



Annexes

Ebro Foods, S.A.

ANNEX 1

LIST OF SUBSIDIARIES OF THE EBRO GROUP IN 2020

COMPANY	COUNTRY	BUSINESS AREA
AGROMERUAN, S.R.A.L AU	MOROCCO	Rice
ARROZEIRAS MUNDIARROZ, S.A.	PORTUGAL	Rice
AROTZ FOODS, S.A.	SPAIN	Others
BERTAGNI 1882, S.P.A.	ITALY	Pasta
BOOST NUTRITION, C.V.	BELGIUM	Rice
CATELLI FOODS CORPORATION	CANADA	Pasta
EBRO FOODS, S.A.	SPAIN	Parent (Holding)
EBROFROST HOLDING, GMBH	GERMANY, DENMARK & UK	Rice, pasta and frozen food
EBRO INDIA, PRIVATE LTD.	INDIA	Rice
EURYZA, GMBH	GERMANY	Rice
GEOVITA FUNCTIONAL INGREDIENTS, S.R.L.	ITALY	Ingredients
HERBA BANGKOK, S.L.	THAILAND	Rice
HERBA CAMBODIA CO. LTD	CAMBODIA	Rice
HERBA INGREDIENTS, B.V.	NETHERLANDS & BELGIUM	Ingredients
HERBA RICEMILLS, S.L.U.	SPAIN	Rice
HERBA RICEMILLS ROM, S.R.L.	ROMANIA	Rice
LASSIE, B.V.	NETHERLANDS	Rice
LA LOMA ALIMENTOS, S.A.	ARGENTINA	Rice
LUSTUCRU FRAIS, S.A.S.	FRANCE	Rice and pasta
MUNDI RISO, S.R.L.	ITALY	Rice
MUNDI RIZ, S.A.	MOROCCO	Rice
NEOFARMS BIO, S.A.	ARGENTINA	Rice
PANZANI, S.A.S.	FRANCE	Pasta
PASTIFICIO LUCIO GAROFALO, SPA	ITALY	Pasta
RICELAND MAGYARORZAG, KFT	HUNGARY	Rice
RIVIANA FOODS, INC.	USA	Rice and pasta
ROLAND MONTERRAT, SA. S	FRANCE	Fresh food
SANTA RITA HARINAS, S.L.U.	SPAIN	Others
S&B HERBA FOODS, LTD.	UK	Rice
TILDA, LTD.	UK	Rice
TRANSIMPEX, GMBH	GERMANY	Rice

LIST OF INDUSTRIAL FACILITIES (PRODUCTION PLANTS AND WAREHOUSES) AND OFFICES OF THE EBRO GROUP IN 2020

COMPANY	COUNTRY	WORKPLACE	TYPE OF FACILITY
AROTZ FOOD	SPAIN	Navaleno	Industrial
ARROZEIRAS MUNDIARROZ	PORTUGAL	Coruche	Industrial
		Lisbon Office	Office (lease)
BERTAGNI 1882	ITALY	Vicenza	Industrial
		Avio	Industrial
		Avio & Arcugnano Warehouses	Warehouse
BOOST NUTRITION	BELGIUM	Merksem	Industrial
CATELLI FOODS CORPORATION	CANADA	Montreal	Industrial
		Delta	Industrial
		Hamilton	Industrial
		Madrid	Office (lease)
EBRO FOODS HOLDING	SPAIN	Barcelona	Office (lease)
		Granada	Office (lease)
		Taraori	Industrial
EBRO INDIA	INDIA	Taraori	Industrial
EBROFROST DENMARK	DENMARK	Orbaek	Industrial
EBROFROST GERMANY	GERMANY	Offingen	Industrial
EBROFROST UK	UK	Beckley	Industrial
EURYZA	GERMANY	Hamburg Office	Office (lease)
GEOVITA FUNCTIONAL INGREDIENTS	ITALY	Bruno	Industrial
		Nizza Monferrato	Industrial
		Verona	Industrial
		Villanova Monferrato	Industrial
HERBA BANGKOK	THAILAND	Nong Khae	Industrial
HERBA CAMBODIA	CAMBODIA	Phnom Phen	Industrial
HERBA INGREDIENTS	BELGIUM	Schoten (4 plants)	Industrial
		Beernen Office	Office (lease)
	NETHERLANDS	Wormer	Industrial
HERBA RICEMILLS	SPAIN	San Juan de Aznalfarache	Industrial
		Jerez de la Frontera	Industrial
		Coria del Río	Industrial
		Isla Mayor	Industrial
		Silla	Industrial
		Algemesí	Industrial
		L'Aldea	Industrial
		La Rinconada	Industrial
		Los Palacios	Industrial
HERBA RICEMILLS ROM	ROMANIA	Warehouses (Cotemsa, Raza y Ecorub)	Warehouse
		Herba Ricemills Romania	Office (lease)
LASSIE	NETHERLANDS	Wormer	Industrial

COMPANY	COUNTRY	WORKPLACE	TYPE OF FACILITY
LA LOMA ALIMENTOS	ARGENTINA	Los Charrúas	Industrial
		Chajarí	Industrial
		Los Conquistadores	Industrial
		Oficina Buenos Aires	Office (lease)
LUSTUCRU FRAIS	FRANCE	St Genis Laval	Industrial
		Lorette	Industrial
		Communay	Industrial
MUNDI RIZ	MOROCCO	Larache	Industrial
MUNDI RISO	ITALY	Vercelli	Industrial
NEOFARM BIO	ARGENTINA	Concordia Office	Office (lease)
PANZANI	FRANCE	Saint Just (Bellevue)	Industrial
		Littoral	Industrial
		Gennevilliers	Industrial
		Nanterre	Industrial
		La Montre	Industrial
		Vitrolles	Industrial
		Lyon Office	Office (owned)
		Warehouses (Les Mureaux & Berre)	Warehouses
PASTIFICIO LUCIO GAROFALO	ITALY	Gragnano	Industrial
RICELAND MAGYARORZAG	HUNGARY	Commercial office	Office (lease)
RIVIANA	USA	Memphis	Industrial
		Carlisle	Industrial
		Brinkley	Industrial
		Hazen	Industrial
		Clearbrook	Industrial
		Freeport	Industrial
		Alvin	Industrial
		Winchester	Industrial
		Fresno	Industrial
		St Louis	Industrial
ROLAND MONTERRAT	FRANCE	Feillens	Industrial
S&B HERBA FOODS	UK	Cambridge	Industrial
		Liverpool	Industrial
		Orpington Office	Office (lease)
SANTA RITA HARINAS	SPAIN	Loranca de Tajuña	Industrial
TILDA	UK	Classic	Industrial
		Jazz	Industrial
	INDIA	India Office	Office (lease)
	UAE	Dubai Office	Office (lease)
TRANSIMPEX	GERMANY	Lambsheim Plant	Industrial
		Lambsheim Office	Office (owned)

Ebro Foods, S.A.

ANNEX 2



BREAKDOWN OF COVID DONATIONS IN SPAIN

INITIATIVES IN HOSPITALS AND CARE HOMES

RECIPIENT	FOR
Hospital Jiménez Díaz	Hydroalcoholic wipes
Hospital Clínico San Carlos	536 washable pillows
Hospital Jiménez Díaz	300 mask adapters for patients
Residencias Orden San Juan de Dios	Donation to purchase disinfection material
Fundación Hospital Universitario La Paz	Donation to purchase sanitary material
Fundación Hospital Universitario La Paz	10 full beds
Hospital Jiménez Díaz	340 cauterization sets
Hospital Clínico San Carlos	Uniform dispensers
Residencias Lares	5,010 tests
Hospital Gregorio Marañón	50 industrial laundry containers
Hospital Clínico San Carlos	Clean clothes distribution cabinets
Residencias Lares	Masks and gowns
Residencias	1,000 tests
Hospital Clínico San Carlos	3 trolleys for the clothing collection system
Proyecto gestión y compra de 6 respiradores Draguer	6 anaesthesia equipment & invasive ventilators, arrived 3 April
Ifema	203 side tables
Fundación ONCE, Capacis, Balía, Apascide, Mater et Magistra, Proyecto Hombre, Alzheimer San Juan	100,000 surgical masks
Hospital Universitario La Fe Valencia	50 industrial laundry containers
Ayuntamiento Madrid	34,970 hydroalcoholic gel 150 ml

FOOD DONATIONS

RECIPIENT	CASH CONTRIBUTIONS
Food banks	EUR 100,000
IFEMA solidarity breakfasts	EUR 10,000
World Central Kitchen	USD 100,000
Action promoted by Ebro India Hands for Humanity	EUR 7,527

RECIPIENT	PRODUCT CONTRIBUTIONS
Banco Alimentos Palma de Mallorca	22,210 kg rice
Food Truck/CESAL Madrid	1,005 kg rice for solidarity kitchens
Cruz Roja Coria del Río	792 kg rice for care homes
Fundación Alalá Jerez	1,005 kg Brillante rice
Hospital Gregorio Marañón	200 kg rice
Colectivos vulnerables de la ciudad de Barcelona	24,264 kg rice for "Baskets against COVID"
Cáritas/Cruz Roja Valverde de Llanera Badajoz	840 kg rice
Cruz Roja Madrid	1,920 kg rice
Hermandades de Sevilla	840 kg Brillante rice
Iniciativa solidaria Federación Chefs italianos	216 kg variety of Garofalo Pasta
IFEMA - Grupo Larrumba	504 kg rice and cups
Ayuntamiento Camas	840 kg La Cigala rice
Manos de Ayuda Social Madrid	840 kg La Cigala rice
Archidiócesis Sevilla	1,680 kg rice for emigrants
Proyecto Uninicio-Madrid	1,680 kg La Cigala rice
Orden de Malta Valencia	1,002 kg La Fallera rice
Ayuda a Una Familia Valencia	1,620 kg La Fallera rice
ONG Olvidados (Madrid)	840 kg La Cigala rice
Cáritas Alcalá de Henares	1,680 kg La Cigala rice
Asociación La Tribu Vallecas	840 kg La Cigala rice
Hdad. Santo Cristo Expira Jerez	840 kg La Cigala rice
Hermandad Jesús de la Pasión Jerez	840 kg La Cigala rice
Restaurante Aragón 20 Torrejón	702 kg rice
Mercasa-Mercalicante	720 kg rice & 112 kg pasta Garofalo
Gastronomix - comidas solidarias	1,544 kg rice & pasta
Asociación Pasión por el Hombre Madrid - Parroquia Santo Tomás Apóstol Madrid	1,680 kg La Cigala rice
Parroquia San Juan de Dios Madrid	1,680 kg La Cigala rice
Fundación Altius Madrid	1,680 kg La Cigala rice
Asoc. Solidaria Puerto de Valencia "El Puchero"	630 kg La Fallera rice
Cruz Roja Cádiz	840 kg La Cigala rice
OAR Orcasitas-Madrid	1,584 kg SOS rice
Banco Alimentos Córdoba	792 kg SOS rice
Banco Alimentos Granada	792 kg SOS rice
Food Truck Madrid	2,010 kg Brillante rice solidarity kitchens Latina - Villaverde
Banco Alimentos Madrid	1,584 kg SOS rice
Obra Social Santa María Josefa Madrid	792 kg SOS rice
Hermandad Inmaculado Corazón de María T	792 kg SOS rice

RECIPIENT	PRODUCT CONTRIBUTIONS
Parroquia San Basilio Madrid	792 kg SOS rice
Parroquia San Jerónimo Sevilla	792 kg SOS rice
Fundación I-HELP Madrid	792 kg SOS rice
Fundación Adecua Valencia	720 kg La Fallera rice
Asociación Pasión por el Hombre Madrid Parroquia Santo Tomás Apóstol Madrid	792 kg SOS rice
ONG REMAR Sevilla	840 kg La Cigala rice
Asociación Achalay Madrid	792 kg SOS rice
Parroquia San Juan de Dios Madrid	1,680 kg La Cigala rice
Fundación Pau Gasol	8,000 Brillante rice cups
Asociación Vecinos La Fraternidad-Los Cármenes Madrid	792 kg SOS rice
Pamarel Gastronomía Madrid	Solidarity kitchens
Tuuusuper Madrid	1,680 kg La Cigala rice
Asociación Pasión por el Hombre Madrid Parroquia Santo Tomás Apóstol Madrid	1,680 kg La Cigala rice
Parroquia Nta. Sra. De la Candelaria Sevilla- Hambre0	840 kg La Cigala rice
Parroquia Nta. Sra. De Lourdes Sevilla- Hambre0	840 kg La Cigala rice
Capilla de la Vera Cruz-Lebrija (Sevilla)	840 kg La Cigala rice
Asociación Pasión por el Hombre Madrid Parroquia Santo Tomás Apóstol Madrid	2,376 kg SOS rice
AV Puerto Chico (Madrid)	792 kg SOS rice
Banco Alimentos Sevilla	4,056 kg de rice
Obra Social Santa María Josefa Madrid	840 kg La Cigala rice
Inserta Andalucía (Granada)	840 kg La Cigala rice
Fundación Mas (Sevilla) - Campaña 200.000 kg de ilusión	SOS & Sabroz rice (4,536 kg)
Cáritas/Cruz Roja Valverde de Llanera Badajoz	792 kg SOS rice
Asoc. Solidaria Puerto de Valencia "El Puchero"	630 kg La Fallera rice
Hermandad Compañía de la Cruz - Jerez	1,680 kg La Cigala rice
Fundación Candelita Madrid	792 kg SOS rice
Health Warriors - Barcelona	5,544 kg SOS rice for boxes of healthy food for vulnerable persons
Cáritas Española	45,000 vouchers to buy rice & pasta
Fundación Adecua Valencia	720 kg La Fallera rice
Cáritas Nuestra Señora De Los Ángeles y San José De Calasanz	192 kg SOS rice
Hermandad la Macarena (Sevilla)	792 kg SOS rice & 200 kg Garofalo macaroni
Ayuda a Una Familia Valencia	600 kg La Fallera rice
Pamarel Gastronomía Madrid	Solidarity kitchens rice & pasta
Orden de Malta Valencia	1,020 kg La Fallera rice
Fundación Adecua Valencia	720 kg La Fallera rice
Banco de alimentos Zaragoza	1,680 kg La Cigala rice
Asoc. Solidaria Puerto de Valencia "El Puchero"	630 kg La Fallera rice
Fundación Sevilla Acoge	792 kg SOS rice
Asociación Vecinos La Fraternidad-Los Cármenes Madrid	840 kg La Cigala rice
Proyecto Fraternistas - Sevilla	840 kg La Cigala rice
Pamarel Gastronomía Madrid	Solidarity kitchens
ONG AVANZA Madrid	2,520 kg La Cigala rice
Hermandad Virgen del Carmen Jerez	840 kg La Cigala rice

RECIPIENT	PRODUCT CONTRIBUTIONS
Despensa solidaria de Carabanchel	792 kg SOS rice
Residencia Los Peñascales	1,584 kg SOS rice
Hermandades	Food for San Juan home and Blanca Paloma nursery (Jerez)
Comandancia Guardia Civil Sevilla	Solidarity initiative distribution of food
World Central Kitchen JOSE ANDRES	Solidarity kitchens -soup kitchens
ACOES SEVILLA	840 kg La Cigala rice
Fundacion Eduardo Calabuig	Rice La Fallera
Proyecto Quédate en Casa	3,264 kg rice
Asociación La Tribu Vallecas	792 kg SOS rice
Hermandades de Sevilla	Christmas Sweets care homes in Sevilla
Hermandades de Sevilla	Christmas Sweets soup kitchens in Sevilla
Banco Alimentos Sevilla	Assortment of food
Banco Alimentos Sevilla	Assortment of food
Banco Alimentos Sevilla	Assortment of food
Orden de Malta (Sevilla)	San Juan de Acre kitchen (Sevilla)
Comedor Social San Juan de Dios (Sevilla)	Soup kitchen
Comedor benéfico San Vicente de Paul (Sevilla)-Compañía Hijas de la Caridad	Soup kitchen
RAPA	Food for shelter for sub-Saharan refugees
Manos de Ayuda Social (Madrid)	Vallecas soup kitchen
Orden de Malta (Madrid)	San Blas soup kitchen
ONG Olvidados(Madrid)	Purchase of food El Pozo district
ACHALAY (Madrid)	Purchase of food San Blas district
Asociación Nueva Acrópolis (Valencia)	Soup kitchen
Fundación Ayuda a una Familia (Valencia)	Purchase of food
Cáritas L'Aldea (Tarragona)	School meal grants and purchase food

EMPLOYMENT

RECIPIENT	CASH CONTRIBUTIONS
Fundación Adecco	Emergency Employment Programme

Ebro Foods, S.A.

ANNEX 3

LIST OF FOOD SAFETY AND QUALITY CERTIFICATIONS OF THE GROUP'S SUBSIDIARIES IN 2020

COMPANY	COUNTRY	WORKPLACE	CERTIFICATION
AROTZ FOOD	SPAIN	NAVALENO	IFS
ARROZEIRAS MUNDIARROZ	PORTUGAL	CORUCHE	ISO 9001
			ISO 22000
			FOOD PRODUCT CERTIFICATION
BERTAGNI 1882	ITALY	AVIO	IFS
		VICENZA	BRC
			IFS
			BIOS - ORGANIC CERTIFICATION
			BRC
BOOST NUTRITION	BELGIUM	MERKSEM	IFS
			KOSHER
			ORGANIC CERTIFICATION
CATELLI FOODS CORPORATION	CANADÁ	MONTREAL	KOSHER
		DELTA	SQF
			BRC
			BRC
EBROFROST DENMARK	DENMARK	ORBAEK	BRC
			KOSHER
			ORGANIC CERTIFICATION
EBROFROST GERMANY	GERMANY	OFFINGEN	BRC
			HALAL
			KAT
			ORGANIC CERTIFICATION
EBROFROST UK	UK	BECKLEY	BRC
EBROFROST NORTHAMERICA	USA	MEMPHIS	SQF
EBRO INDIA	INDIA	TARAORI	ISO 22000
			ORGANIC CERTIFICATION
			BRC
			IPQC
			PPQS
			KOSHER

COMPANY	COUNTRY	WORKPLACE	CERTIFICATION
GEOVITA FUNCTIONAL INGREDIENTS	ITALY	BRUNO	BCR
			ORGANIC CERTIFICATION
			KOSHER
		NIZZA MONFERRATO	IFS
			HALAL
			FSSC 22000
		VILLANOVA MONFERRATO	ORGANIC
			BRC
			IFS
HERBA BANGKOK	THAILAND	SARABURI	HALAL
			ORGANIC CERTIFICATION
			ISO 9001
			BRC
			ORGANIC CERTIFICATION
			HALAL
			KOSHER
			GMP & HACCP
			GLUTEN FREE CERTIFICATION
HERBA CAMBODIA	CAMBODIA	PHNOM PENH	ISO 9001
			ORGANIC CERTIFICATION (EU)
			ORGANIC CERTIFICATION (NOP)
			KOSHER
			GMP & HACCP
HERBA INGREDIENTS	BELGIUM	SCHOTEN	ORGANIC CERTIFICATION
	BELGIUM	SCHOTEN	IFS
			KOSHER
			GMP
	BELGIUM	SCHOTEN	IFS
			KOSHER
			GMP
	NETHERLANDS	WORMER	ECOLOGICAL CERTIFICATION
			IFS
			GMP
			KOSHER
			HALAL
			ORGANIC CERTIFICATION
CHINESE ORGANIC			
NETHERLANDS	WORMER	IFS	
		GMP	
		ORGANIC CERTIFICATION	

COMPANY	COUNTRY	WORKPLACE	CERTIFICATION
HERBA RICEMILLS	SPAIN	CORIA DEL RÍO	IFS
			ISO 9001
			ECOLOGICAL CERTIFICATION
			KOSHER
		SAN JUAN DE AZNALFARACHE (Ready foods plant and Rice plant)	ISO 9001
			BRC
			IFS
			ECOLOGICAL CERTIFICATION
			KOSHER
		JEREZ DE LA FRONTERA (Ready foods plant)	ISO 9001
			BRC
		SILLA	IFS
			KOSHER
			ISO 9001
			BRC
		ALGEMESÍ (Ready foods plant)	IFS
			KOSHER
			ISO 9001
			IFS
		ALGEMESÍ (Rice plant)	BRC
			ISO 9001
			KOSHER
			IFS
LASSIE	NETHERLANDS	WORMER	KOSHER
			IFS
			ECOLOGICAL CERTIFICATION
			GMP
LA LOMA ALIMENTOS	ARGENTINA	LOS CHARRÚAS	HACCP
			GLUTEN FREE CERTIFICATION
		CHAJARÍ	KOSHER
			GLUTEN FREE CERTIFICATION
LUSTUCRU FRAIS	FRANCE	SAINT GENIS LAVAL (Fresh pasta plant)	IFS
		LORETTE (Planta de pasta fresca)	IFS
		COMMUNAY (Fresh pasta plant)	IFS

COMPANY	COUNTRY	WORKPLACE	CERTIFICATION
MUNDI RISO	ITALY	VERCELLI	IFS
			BRC
			ISO 22000
			ECOLOGICAL CERTIFICATION
MUNDI RIZ	MOROCCO	LARACHE	KOSHER
PANZANI	FRANCE	LA MONTRE	ISO 22000
			FSSC 22000
		GENNEVILLIERS	IFS
			IFS
			GMP+
			KOSHER
		NANTERRE	IFS
			FSSC 22000
		LITTORAL	GMP+
			HALAL
			IFS
		SAINT JUST	GMP+
			ECOLOGICAL CERTIFICATION
			IFS
		VITROLLES	SQF
			FSSC 22000
			KOSHER
			GLUTEN FREE CERTIFICATION
			ECOLOGICAL CERTIFICATION
		LYON	HALAL
			ECOLOGICAL CERTIFICATION

COMPANY	COUNTRY	WORKPLACE	CERTIFICATION
PASTIFICIO LUCIO GAROFALO	ITALY	GRAGNANO	BRC
			IFS
			KOSHER
			HALAL
			PASTA ORGÁNICA
			NO-GMO
RIVIANA FOOD (NEGOCIO ARROZ)	USA	MEMPHIS	IFS
			KOSHER
			SQF
		BRINKLEY	GLUTEN FREE CERTIFICATION
			SQF
			KOSHER
		CLEARBROOK	ECOLOGICAL CERTIFICATION
			KOSHER
		ALVIN	SQF
			KOSHER
			SQF
		CARLISLE	ECOLOGICAL CERTIFICATION
			KOSHER
RIVIANA FOOD (NEGOCIO PASTA)	USA	SAINT LOUIS	SQF
			KOSHER
			ECOLOGICAL CERTIFICATION
		WINCHESTER	SQF
			KOSHER
		FRESNO	SQF
ROLAND MONTERRAT	FRANCE	FEILLENS	KOSHER
S&B HERBA FOODS	UK	CAMBRIDGE	IFS
		LIVERPOOL	BRC
			KOSHER
TILDA	UK	RAINHAM (Classic Site (Mill & Packaging))	BRC
		RAINHAM (Jack Site (Doy-pack))	KOSHER
			BRC
TRANSIMPEX	GERMANY	LAMBSHEIM	IFS
			ORGANIC
			ORGANIC NATURLAND

Ebro Foods, S.A.

ANNEX 4



CALORIFIC POWER OF FUELS, EMISSION FACTORS AND WATER STRESS CLASSIFICATION

TABLE 1. NET CALORIFIC VALUE (NCV) OF FUELS

FUEL IN STATIONARY SOURCES	NCV	UNIT NCV	SOURCE NCV
Natural Gas	0.03822	GJ/m ³ N	National GHG Inventory of Spain (Annex 7), based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1)
Liquefied Petroleum Gas (LPG)	0.0473	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1)
Propane	0.0462	GJ/kg	Version 15, June 2020 of the EF document of the Ministry for Ecological Transition and Demographic Challenge (MITERD), based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1)
Liquefied Natural Gas (LNG)	0.0442	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1)
Butane	0.04478	GJ/kg	Version 15, June 2020 of the EF document of the MITERD, based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1)
Gasoline	0.0443	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1)
Diesel	0.043	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1)
Charcoal	0.0295	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1)
Biomass (wood chip)	0.0156	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 2)
Biomass (rice husk)	0.0116	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 2)

FUEL IN STATIONARY SOURCES	NCV	UNIT NCV	SOURCE NCV
Liquefied Natural Gas (LNG)	0.0442	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 3)
Liquefied Petroleum Gas (LPG)	0.0473	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 3)
Gasoline	0.0443	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 3)
Diesel	0.043	GJ/kg	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 3)

TABLE 2. EMISSION FACTORS OF FUELS AND ACTIVITIES

FUEL IN STATIONARY SOURCES	EF CO ₂ (KGCO ₂ /GJNCV)	EF CH ₄ (KGCH ₄ /GJNCV)	EF N ₂ O (KGN ₂ O/GJNCV)	UNIT EF	SOURCE NCV
Natural Gas	56.1	0.001	0.0001	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.2)
Liquefied Petroleum Gas (LPG)	63.1	0.001	0.0001	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.2)
Propane	63.6	0	0	kg CO ₂ /GJNCV	Version 15, June 2020 of the EF document of the MITERD, based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.2)
Liquefied Natural Gas (LNG)	64.2	0.003	0.0006	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.2)
Butane	66.2	0	0	kg CO ₂ /GJNCV	Version 15, June 2020 of the EF document of the MITERD, based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.2)
Gasoline	69.3	0.003	0.0006	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.2)
Diesel	74.1	0.003	0.0006	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.2)
Charcoal	0	0.2	0.004	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch. 1 & 2)
Biomass (wood chips)	0	0.03	0.004	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch. 1 & 2)
Biomass (rice husk)	0	0.03	0.004	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch. 1 & 2)

FUEL IN MOBILE SOURCES	EF CO ₂ (KGCO ₂ /GJNCV)	EF CH ₄ (KGCH ₄ /GJNCV)	EF N ₂ O (KGN ₂ O/GJNCV)	UNIT EF	SOURCE NCV
Liquefied Natural Gas (LNG)	56.1	0	0	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 3)
Liquefied Petroleum Gas (LPG)	63.1	0	0	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 3)
Gasoline	69.3	0	0	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 3)
Diesel	74.1	0	0	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch.1 & 3)

OTHER DATA ON ACTIVITY	EF CO ₂ (KGCO ₂ /GJNCV)	EF CH ₄ (KGCH ₄ /GJNCV)	EF N ₂ O (KGN ₂ O/GJNCV)	UNIT EF	SOURCE NCV
Rice crop	0	1.3	0	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.4, ch.5) IPCC for fields not flooded for less than 180 days prior to growth, permanently flooded during growth and without organic fertiliser
Elimination of N			0.005	kg CO ₂ /GJNCV	2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.5, ch.6)

TABLE 3. EMISSION FACTOR OF BIOGENIC CO₂

FUEL	EF	UNIT EF
Charcoal	112	kg CO ₂ e/GJ
Biomass (wood chips)	112	kg CO ₂ e/GJ
Biomass (rice husk)	100	kg CO ₂ e/GJ

Source: 2006 IPCC Guidelines for National Greenhouse Gas Inventories (vol.2, ch. 1 & 2)

TABLE 4. GLOBAL WARMING POTENTIAL OF GHG

GHG	GWP	SOURCE GWP
CO ₂	1	IPPC fourth assessment report
CH ₄	28	IPPC fourth assessment report
N ₂ O	265	IPPC fourth assessment report

TABLE 5. EMISSION FACTOR ELECTRICITY (BASED ON LOCATION)

COUNTRY	EF	UNIT EF	SOURCE EF
GERMANY	0.461	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
ARGENTINA	0.367	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
BELGIUM	0.22	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
CAMBODIA	0.804	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
CANADA	0.186	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
DENMARK	0.36	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
UAE	0.598	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
SPAIN	0.31	kgCO ₂ e/kWh	Emission Factors, Register of Carbon Footprints, Compensation and CO2 Absorption Projects. MITERD. June 2020, version 15
FRANCE	0.085	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME
HUNGARY	0.317	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
INDIA	0.912	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
ITALY	0.406	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
MOROCCO	0.718	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
NETHERLANDS	0.415	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
PORTUGAL	0.255	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
ROMANIA	0.499	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency

COUNTRY	EF	UNIT EF	SOURCE EF
THAILAND	0.513	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency
UK	0.2556	kgCO ₂ e/kWh	UK Government GHG Conversion Factors for Company Reporting. DEFRA 2019
USA	0.522	kgCO ₂ e/kWh	Centre de ressources sur les bilans de gaz a effet de serre. Base Carbone. ADEME. International Energy Agency

TABLE 6. EMISSION FACTORS OF COOLANTS

COOLANTS	EF
Carbon dioxide	1
Methane	28
Nitrous oxide	265
HFC-23	14800
HFC-32	675
HFC-41	92
HFC-125	3500
HFC-134	1100
HFC-134a	1430
HFC-143	353
HFC-143a	4470
HFC-152a	124
HFC-227ea	3220
HFC-236fa	9810
HFC-245fa	1030
HFC-43-10mee	1640
Perfluoromethane (PFC-14)	7390
Perfluoroethane (PFC-116)	12200
Perfluoropropane (PFC-218)	8830
Perfluorocyclobutane (PFC-318)	10300
Perfluorobutane (PFC-3-1-10)	8860
Perfluoropentane (PFC-4-1-12)	9160
Perfluorohexane (PFC-5-1-14)	9300
Sulphur hexafluoride (SF ₆)	22800
HFC-152	53
HFC-161	12
HFC-236cb	1340
HFC-236ea	1370
HFC-245ca	693
HFC-365mfc	794
R717 (ammonia)	0
R448A	1387
R410A	1890
HFC-1234ze (R1234ze)	7
R717 (ammonia)	0
R404A	3922

COOLANTS	EF
R407A	2107
R407C	1774
R407F	1825
R408A	3152
R410A	2088
R507A	3985
R508B	13396
R403A	3124
R407B	2804
R410B	2229
R413A	2053
R-417A	2346
R-417B	3026
R-422A	3143
R-422D	2729
R-424A	2440
R-426A	1508
R-427A	2138
R-428A	3607
R-434A	3245
R-437A	1805
R-438A	2264
R-442A	1888
R-449A	1396
R-452A	2140
R-453A	1765

Unit EF: kg CO₂e/kg coolant

Source: IPCC Fourth Assessment Report

TABLE 7. EMISSION FACTORS OF POLLUTANTS NOX, CO, SOX, COV, PM

GJ	STATIONARY COMBUSTION		
	NATURAL GAS+LNG+LPG+BUTANE+PROPANE	GASOLINE+DIESEL	RICE HUSK +WOOD CHIPS +CHARCOAL
POLLUTANT	FC (G/GJ)	FC (G/GJ)	FC (G/GJ)
NOx	74	513	91
CO	29	66	570
COV	23	25	300
SOx	0.67	47	11
PM10	0.78	20	143
PM2,5	0.78	20	140

	MOBILE COMBUSTION			
GJ	GASOLINE	DIESEL	LPG	LNG
POLLUTAN	FC (G/GJ)	FC (G/GJ)	FC (G/GJ)	FC (G/GJ)
CO	1,911.964	77.442	1,790.698	128.959
COV	226.862	16.279	288.372	5.882
NOX	197.065	301.395	321.353	294.118
PM	0.677	25.581		49.774

Source: European Environment Agency (EMEP)

<https://www.eea.europa.eu/publications/emep-eea-guidebook-2019/part-b-sectoral-guidance-chapters> [eea.europa.eu]

TABLE 8. WATER STRESS CLASSIFICATION (WORLD RESOURCES INSTITUTE)

COUNTRY	WATER STRESS CLASSIFICATION (WORLD RESOURCES INSTITUTE)
GERMANY	Medium-High
ARGENTINA	Low-Medium
BELGIUM	High
CAMBODIA	Low
CANADA	Low
DENMARK	Medium-High
UAE	Extremely High
SPAIN	High
FRANCE	Medium-High
HUNGARY	Low
INDIA	Extremely High
ITALY	High
MOROCCO	High
NETHERLANDS	Low-Medium
PORTUGAL	High
ROMANIA	Low-Medium
THAILAND	Medium-High
UK	Low-Medium
USA	Low-Medium