

RADICIGROUP SUSTAINABILITY REPORT

KEY ELEMENTS 2017

English



RADICIGROUP SUSTAINABILITY REPORT - KEY ELEMENTS

VISION, MISSION, VALUES AND APPLICATIONS OF RADICIGROUP PRODUCTS



VISION

To be one of the leading chemical groups in the polyamide, synthetic fibres and engineering plastics production chain.

MISSION

To promote the development of our businesses while pursuing our Group values and culture.

To pursue our vision by valorising and optimizing our resources, establishing strategic alliances and searching for new markets, including niche markets.

To embed sustainability into new product and application development.

VALUES

Putting people at the centre of everything we do, respecting their right to physical and cultural integrity.

Efficiency and effectiveness of our management systems to improve our business.

Fairness and transparency of our management systems to comply with all applicable laws and regulations.

Attention to the needs and expectations of our stakeholders in order to create a feeling of belonging and satisfaction.

Reliability of our management and operating systems to ensure the safety of our employees, our community and the environment.

Our responsibility as a company for our workers, production sites and communities.

APPLICATIONS



PRODUCTS FOR THE HOME SECTOR

Yarns for curtains, upholstery, carpets and wall-to-wall carpets. Engineering plastics for household appliances and the electrical/electronic sector.

Nonwovens for roofing, filtration, furnishings and disposable table tops.



PRODUCTS FOR APPAREL

Yarns for clothing, lingerie, beachwear and sportswear. Nonwovens for protective disposable clothing.



PRODUCTS FOR THE AUTOMOTIVE SECTOR

Engineering plastics for car interiors and engine components. Yarns for car interiors and airbags.

Nonwovens for headliners, seatings and airbag covers.



PRODUCTS FOR THE INDUSTRIAL SECTOR

Yarns and engineering plastics for special applications in the industrial sector.



PRODUCTS FOR THE SPORTS SECTOR

Yarns for sportswear.

Yarns for sports fields, recreational and domestic indoor and outdoor applications.

SUSTAINABLE ENVIRONMENTAL DEVELOPMENT

Working in the light of ecodesign and circular economy
R&D for limited-impact products
Measuring and mitigation of environmental impacts
Research and development on recycling and recyclability
Integrated certification and management systems



SUSTAINABLE ECONOMIC DEVELOPMENT

Strategies for creating a shared value
Redistribution of value in relation to resources used
Investments to maintain the companies' competitiveness

SUSTAINABLE SOCIAL DEVELOPMENT

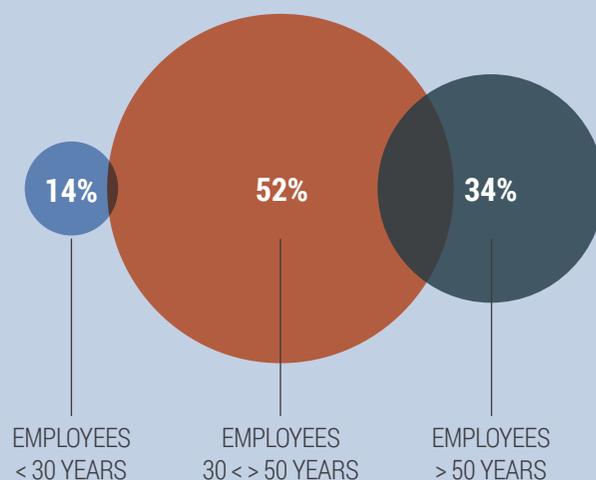
Attention to Workers' health and safety
Cooperation with Customers and Suppliers for a sustainable production chain
Attention to territories, schools and local communities
Permanent training of personnel

EMPLOYEES BY GEOGRAPHICAL AREA – 2017



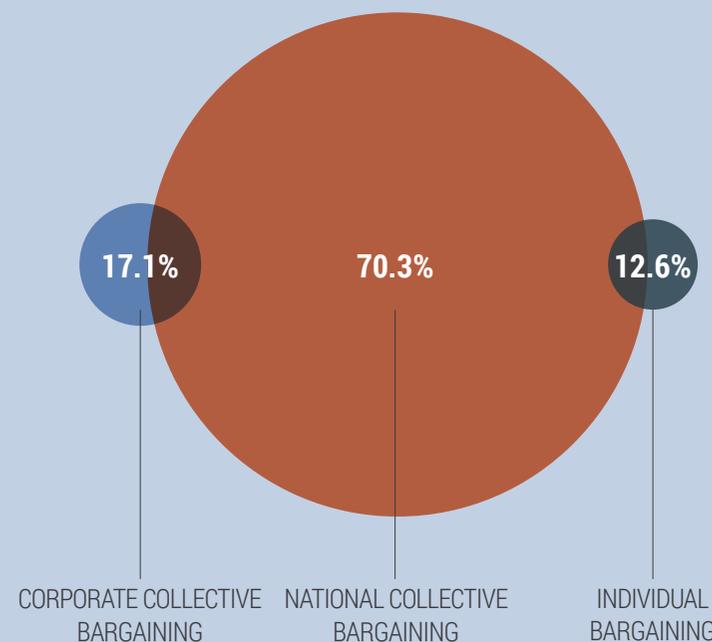
A GROUP GETTING MORE AND MORE INTERNATIONAL

EMPLOYEE BREAKDOWN BY AGE GROUP – 2017



PERCENTAGE OF EMPLOYEES COVERED BY COLLECTIVE BARGAINING AGREEMENTS

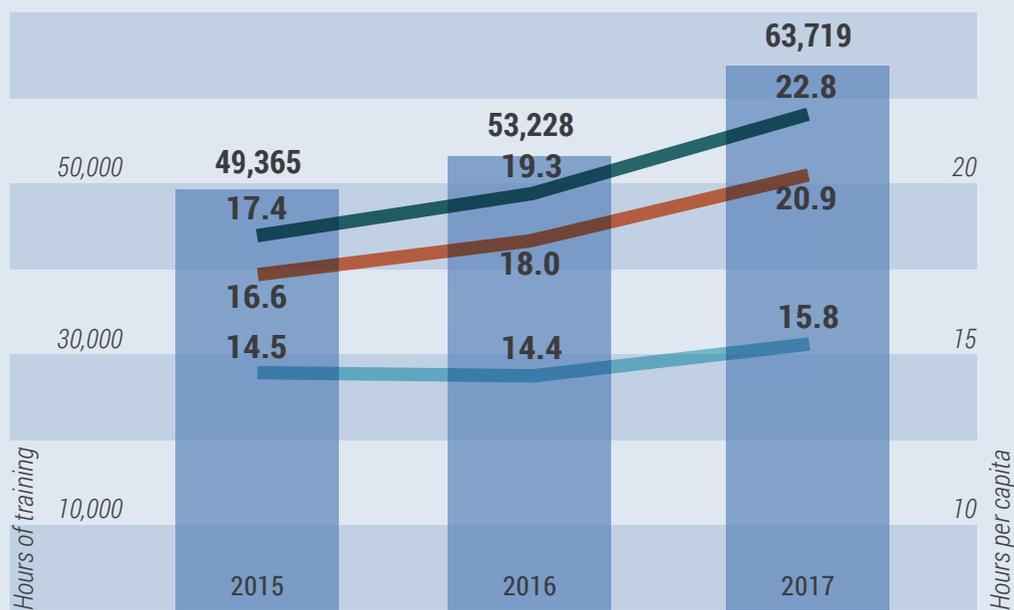
	2015	2016	2017
n National collective bargaining	2,229	2,121	2,146
n Corporate collective bargaining	124	504	521
n Individual bargaining	614	339	386
n Total Employees	2,967	2,964	3,053
% Individual bargaining percentage	20.7	11.4	12.6
% Collective bargaining percentage	79.3	88.6	87.4



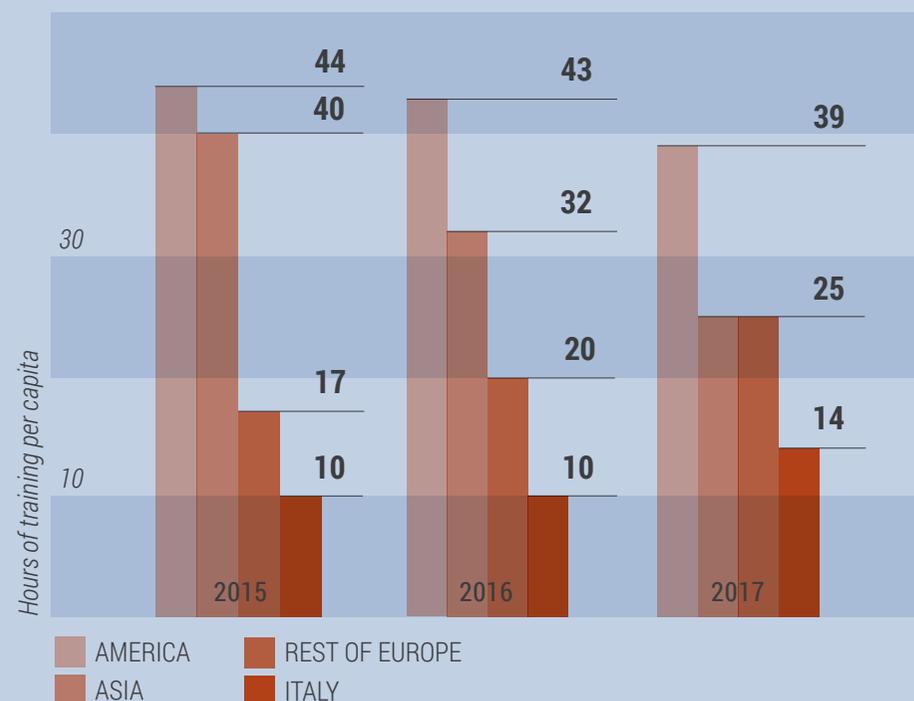
TRAINING FOR EMPLOYEES

		2015	2016	2017
hours	Total hours of training	49,366	53,228	63,719
hours	Management	2,318	2,855	1,858
hours	Middle management	2,421	4,523	4,529
hours	White collars	7,704	9,013	13,877
hours	Blue collars	36,923	36,837	43,455
n	Total Employees	2,967	2,964	3,053

HOURS OF TRAINING 2015-2017



HOURS OF TRAINING PER CAPITA BY GEOGRAPHICAL AREA 2015-2017



PERMANENT TRAINING:

+26% HOURS OF TRAINING PER CAPITA OVER THE LAST 3 YEARS

■ OVERALL HOURS OF TRAINING ■ HOURS OF TRAINING - MEN
■ HOURS OF TRAINING PER CAPITA ■ HOURS OF TRAINING - WOMEN

SAFETY IS CARE FOR WHAT WE ARE DOING AND HOW WE DO IT WITH RESPECT TO OURSELVES FIRST OF ALL, RESPECT FOR THOSE WHO WORK WITH US AND WITH RESPECT TO THE PLACES AND INSTRUMENTS THROUGH WHICH THE WORK GETS DONE.

SAFETY IS THE AWARENESS OF THE RESPONSIBILITIES AND EVEN MORE OF THE CONTRIBUTION THAT EACH PERSON IS CALLED TO PROVIDE TO MAKE THE WORKING ENVIRONMENT HEALTHY AND FREE FROM DANGERS AS FAR AS POSSIBLE.

ANGELO RADICI



8,800

HOURS OF TRAINING

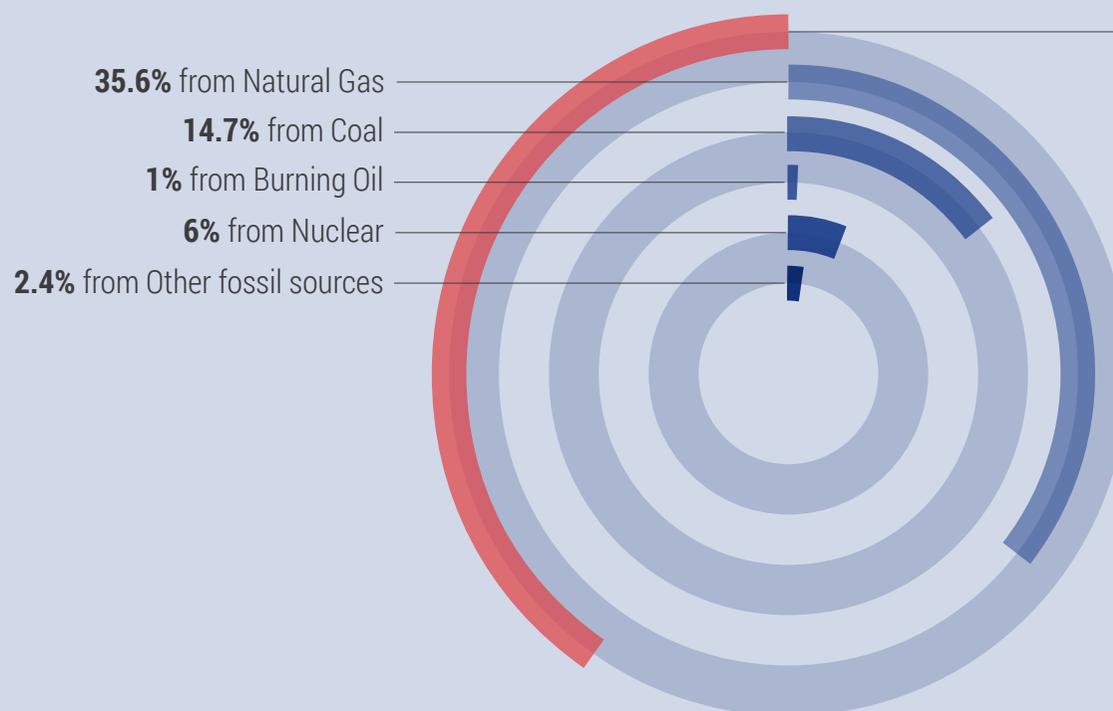
-18%

INJURIES IN THE 2015 – 2017 PERIOD

EMPLOYEE SAFETY AT WORK

		MEN			WOMEN			TOTAL		
		2015	2016	2017	2015	2016	2017	2015	2016	2017
hours	Total hours worked	3,642,831	3,626,974	3,719,776	1,244,084	1,281,230	1,290,606	4,886,914	4,908,203	5,010,382
days	Total days lost	2,672	1,637	1,296	376	305	68	3,048	1,942	1,364
n	Total number of accidents	70	66	61	12	15	5	82	81	66
n	Total number of occupational diseases	5	3	5	0	0	1	5	3	6
days	Average days of absence	10	9	8	10	9	11	10	9	9
days	Average working days	223	216	214	214	215	209	220	216	213
n/200,000h	IR (Injury Rate)	3.8	3.6	3.3	1.9	2.3	0.8	3.4	3.3	2.6
n/200,000h	ODR (Occupational Disease Rate)	0.27	0.17	0.27	0.00	0.00	0.00	0.20	0.12	0.24
d/200,000h	LDR (Lost Day Rate)	146.7	90.3	69.7	60.4	47.6	10.5	124.7	79.1	54.4
d/200,000h	AR (Absentee Rate)	8,791	8,510	7,728	9,812	8,710	10,059	9,061	8,564	8,347
n	Total Employees updated to 31/12	2,156	2,165	2,227	811	799	826	2,967	2,964	3,053
%	Absence	4.4%	4.3%	3.9%	4.9%	4.4%	5.0%	4.5%	4.3%	4.2%

ELECTRICAL ENERGY MIX – 2017



40.3%

OF ELECTRICAL ENERGY MIX
FORM RENEWABLE SOURCES

of which sites wholly or largely supplied with energy from renewable sources:

- Radici Novacips – Villa d'Ogna, Italy
- Radici Novacips – Chignolo, Italy
- Radici Plastics – Brazil
- Radici Plastics – Germany
- Radici Yarn – Ardesio, Italy
- Radici Partecipazioni – Italy

powered with green energy at over 80%

- Radici Fibras – Brazil

powered with green energy at over 70%

- Radici Yarn – Italy

powered with green energy at 100%

- Polymerization at Radici Yarn – Italy
- Polymerization at Radici Fil – Italy

RADICIGROUP SUSTAINABILITY REPORT - KEY ELEMENTS

RADICIGROUP'S ENVIRONMENTAL PERFORMANCE



TOTAL PRIMARY ENERGY CONSUMPTION FROM NON RENEWABLE SOURCES IN RELATION TO THE QUANTITIES PROCESSED

	2015	2016	2017
GJ/t Total primary energy (direct + indirect) from fossil source	6.43	6.24	6.19
GJ/t Total indirect primary energy	4.48	4.41	4.45
GJ/t Indirect primary energy - Electricity	1.72	1.72	1.98
GJ/t Indirect primary energy - Steam	2.76	2.69	2.47
GJ/t Indirect primary energy - Heating	0.00	0.00	0.00
GJ/t Indirect primary energy - Cooling	0.00	0.00	0.00

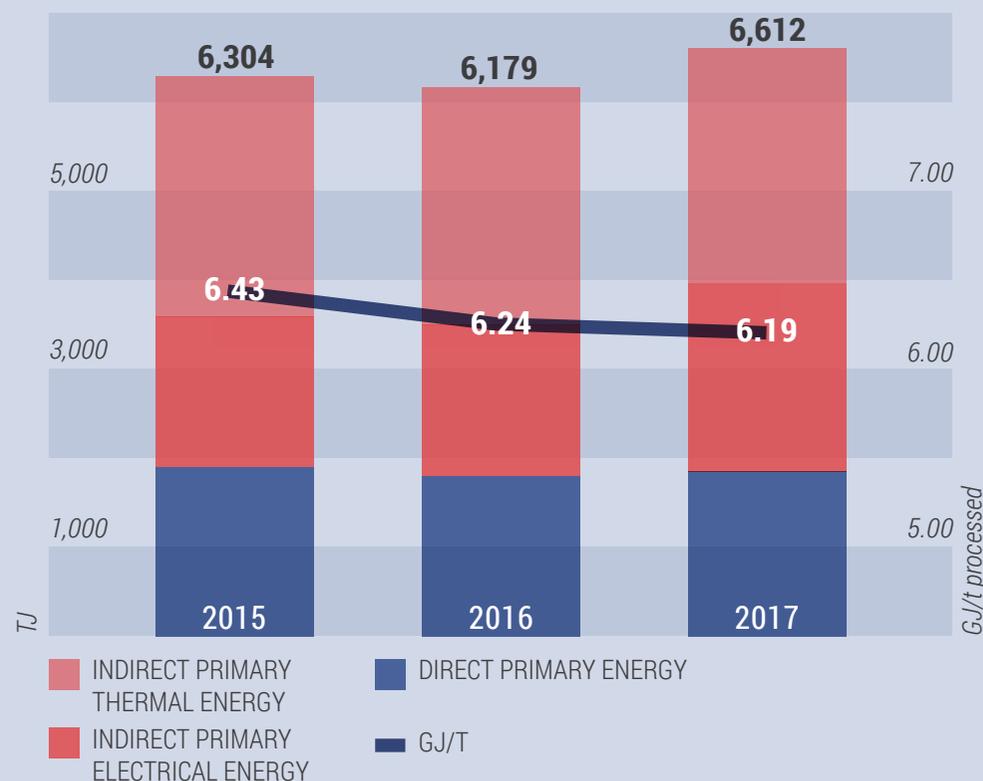
-22%

CONSUMPTION OF FOSSIL FUELS IN RELATION TO THE QUANTITIES PROCESSED OVER THE LAST 6 YEARS

99%

OF FOSSIL FUEL IS NATURAL GAS

GLOBAL IMPACT ON PRIMARY ENERGY 2015-2017



TOTAL DIRECT AND INDIRECT EMISSIONS OF GREENHOUSE GAS

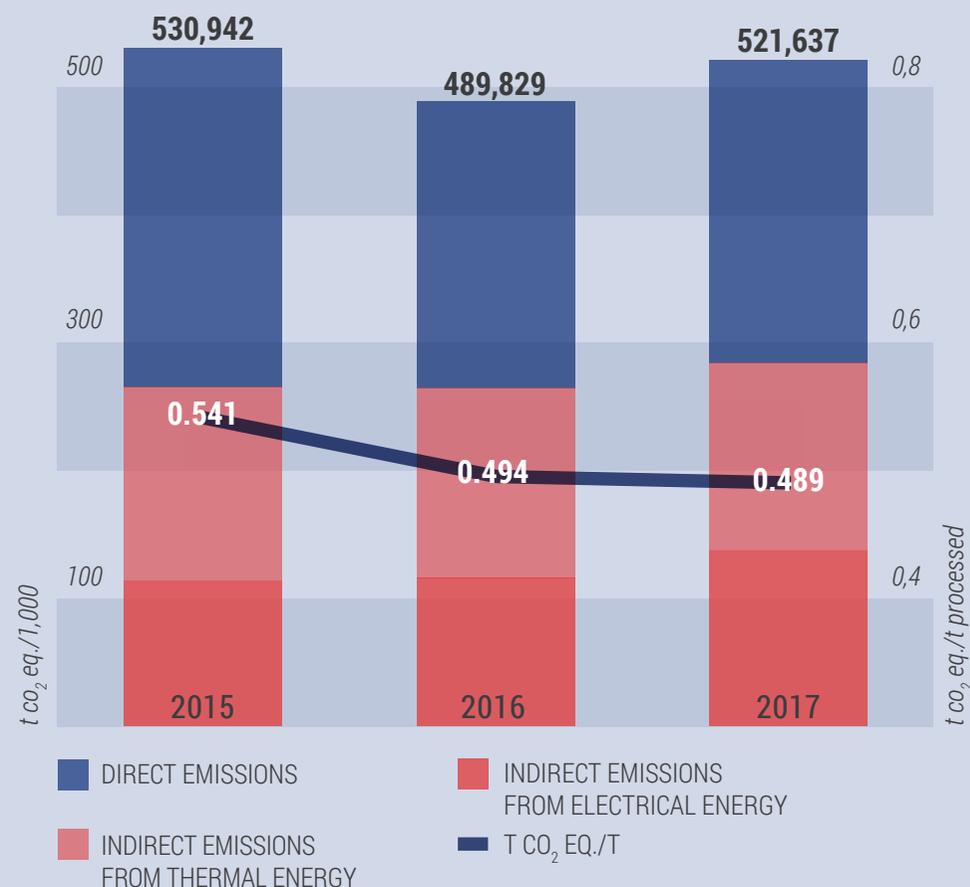
	2015	2016	2017
t CO ₂ eq. Indirect emissions from ELECTRICAL ENERGY	114,750	116,644	137,956
t CO ₂ eq. Indirect emissions from STEAM ENERGY	150,861	148,701	146,872
t CO ₂ eq. Indirect emissions from HEATING	-	-	-
t CO ₂ eq. Indirect emissions from COOLING	-	-	-
t CO₂ eq. INDIRECT EMISSIONS (GRI 305-2)	265,611	265,345	284,828
t CO₂ eq. DIRECT EMISSIONS (GRI 305-1)*	265,331	224,484	236,809
t CO₂ eq. TOTAL	530,942	489,829	521,637

*The values quoted include the CO₂ produced by combustion and the N₂O resulting from the production of adipic acid and nitric acid.

INDEX - TOTAL DIRECT AND INDIRECT EMISSIONS OF GREENHOUSE GAS IN RELATION TO QUANTITIES PROCESSED

	2015	2016	2017
t CO ₂ eq./t	0.541	0.494	0.489

-42.5% TOTAL EMISSIONS IN RELATION TO THE QUANTITIES PROCESSED OVER THE LAST 6 YEARS

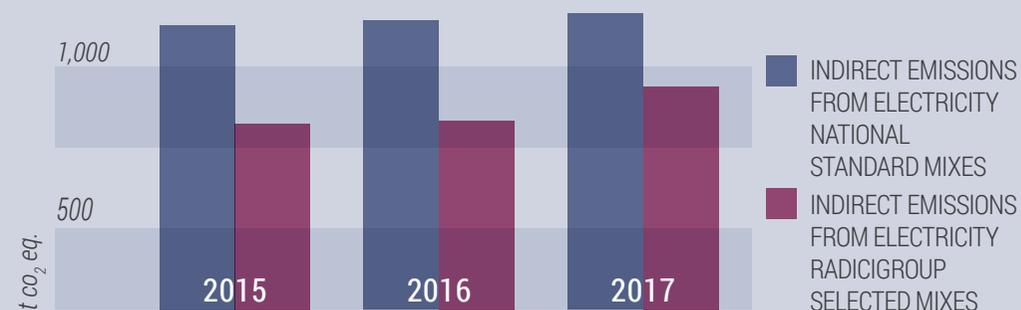


RADICIGROUP SUSTAINABILITY REPORT - KEY ELEMENTS

NATIONAL STANDARD BENCHMARK MIX AND RADICIGROUP MIX (ELECTRICITY)



		2015	2016	2017
t CO ₂ eq.	Indirect emissions from ELECTRICITY NATIONAL STANDARD MIXES	175,703	178,411	182,703
t CO ₂ eq.	Indirect emissions from ELECTRICITY RADICIGROUP SELECTED MIXES	114,750	116,644	137,956
t CO ₂ eq.	Difference	60,953	61,766	44,747
%	Difference	34.7%	34.6%	24.5%

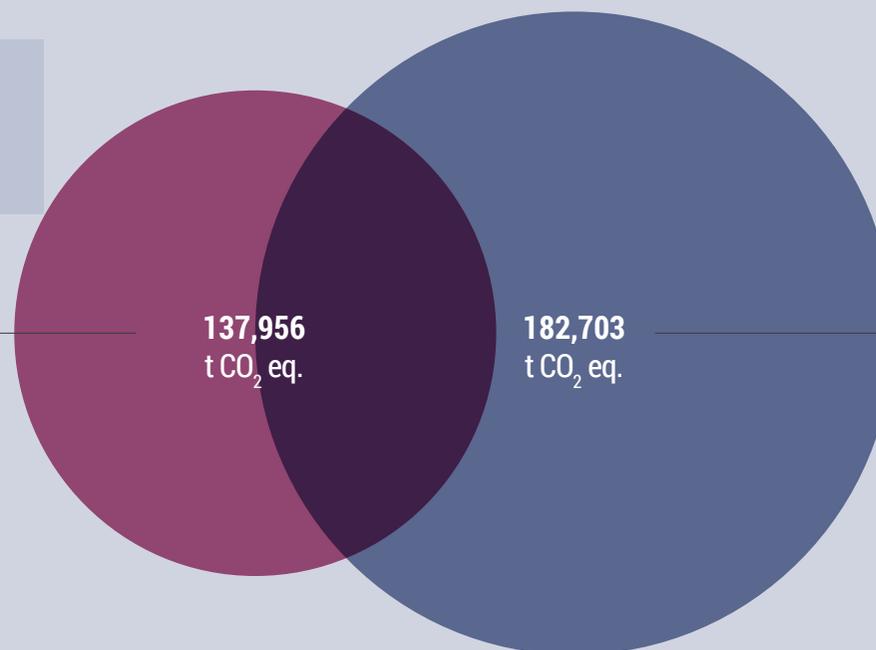


NATIONAL STANDARD BENCHMARK MIX AND RADICIGROUP MIX - 2017

-24.5%

EMISSIONS THANKS TO RADICIGROUP SELECTED MIX

INDIRECT EMISSIONS FROM ELECTRICITY RADICIGROUP SELECTED MIXES



INDIRECT EMISSIONS FROM ELECTRICITY NATIONAL STANDARD MIXES

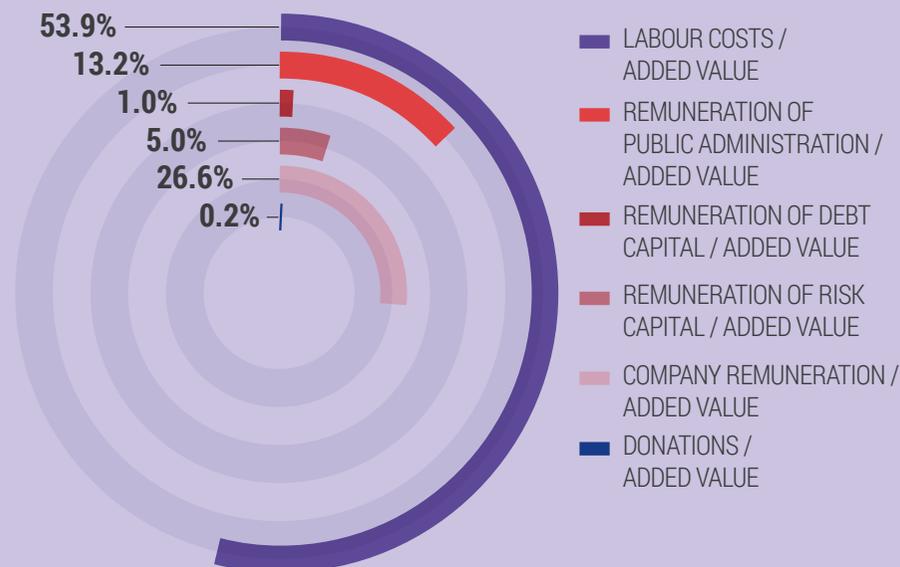
STANDARD STATEMENT OF ADDED VALUE ASSESMENT

ITEMS	31/12/2015	31/12/2016	31/12/2017
A) PRODUCTION VALUE	993,769,060	946,065,498	1,164,318,842
1 Revenue from sales and services	1,011,118,534	945,147,279	1,146,294,145
2 Changes in inventories of work in progress, semi-processed and finished products	(17,534,599)	690,516	17,814,922
3 Custom change in work in progress	-	-	-
4 Increase in capital assets for internal work	185,125	227,703	209,775
5 Other operating income			
B) INTERIM MANAGEMENT COST	770,772,971	704,765,147	867,422,758
6 Costs for the purchase of raw and subsidiary materials, consumables and goods	576,061,208	531,064,736	691,480,119
7 Costs for services	179,927,810	171,424,093	175,835,802
8 Costs for use of third party assets	5,117,266	3,986,722	5,401,205
9 Change in inventories of raw subsidiary materials, consumables and goods	769,270	(4,316,132)	(7,591,811)
10 Provisions for risks	300,567	163,374	361,174
11 Other provisions	299,199	845,395	76,341
12 Other operating expenses	8,297,650	1,596,959	1,859,929
GROSS ADDED VALUE (A-B)	222,996,089	241,300,351	296,896,084
+/- Accessory and extraordinary components	523,339	4,431,631	3,755,696
TOTAL GROSS VALUE ADDED	223,519,428	245,731,982	300,651,781
- Depreciation	40,034,852	38,805,292	41,791,493
TOTAL NET VALUE ADDED	183,484,576	206,926,689	258,860,287

ADDED VALUE SHARED WITH STAKEHOLDERS, IN PARTICULAR WITH EMPLOYEES

ADDED VALUE DISTRIBUTION

LABOUR COSTS / ADDED VALUE	53.90%
REMUNERATION OF PUBLIC ADMINISTRATION / ADDED VALUE	13.20%
REMUNERATION OF DEBT CAPITAL / ADDED VALUE	1.04%
REMUNERATION OF RISK CAPITAL / ADDED VALUE	5.02%
COMPANY REMUNERATION / ADDED VALUE	26.60%
DONATIONS / ADDED VALUE	0.24%



RADICIGROUP SUSTAINABILITY REPORT - KEY ELEMENTS

USE OF RESOURCES IN RELATION TO ADDED VALUE



TOTAL PRIMARY ENERGY COMPARED TO THE TOTAL NET ADDED VALUE

		2015	2016	2017
GJ	Total primary energy (GRI302-1)	6,304,184	6,178,598	6,611,640
€	Total net added value	183,484,576	206,279,587	258,860,287
GJ/ €	Total primary energy (direct + indirect) compared to the total net added value	0.034	0.030	0.026

TOTAL EMISSIONS COMPARED TO THE ADDED VALUE

		2015	2016	2017
tCO ₂ eq.	Total emissions into the atmosphere (GRI 305-1 and 305-2)	530,942	489,829	521,637
€	Total net added value	183,484,576	206,279,587	258,860,287
kgCO ₂ eq./€	Total emissions into the atmosphere (GRI 305-1 and 305-2) compared to the total net added value	2.89	2.37	2.02

WATER RESOURCES COMPARED TO THE ADDED VALUE

		2015	2016	2017
m ³ / €	Water resources (GRI 303-1) compared to the total net added value	0.48	0.43	0.35

WASTE SUBJECT TO DISPOSAL WITHOUT RECOVERY COMPARED TO THE ADDED VALUE

		2015	2016	2017
kg/ €	Waste subject to disposal without recovery (GRI 306-2) compared to the total net added value	0.021	0.020	0.021

PRODUCTION GROWS

ADDED VALUE GROWS

THE USE OF NATURAL RESOURCES DECREASES

RADICIGROUP SUSTAINABILITY REPORT - KEY ELEMENTS

OUR LIMITED ENVIRONMENTAL IMPACT PRODUCTS



WHEN SUSTAINABILITY TURNS INTO PRODUCTS

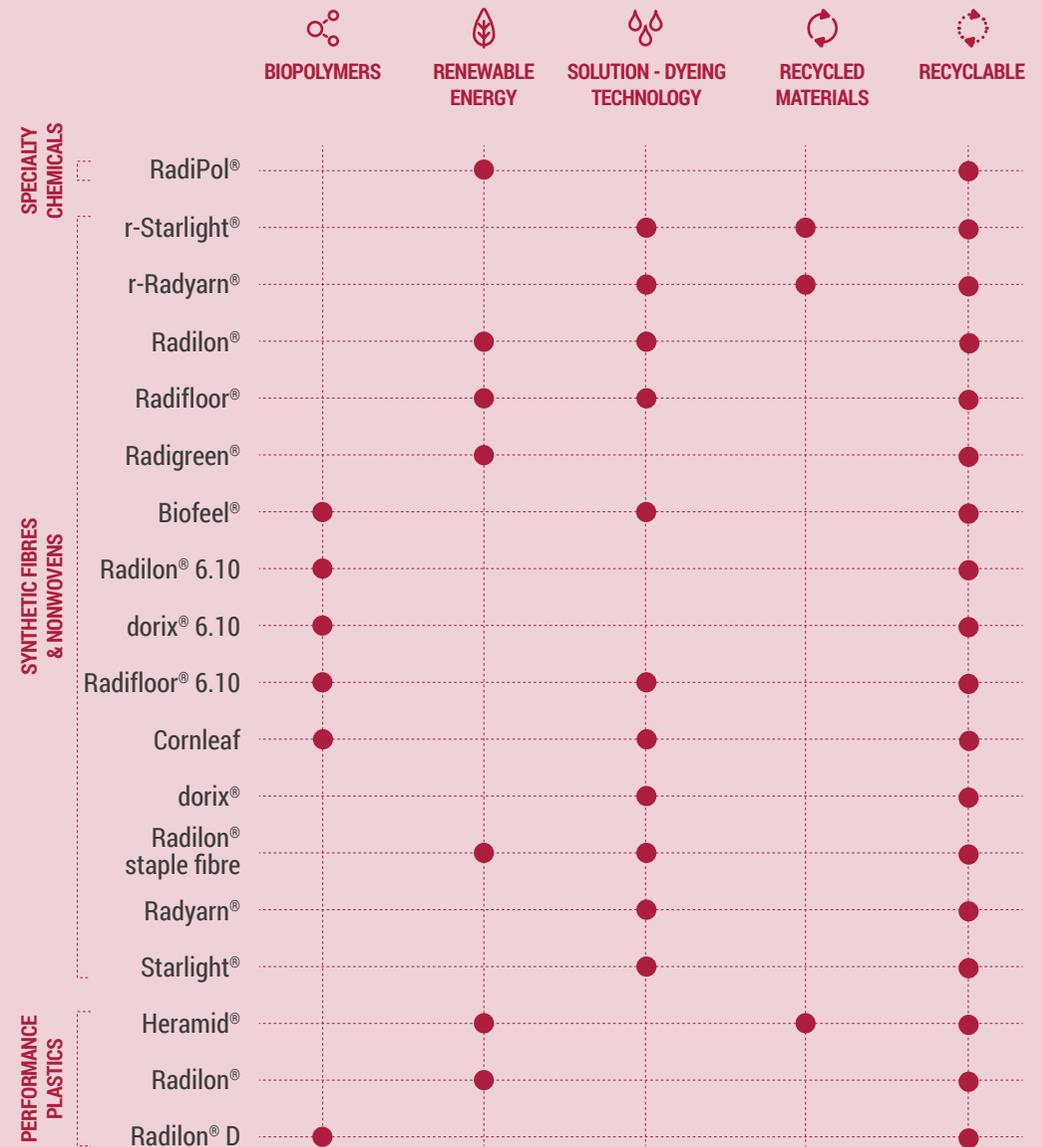
Products manufactured using recycled raw materials: such materials, in the light of circular economy, find a second life after a mechanical recycling process and turn into high performance polymers.
Heramid®: PA6 and PA6.6 engineering plastics
r-Starlight®: polyester textile yarn
r-Radyarn®: polyester textile yarn

Products manufactured using clean energy, mainly hydroelectric power.
Radipol®: PA6, PA6.6 e PA6.10 polymers
Radilon®: PA6 e PA6.6 engineering plastics
Heramid®: PA6 and PA6.6 engineering plastics
Radifloor®: PA6 and PA6.6 BCF yarn
Radigreen®: PA artificial grass yarn
Radilon® staple fibre: PA6 staple
Radilon®: PA6 and PA6.6 textile yarn

Products manufactured using biopolymers obtained from renewable source materials not in competition with vegetable food cultivations.
Radilon® D: PA6.10-based engineering plastics
Radilon® 6.10: PA6.10-based textile yarns
dorix® 6.10: PA6.10-based staple fibre
Biofeel®: bio-based textile yarns
Radifloor® 6.10: bio-based BCF yarn
CornLeaf: Ingeo™ polylactic acid (PLA) yarn

Solution-dyed products, saving water and energy thanks to dyeing pigments added directly during the polymer extrusion phase.
Radifloor®: PA6 BCF yarn
Radifloor® 6.10: bio-based BCF yarn
dorix®: PA6 staple
Radilon® staple fibre: PA6 staple
Radilon®: PA6 and PA6.6 textile yarn
Radyarn®/Starlight®: polyester textile yarn
r-Radyarn®/r-Starlight®: recycled polyester textile yarn
Biofeel®: bio-based textile yarns
CornLeaf: Ingeo™ polylactic acid (PLA) yarn

Recyclable products which, in a circular economy perspective, can be used as secondary raw materials after a recycling process.
 All products



RADICIGROUP SUSTAINABILITY REPORT - KEY ELEMENTS

LCA - MEASURING THE IMPACTS OF OUR PRODUCTS

