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# RADICIGROUP SUSTAINABILITY REPORT

## KEY ELEMENTS 2016

### English



### 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**

- Measuring and mitigation of environmental impacts
- Research and development on recycling and recyclability
- Integrated certification and management systems



### **Sustainable economic development**

- Strategies for value creation
- Redistribution of value in relation to resources used
- Investments to maintain the companies' competitiveness

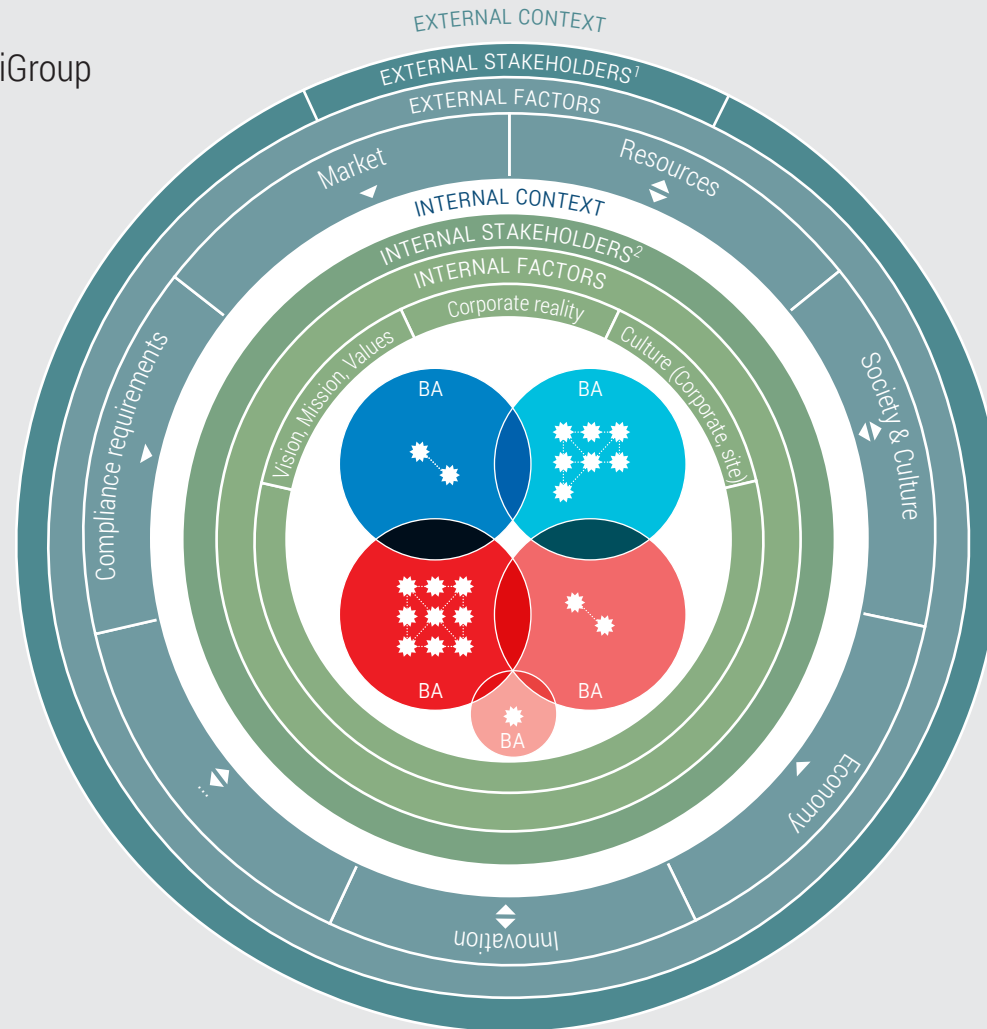
### **Sustainable social development**

- Attention to workers' health and safety
- Work with customers and suppliers for a sustainable production chain
- Attention to local territories and communities

# RadiciGroup Sustainability Report - Key elements

## The RadiciGroup context

From the external context to the internal context of RadiciGroup



- Business Area:
- Specialty Chemicals
  - Performance Plastics
  - Comfort Fibres
  - Extrusion Yarn
  - Performance Yarn
  - ★ Production site

- <sup>1</sup>EXTERNAL STAKEHOLDER:
- Environment
  - Category associations
  - Customers
  - Competitors
  - Local communities
  - Community
  - Suppliers
  - Banking Institutions
  - Media
  - Control Bodies
  - Trade Unions
  - Schools and the academic world

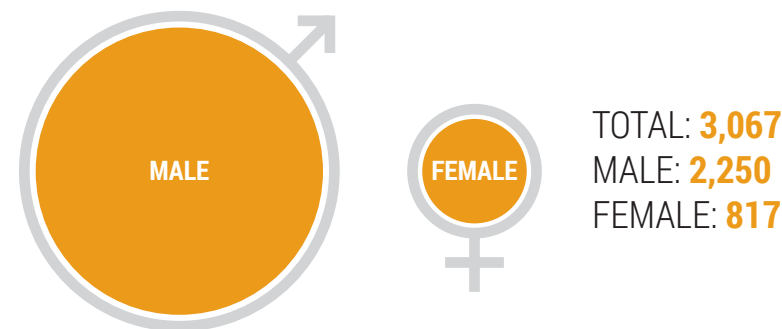
- <sup>2</sup>INTERNAL STAKEHOLDER:
- Shareholders
  - Employees
  - RadiciGroup companies

### WORKFORCE BY GEOGRAPHICAL AREA\*

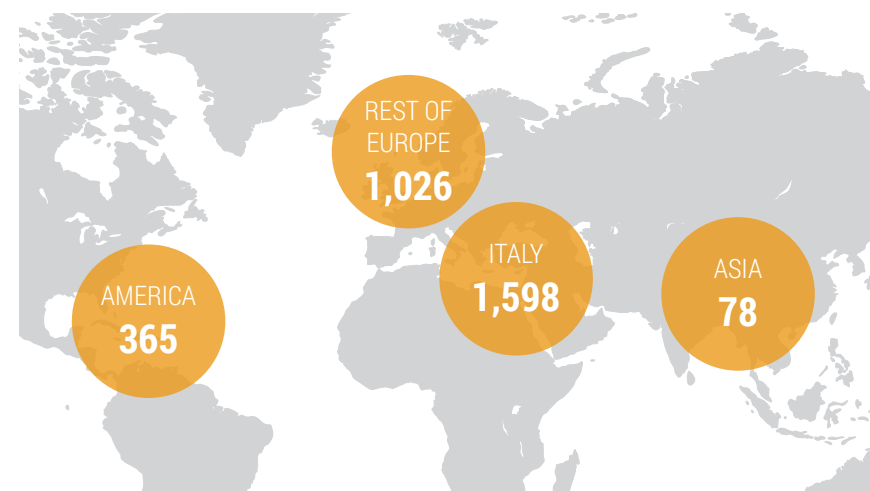
			2011	2012	2013	2014	2015	2016
<i>n</i>	<b>Total Workforce</b>	<i>Tot</i>	3,364	3,269	3,210	3,047	3,016	3,067
<i>n</i>		<i>M</i>	2,561	2,483	2,404	2,238	2,198	2,250
<i>n</i>		<i>F</i>	803	786	806	809	818	817
<i>n</i>	<b>Italy</b>	<i>Tot</i>	1,716	1,680	1,601	1,599	1,587	1,598
<i>n</i>		<i>M</i>	1,412	1,373	1,301	1,296	1,287	1,297
<i>n</i>		<i>F</i>	304	307	300	303	300	301
<i>n</i>	<b>Rest of Europe</b>	<i>Tot</i>	1,030	980	1,003	1,007	1,029	1,026
<i>n</i>		<i>M</i>	639	602	610	597	596	597
<i>n</i>		<i>F</i>	391	378	393	410	433	429
<i>n</i>	<b>Asia</b>	<i>Tot</i>	26	30	36	42	57	78
<i>n</i>		<i>M</i>	20	24	27	29	44	60
<i>n</i>		<i>F</i>	6	6	9	13	13	18
<i>n</i>	<b>America</b>	<i>Tot</i>	592	579	570	399	343	365
<i>n</i>		<i>M</i>	490	484	466	316	271	296
<i>n</i>		<i>F</i>	102	95	104	83	72	69

\*Workforce includes temporary workers and full-time employees

### TOTAL WORKFORCE BY GENDER - 2016



### WORKFORCE BY GEOGRAPHICAL AREA - 2016

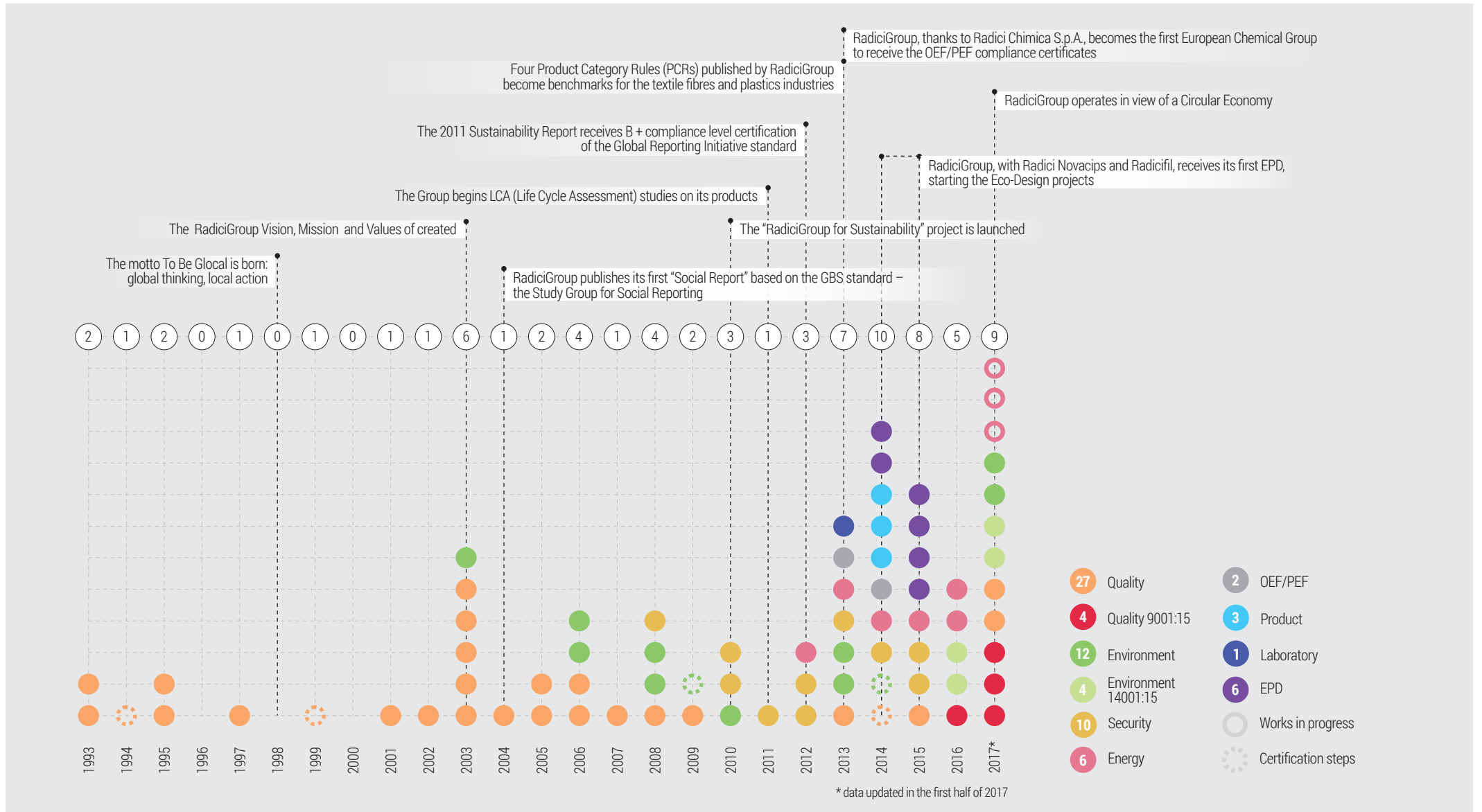


# RadiciGroup Sustainability Report - Key elements

## The RadiciGroup certification pathway



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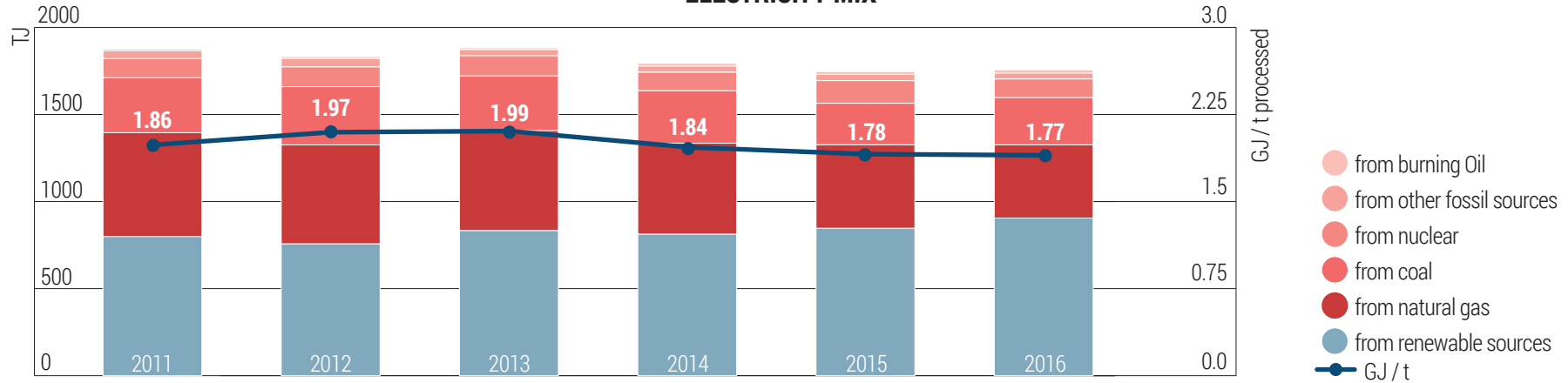


# RadiciGroup Sustainability Report - Key elements

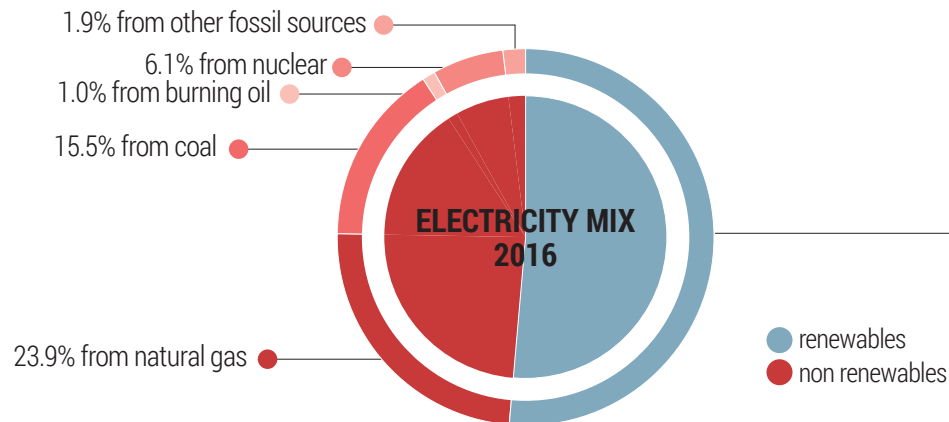
## RadiciGroup's environmental performance



**INDICATOR GRI G4-EN3  
ELECTRICITY MIX**



		2011	2012	2013	2014	2015	2016
GJ	NON RENEWABLE	1,075,788	1,074,765	1,048,962	980,328	899,291	850,798
GJ	RENEWABLE	799,476	757,615	833,840	813,088	846,895	905,390



**51.6%**

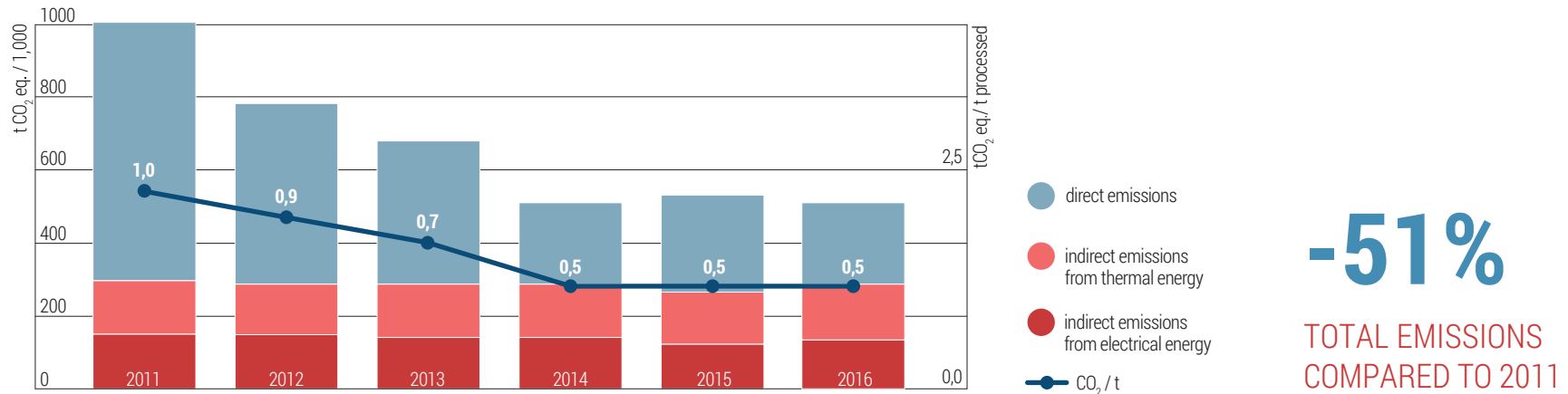
OF ELECTRICAL ENERGY MIX FROM RENEWABLE SOURCES

of which **companies with 100% renewable energy:**

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

### INDICATOR GRI G4-EN15 and EN16

#### TOTAL DIRECT AND INDIRECT GREENHOUSE GAS EMISSIONS



		2011	2012	2013	2014	2015	2016
t CO <sub>2</sub> eq.	DIRECT EMISSIONS (G4-EN15)	711,432	501,336	390,662	218,699	265,353	224,455
t CO <sub>2</sub> eq.	INDIRECT EMISSIONS (G4-EN16)	298,604	289,921	286,685	289,014	265,608	265,328

#### INDEX – TOTAL DIRECT AND INDIRECT GREENHOUSE GAS EMISSIONS IN RELATION TO QUANTITY USED

	2011	2012	2013	2014	2015	2016	Δ 3 YEARS	Δ 6 YEARS
t CO <sub>2</sub> eq.	1.00	0.85	0.71	0.52	0.54	0.49	- 5%	- 51%

### INDICATOR GRI G4-EN21

#### QUALITY OF EMISSIONS

		2011	2012	2013	2014	2015	2016	Δ 3 YEARS
t	TOTAL*	527	502	459	240	181	167	- 30.4%

\*The substances are: NO<sub>x</sub>, SO<sub>x</sub>, POP, VOC, HAP, PM, Other emissions (carbon monoxide)

#### TOTAL HAZARDOUS SUBSTANCES

**-30% in 3 years      -68% in 6 years**



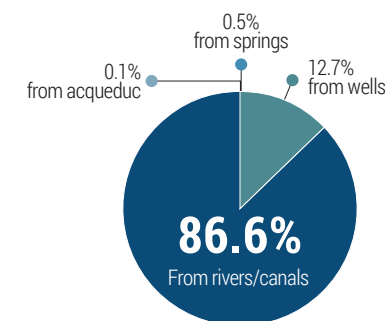
# RadiciGroup Sustainability Report - Key elements

## RadiciGroup's environmental performance



### INDICATOR GRI G4-EN8 WATER RESOURCES

		2011	2012	2013	2014	2015	2016
<b>m<sup>3</sup></b>	<b>TOTAL</b>	<b>91,390,819</b>	<b>85,381,653</b>	<b>86,446,525</b>	<b>90,738,824</b>	<b>88,076,698</b>	<b>88,216,173</b>
<b>m<sup>3</sup></b>	from aqueduct	155,879	133,188	124,258	116,177	121,449	125,401
<b>m<sup>3</sup></b>	from springs	415,271	338,693	354,433	339,886	402,969	445,842
<b>m<sup>3</sup></b>	from wells	11,284,044	12,407,583	12,499,407	11,982,837	11,380,769	11,213,152
<b>m<sup>3</sup></b>	from rivers/canals	79,535,625	72,502,189	73,468,427	78,299,924	76,171,511	76,431,778



### INDEX – WATER USAGE IN RELATION TO QUANTITY PROCESSED

	2011	2012	2013	2014	2015	2016	Δ 3 YEARS
<b>m<sup>3</sup>/t</b>	90.82	91.64	91.06	92.91	88.77	89.03	<b>-4.2%</b>

**-4.2%**  
FOR t PROCESSED  
COMPARED TO  
2014

### INDICATOR GRI G4-EN10 WATER SAVING

		2011	2012	2013	2014	2015	2016
<b>m<sup>3</sup></b>	Water withdrawn	91,390,819	85,381,653	86,446,525	90,738,824	88,076,698	88,216,173
<b>m<sup>3</sup></b>	Water recovered	72,326,000	77,360,437	74,004,952	56,739,347	56,000,052	59,069,440
<b>%</b>	<b>Water saved</b>	<b>79%</b>	<b>91%</b>	<b>86%</b>	<b>63%</b>	<b>64%</b>	<b>67%</b>



### MADE USING BIOPOLYMERS MADE FROM RENEWABLE RAW MATERIALS

**Radilon® D:** PA6.10 engineering plastics  
**Radilon® 6.10:** PA6.10 textile yarn  
**dorix® 6.10:** PA6.10 staple fibre  
**Radilon® PX:** engineering plastics  
**Biofeel:** bio-based textile yarns  
**dorix®:** bio-based staple fibre  
**Radifloor® PX:** bio-based BCF yarns  
**CornLeaf:** yarn from polylactic acid-based (PLA) polymer Ingeo™

### MADE USING RENEWABLE ENERGY SOURCES

**Radipol®:** PA6, PA6.6 and PA6.10 polymer  
**Radilon®:** PA6 and PA6.6 engineering plastics  
**Heramid®:** PA6 and PA6.6 engineering plastics  
**Radifloor®:** PA6 and PA6.6 BCF yarns  
**Radigreen®:** PA artificial grass yarn  
**Radilon® staple fibre®:** PA6 staple fibre  
**Radilon®:** PA6 and PA6.6 textile yarn



### MADE USING RECYCLED RAW MATERIALS

**Heramid®:** PA6 and PA6.6 engineering plastics  
**r-Starlight®:** polyester textile yarn  
**r-Radyarn®:** polyester textile yarn

### COLOURED USING MASS DYEING TECHNOLOGY, SAVING ENERGY AND WATER

**Radifloor®:** PA6 BCF yarns  
**dorix®:** PA6 staple fibre  
**Radilon® staple fibre:** PA6 staple fibre  
**Radilon®:** PA6 and PA6.6 textile yarn  
**Radyarn®/Starlight®:** polyester textile yarn  
**r-Radyarn®/r-Starlight®:** polyester textile yarn made from recycled polymers



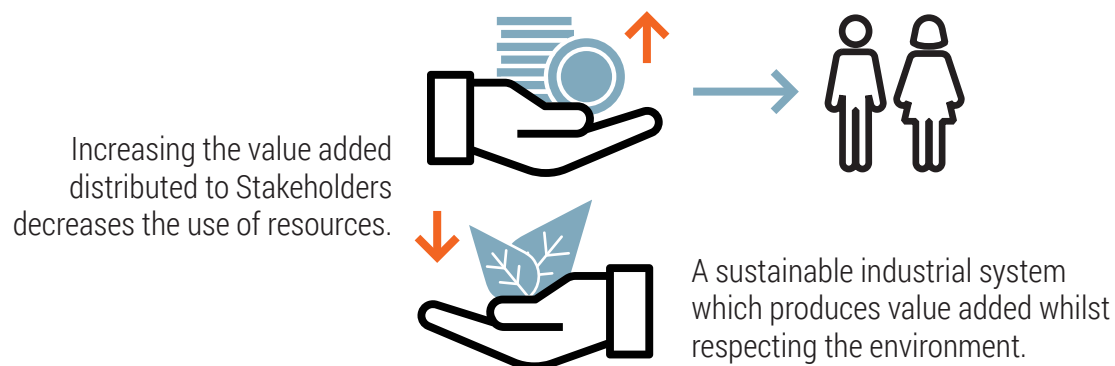
### RECYCLABLE

All products

**INDICATOR GRI G4-EN5**

**TOTAL PRIMARY ENERGY CONSUMPTION (DIRECT+INDIRECT)  
RELATED TO NET GLOBAL VALUE ADDED**

		2011	2012	2013	2014	2015	2016
GJ	Total primary energy consumed (GRI G4-EN3)	7,678,029	7,424,198	7,176,375	6,587,001	6,369,900	6,233,316
€	Net global value added	214,138,613	134,665,154	148,330,284	154,737,323	183,484,576	206,279,587
GJ/€		0.036	0.055	0.048	0.043	0.035	0.030



		2011	2012	2013	2014	2015	2016
m <sup>3</sup> /€	Water resources (GRI G4-EN8) related to value added	0.43	0.63	0.58	0.59	0.48	0.43
Kg/€	Waste disposed of without recovery (GRI G4-EN23) related to value added	0.019	0.031	0.031	0.025	0.021	0.020
KCO <sub>2</sub> eq/€	Total emissions into the atmosphere (GRI G4-EN15 e G4-EN16) related to value added	4.7	5.9	4.6	3.3	2.9	2.4

[www.radicigroup.com](http://www.radicigroup.com)

