Plastics – the Facts 2015
An analysis of European plastics production, demand and waste data
Plastics – the Facts is an analysis of the data related to the production, demand and waste management of plastics materials. It provides the latest business information on production and demand, trade, recovery as well as employment and turnover in the plastics industry. In short, this report gives an insight into the industry’s contribution to European economic growth and prosperity throughout the life cycle of the material.

The data presented in this report was collected by PlasticsEurope (the Association of Plastics Manufacturers in Europe) and EPRO (the European Association of Plastics Recycling and Recovery Organisations). PlasticsEurope’s Market Research and Statistics Group (PEMRG) provided input on the production of and demand for plastics raw materials. Consultic Marketing & Industrieberatung GmbH helped assess waste generation and recovery data. Official statistics from European or national authorities and waste management organisations have been used for recovery and trade data, where available. Research or expertise from consultants completed gaps.

Figures cannot always be directly compared with those of previous years due to changes in estimates. Some estimates from previous years have been revised in order to track progress, e.g. for use and recovery of plastics across Europe over the past decade.

All figures and graphs in this report show data for EU-28 plus Norway and Switzerland, which is referred to as Europe for the purposes of abbreviation – other country groups are explicitly listed.
Plastics: the material for the 21st century

For the past 150 years, plastics materials have been key enablers for innovation and have contributed to the development and progress of society.
Plastics have revolutionised society to meet the challenges the world faces in the 21st century.

Discover why the material of choice for the 21st century is PLASTICS.

Click here to play.

www.plasticseurope.org    www.plastics-themag.com
Plastics: contribution to European society and economy

Did you know?

The European plastics industry directly employs more than 1.4 million people.
2014 key figures of the European plastics industry

The European plastics industry includes plastics raw material producers, plastics converters and plastics machinery manufacturers in the EU-28 Member States.

- **Employees**: 1.45 million
- **Companies**: 62,000 (Most of them SMEs)
- **Turnover**: Over 350 bn €
- **Multiplier effect**: 2.4 in GDP
  - **Almost 3 in jobs**

**Trade balance**: 18 bn €
- **of positive trade balance**

**Contribution**: ~ 27 bn €
- **to public finances**

**Recycling**: 7.7 m t
- **of plastic waste recycled**

Source: Eurostat

*Data including only plastics raw material producers and plastics converters

**Source: Ambrosetti study 2013 – data for Italy
Plastics: market data

Only 4 to 6% of the world’s oil production is used to produce plastics.
Plastics* production is stable in Europe and grows globally

Plastics production in million tonnes

World:
- 2004: 225
- 2007: 257
- 2009: 250
- 2011: 279
- 2012: 288
- 2013: 299
- 2014: 311

Europe (EU28+NO/CH):
- 2004: 60
- 2007: 65
- 2009: 55
- 2011: 58
- 2012: 57
- 2013: 58
- 2014: 59

*Includes plastics materials (thermoplastics and polyurethanes) and other plastics (thermosets, adhesives, coatings and sealants).
Does not include the following fibers: PET-, PA-, PP- and polyacryl-fibers.

Source: PlasticsEurope (PEMRG) / Consultic
China is the largest producer of plastics materials*, followed by Europe.

2014 World production of plastics materials*: 260 m t

* Plastics materials: only thermoplastics and polyurethanes
Positive trade balance of 18 billion euros

Plastics manufacturing extra EU-28

- Trade balance
- Exports
- Imports

Plastics processing extra EU-28

EU-28 plastics industry: trade balance with non-EU member countries (extra EU-28)

Source: Eurostat

2014 extra EU-28 top trade partners in value

<table>
<thead>
<tr>
<th>Exports Extra EU-28</th>
<th>Plastics manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Turkey (13.7%)</td>
<td>1. USA (13.4%)</td>
</tr>
<tr>
<td>2. China (12.4%)</td>
<td>4. Switzerland (11.2%)</td>
</tr>
<tr>
<td>3. USA (11%)</td>
<td>3. Russia (10.7%)</td>
</tr>
<tr>
<td>4. Russia (7.8%)</td>
<td>4. China (8.9%)</td>
</tr>
<tr>
<td>5. Switzerland (6.2%)</td>
<td>5. Turkey (5.9%)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Imports Extra EU-28</th>
<th>Plastics processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. USA (23.7%)</td>
<td>1. USA (22.1%)</td>
</tr>
<tr>
<td>2. Saudi Arabia (13.7%)</td>
<td>2. Switzerland (15.1%)</td>
</tr>
<tr>
<td>3. South Korea (12.2%)</td>
<td>3. China (13.8%)</td>
</tr>
<tr>
<td>4. Switzerland (7.1%)</td>
<td>4. Turkey (11.4%)</td>
</tr>
<tr>
<td>5. Japan (6.2%)</td>
<td>5. Japan (5.7%)</td>
</tr>
</tbody>
</table>
Two thirds of plastics* demand in Europe is concentrated in five countries

Plastics* demand in Europe

47.8 m t

*Includes plastics materials (thermoplastics and polyurethanes) and other plastics (thermosets, adhesives, coatings and sealants). Does not include the following fibers: PET-, PA-, PP- and polyacryl-fibers.
Plastics meet the needs of a wide variety of markets

Distribution of European plastics demand by segment in 2014

- Agriculture: 3.4%
- Electrical & electronic: 5.7%
- Automotive: 8.6%
- Building & construction: 20.1%
- Packaging: 39.5%
- Others*: 22.7%

* Others: include sectors such as consumer and household appliances, furniture, sport, health and safety

Source: PlasticsEurope (PEMRG) / Consultic / myCeppi
EU-28+NO/CH
A variety of plastics for different needs

European plastics demand* by polymer type 2014

Source: PlasticsEurope (PEMRG) / Consultic / myCeppi

* EU-28+NO/CH
Evolution of European plastics demand* by polymer type

Source: PlasticsEurope (PEMRG) / Consultic / myCeppi

* EU-28+NO/CH
Packaging, building & construction and automotive are the top three markets for plastics.

European plastics demand* by segment and polymer type 2014

Source: PlasticsEurope (PEMRG) / Consultic / myCeppi

* EU-28+NO/CH
Plastics: waste management data

Europe is losing economically valuable resources by landfilling almost 8 million tonnes of plastics waste per year.
In 2014 plastics recycling and energy recovery reached 69.2%

In 2014, 25.8 million tonnes of post-consumer plastics waste ended up in the waste upstream. 69.2% was recovered through recycling and energy recovery processes while 30.8% still went to landfill.

- **Recycling**: 29.7%
- **Energy recovery**: 39.5%
- **Landfill**: 30.8%

Treatment for post-consumer plastics waste in the EU28 + Norway and Switzerland

Source: Consultic
Since 2006 recycling and energy recovery have increased

The annual average of post-consumer plastics waste generation from 2006 to 2014 is 25 million tonnes

Total plastics waste recycling and energy recovery from 2006 to 2014
Source: Consultic
Landfilling is still the 1st option in many EU countries

Plastics waste going to landfill (2014)

- More than 50% of plastics waste is landfilled
- Between 10 and 50% of plastics waste is landfilled
- Less than 10% of plastics waste is landfilled. i.e. landfill bans

Source: Consultic
Zero plastics to landfill makes economic and environmental sense

Almost 8 m t of plastics waste were landfilled in Europe in 2014

8 m t of plastics prevented from being landfilled

800 Eiffel towers

10 million barrels of oil needed to produce these plastics

50 large oil tankers

That way we could save €8 billion euros

1.3 x the EU budget for tackling youth employment
In general, countries with landfill ban achieve higher recycling rates.

Treatment of post-consumer plastics waste 2014 (EU-28 + CH/NO)
Source: Consultic
Plastics waste is a key resource in the move towards circular economy. Recycling is the preferred option for plastics waste. However, when recycling is no longer the most sustainable option, energy recovery is the alternative. Both options complement each other and help realise the full potential of plastics waste.
Recycling and energy recovery complement each other to increase resource efficiency

Changes in recycling and energy recovery rates by country

Source: Consultic
* For Bulgaria & Romania: comparison 2014 vs. 2007
** No comparison available for Croatia

Comparison of rates
2014 vs. 2006

Referred to post-consumer plastics waste
Packaging recycling and energy recovery rate by country 2014
(Referred to post-consumer plastics waste)
Source: Consultic
Plastics have several lives

Recycled plastics are used to manufacture a wide variety of new products.

- Outdoor elements
- Furniture and design
- Automotive
- Packaging
- Bags and complements
- Clothes and footwear

Discover awarded recycled plastics products at:
bestproduct.epro-plasticsrecycling.org
Did you know?
The European plastics industry can contribute to increase EU industry GDP from 15% to 20% by 2020.
In 2015 plastics production is still below pre-crisis level

Production index (2010=100, trend cycle & seasonally adjusted data)

Plastics manufacturing
Plastics machinery
Plastics processing

Plastics industry production in EU-28
Source: Eurostat
# Glossary of terms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ABS</td>
<td>Acrylonitrile Butadiene Styrene resin</td>
</tr>
<tr>
<td>ASA</td>
<td>Acrylonitrile Styrene Acrylate resin</td>
</tr>
<tr>
<td>bn</td>
<td>billion</td>
</tr>
<tr>
<td>bn€</td>
<td>billion euros</td>
</tr>
<tr>
<td>CH</td>
<td>Switzerland</td>
</tr>
<tr>
<td>CIS</td>
<td>Commonwealth of Independent States</td>
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<tr>
<td>Consultic</td>
<td>Consultic Marketing &amp; Industrieberatung GmbH</td>
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<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EPRO</td>
<td>European Association of Plastics Recycling and Recovery Organisations</td>
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<tr>
<td>ETP</td>
<td>Engineering Thermoplastics</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<tr>
<td>myCeppi</td>
<td>Eastern and Central European Business Development</td>
</tr>
<tr>
<td>m t</td>
<td>Million tonnes</td>
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<tr>
<td>NAFTA</td>
<td>North American Free Trade Agreement (Canada, USA, Mexico)</td>
</tr>
<tr>
<td>NO</td>
<td>Norway</td>
</tr>
<tr>
<td>Other plastics</td>
<td>Thermosets, adhesives, coatings and sealants</td>
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<tr>
<td>Other ETP</td>
<td>Other engineering thermoplastics</td>
</tr>
<tr>
<td>PA</td>
<td>Polyamide</td>
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<tr>
<td>PC</td>
<td>Polycarbonate</td>
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<tr>
<td>PE</td>
<td>Polyethylene</td>
</tr>
<tr>
<td>PE-HD</td>
<td>Polyethylene, high density</td>
</tr>
<tr>
<td>PE-LD</td>
<td>Polyethylene, low density</td>
</tr>
<tr>
<td>PE-LLD</td>
<td>Polyethylene, linear low density</td>
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<tr>
<td>PE-MD</td>
<td>Polyethylene, medium density</td>
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<td>PEMRG</td>
<td>PlasticsEurope Market Research Group</td>
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<tr>
<td>PET</td>
<td>Polyethylene Terephthalate</td>
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<tr>
<td>Plastics</td>
<td>Plastic materials + other plastics</td>
</tr>
<tr>
<td>Materials</td>
<td>Thermoplastics + Polyurethanes (PUR)</td>
</tr>
<tr>
<td>PUR</td>
<td>Polyurethane</td>
</tr>
<tr>
<td>PMMA</td>
<td>Polymethyl Methacrylate</td>
</tr>
<tr>
<td>PP</td>
<td>Polypropylene</td>
</tr>
<tr>
<td>PS</td>
<td>Polystyrene</td>
</tr>
<tr>
<td>PS-E</td>
<td>Polystyrene, expandable</td>
</tr>
<tr>
<td>PTFE</td>
<td>Polytetrafluoroethylene</td>
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<tr>
<td>PVC</td>
<td>Polyvinyl Chloride</td>
</tr>
<tr>
<td>SAN</td>
<td>Styrene-acylonitrile</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and medium entreprises</td>
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<tr>
<td>Thermoplastics</td>
<td>Standard plastics (PE, PP, PVC, PS, EPS, PET (bottle grade)) + Engineering plastics (ABS, SAN, PA, PC, PBT, POM, PMMA, blends and others including High Performance Polymers)</td>
</tr>
<tr>
<td>Thermosets</td>
<td>Urea-formaldehyde foam, melamine resins, polyester resins, epoxy resins, etc</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
</tbody>
</table>
**PlasticsEurope**

PlasticsEurope is one of the leading European trade associations with centres in Brussels, Frankfurt, London, Madrid, Milan and Paris. We are networking with European and national plastics associations and have more than 100 member companies, producing over 90% of all polymers across the EU28 member states plus Norway, Switzerland and Turkey. The European plastics industry makes a significant contribution to the welfare in Europe by enabling innovation, creating quality of life to citizens and facilitating resource efficiency and climate protection. More than 1.45 million people are working in more than 60,000 companies (mainly small and medium sized companies in the converting sector) to create a turnover around 350 bn EUR per year.

www.plasticseurope.org

**EPRO (European Association of Plastics Recycling and Recovery Organisations)**

EPRO is a pan-European partnership of specialist organisations that are able to develop and deliver efficient solutions for the sustainable management of plastics waste, now and for the future. EPRO members are working to optimise national effectiveness through international co-operation: by studying successful approaches, evaluating different solutions and examining obstacles to progress. By working together EPRO members can achieve synergies that will increase efficient plastics recycling and recovery. Currently 19 organisations in 14 European countries, South Africa and Canada are represented in EPRO.

www.epro-plasticsrecycling.org