Challenges for the British Plastics Industry

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British Plastics Federation

RSC Marketing Group
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The British Plastics Federation

- Longest established plastics Trade Federation in the world
- Unique in Europe due to diverse membership
  - Including materials, machinery and processors
- Represents 75% of industry by turnover
- 400 direct members, 1600 including affiliates
  - Covering 140,000 + staff
Group Structure
Central Committees

Environment  Industrial Health and Safety  Fire Safety  Product Safety

Affiliated Organisations

gtma  Insulating Concrete Formwork Association  PAFA  pcn
PlasticsEurope  Northern Ireland Polymer Association  SPRA

The UK's Leading Plastics Trade Federation
First In Plastics | www.bpf.co.uk

British Plastics Federation
The Plastics Processing Industry in the UK

- Material processed – 4.8 million tonnes
- Plastics material produced – 2.5 million tonnes
- Processor sales turnover - £13.1 billion
- Value of exports - £4.6 billion
- People employed – 186,000
- Over 3,000 primary processors
- 7,430 companies in the polymer industry
- Plastics industry turnover £19bn
- 25% of plastics products manufactured are exported
UK Plastics Consumption (ktonnes) 1973-2010

Source: The British Plastics Federation
UK Application Split For All Plastics

- Packaging: 38%
- Construction: 22%
- Electrical: 6%
- Furn/House: 7%
- Transport: 7%
- Medical: 2%
- Others: 18%
Number of Plastics Processors defined by Process

- Thermoforming: 1%
- Extrusion: 12%
- Thermoset Processing: 32%
- Injection Moulding: 45%
- Vacuum forming: 5%
- Blow Moulding: 2%
- Rotamoulding: 3%

Source: The British Plastics Federation
Location of Polymer Companies

- Wales: 6%
- Scotland: 5%
- Northern Ireland: 4%
- East Midlands: 10%
- West Midlands: 12%
- East England: 10%
- South East: 12%
- South West: 9%
- London: 5%
- Yorkshire and Humberside: 10%
- North East: 5%
- North West: 12%
- Yorkshire and Humberside: 10%
• A History of Plastics
• A-Z of Additives
• A-Z of Polymers
• A-Z of Plastics Processors
• Plastics Translations
• Key Plastics Applications
UK Plastics: A positive future 1)

Society needs plastics:

• The key to a ‘sustainable’ society
  – Role in saving energy
  – Role in conserving water
  – Role in preventing food wastage

• UK plastics industry is leading the way in the understanding of what sustainability means for an industrial material
UK Plastics: A Positive Future 2)

• There is continuing investment in UK plastics industry
• The industry is served by a cadre of excellent academic centres: Belfast, Bradford, Queens, Loughborough, London Metropolitan and Edinburgh Napier.
• The industry is working more closely with the world-class UK design industry
Plastic Blood

Developed at University of Sheffield

For battlefield applications, no need to fridge, just add water.
Lake District boardwalk made from 500,000 plastic bottles

Centriforce Products has built a 450 metre boardwalk made from 500,000 plastic bottles in the Lake District. It lasts four times longer than wood.
Innovation in Recycling 2)

• The Epwin Group claims to have developed the world’s first fully recycled PVC-U Window, from social housing refurbishment waste
Innovation in Plastics 1)

- **A380 Maiden flight from Heathrow with lightweight plastics**

  The Airbus A380 is 22% carbon fibre reinforced plastics and burns 12% less fuel per seat, better for environment and operating costs.

- **Boeing 787 Dreamliner has 40% plastic composite fuselage**

  The lighter but strong fuselage will give a 30% reduction in maintenance costs and a 20% saving in fuel.
Innovation in Plastics 2)

- **Plastic semiconductors – Plastics Logic**
  A revolutionary development for light, tough flexible display screens such as electronic paper

- **Innovative dissolving textiles – University of Ulster & Sheffield Polymer Centre**
  Fabric made from a clear polymer that dissolves and could be recycled into a bottle
• Gloves enabling wearers to climb walls – University of California

Dry gecko inspired directional adhesive uses hard plastic microscopic fibres of polypropylene to climb walls
Challenges for Plastics 1)

Product Safety

• Use of polycarbonate in baby bottles banned from March 2011
• Attempted EP ban on PVC in RoHS Directive re-cast thwarted
• Spin versus sound science
Challenges for Plastics 2)

Plastics in Waste

• Plastics 2020 Challenge seeks to drive plastics from landfill by 2020 and double to 50% packaging recycling
• Plastics bottle recycling has reached 46% - milk bottles 72% - Overall 24%
• 30% of EPS packaging is recycled
• Mixed plastics a challenge
• Unrecyclable plastic should go to Energy from Waste. Could provide 11% of UK Energy needs
Challenges for Plastics 3 a)  

**Plastics in Marine Litter**  
- BPF ‘Operation Clean Sweep’ to prevent pellet loss  
- Participation in Beach cleans and primary school bottle recycling drive with Marine Conservation Society  
- BPF partner in a major European plastics industry project on marine litter. EU funding sought.
Challenges for Plastics 3b)

Plastics in Marine Litter

• BPF sponsoring Ghent University study in microplastics ingestion by marine organisms

• BPF gives pledges at December National Litter Convention
Plastics and Carbon

- Only 4% of global oil production is used for plastics
- Not energy intensive in production
- Huge CO$_2$ savings through light-weighting aircraft, cars and packaging
- Plastics insulation to conserve energy
- Plastic water mains in London preventing 30% leakage
- Key material for windmill rotor blades, electric cars and solar panels
And the Future Beyond 2030?

“I have long been of the opinion that human evolutionary destiny is to merge human biology with machine intelligence to create a successor species, a semi-plastic species which, freed of biological time constraints, will be free to leave this planet and begin to colonise the universe with a form of intelligence that ….can only be described as post-human.”

Ray Hammond, The World in 2030