Global Warming Potential).	GE / IG / GI / GH	Replacement of a cooling system machine in the Bioscience facilities at Parets del Vallès (Barcelona, Spain) and Grifols Italy.
	GI / GH	Implementation of a new cooling system with null GWP in the Bioscience facilities at Parets del Vallès (Barcelona, Spain).
Reduction of atmospheric emissions using photovoltaic panels for the generation of energy.	LG / GH	Implementation of a photovoltaic power station in the Hospital facilities at Las Torres de Cotillas (Murcia, Spain).
	GT	Implementation of a photovoltaic power station in the Bioscience facilities at Clayton (North Carolina, USA).

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