British Plastics Federation

Productivity Redefined: Competitive Now & Into the Future

ORIGINALLY DELIVERED AT THE **FESTIVAL OF POLYMER INNOVATION 2024**
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Productivity Redefined:

Competitive now & into the future

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90 years

The leading voice of the UK plastics industry

#1

The world's first plastics association

80%

Representation of UK plastics industry by turnover

30+

Dedicated staff

500+ members

100

Around member meetings every year

18

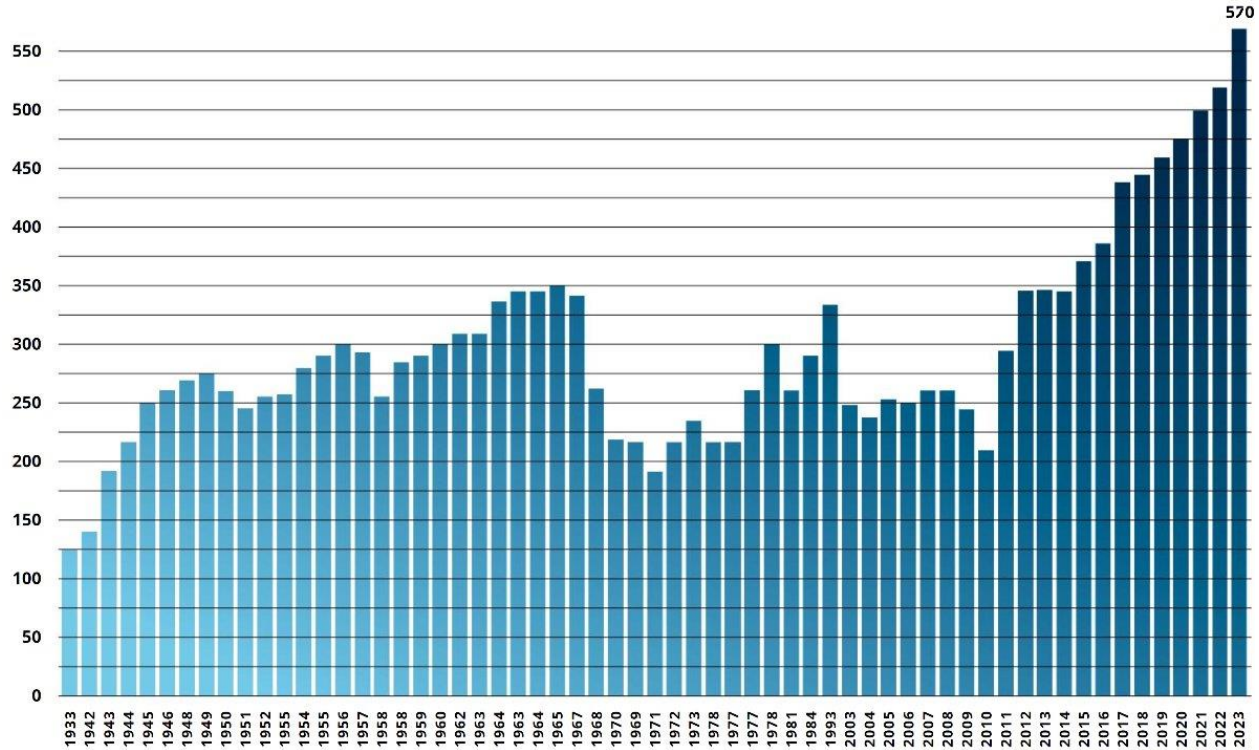
Membership groups

6

Central expert committees

1.5+ million

Page views on bpf.co.uk each year



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BPF Central Expert Committees

BPF Group Structure

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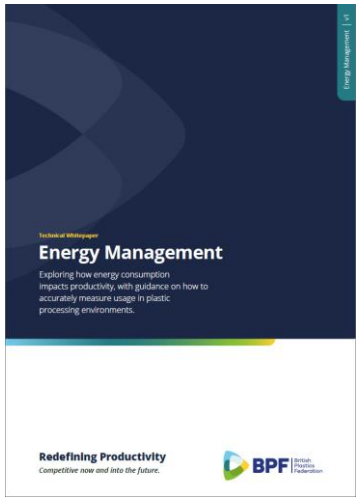

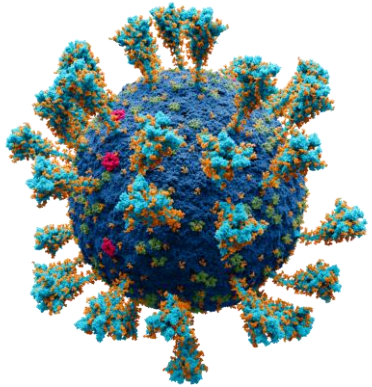

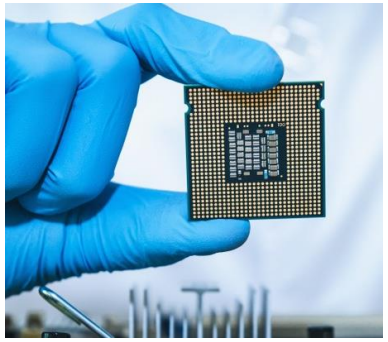

Productivity Redefined:

Competitive now & into the future

https://www.bpf.co.uk/committees/productivity-redefined.aspx

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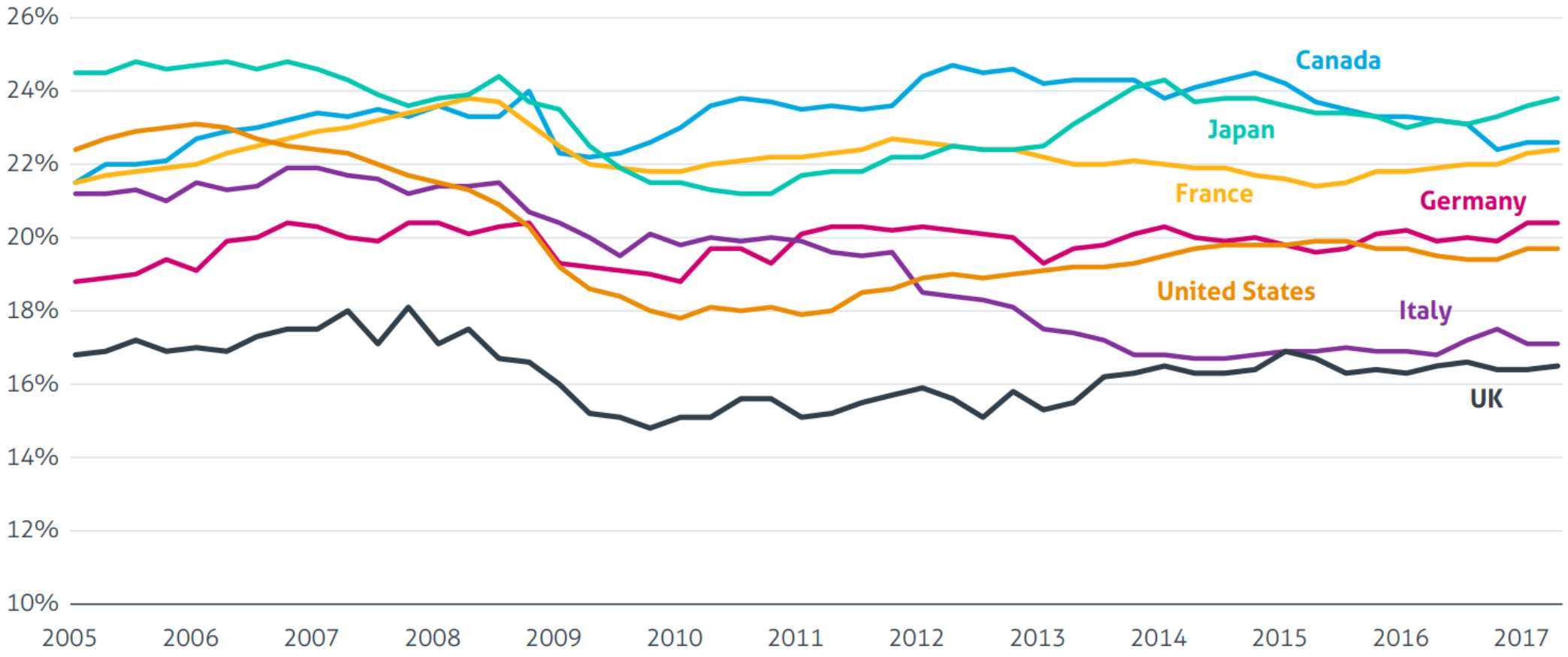
The UK has persistently lagged other comparable countries

Figure 3 **Total investment as a share of GDP**



Source: Institute for Government analysis of ONS figures.

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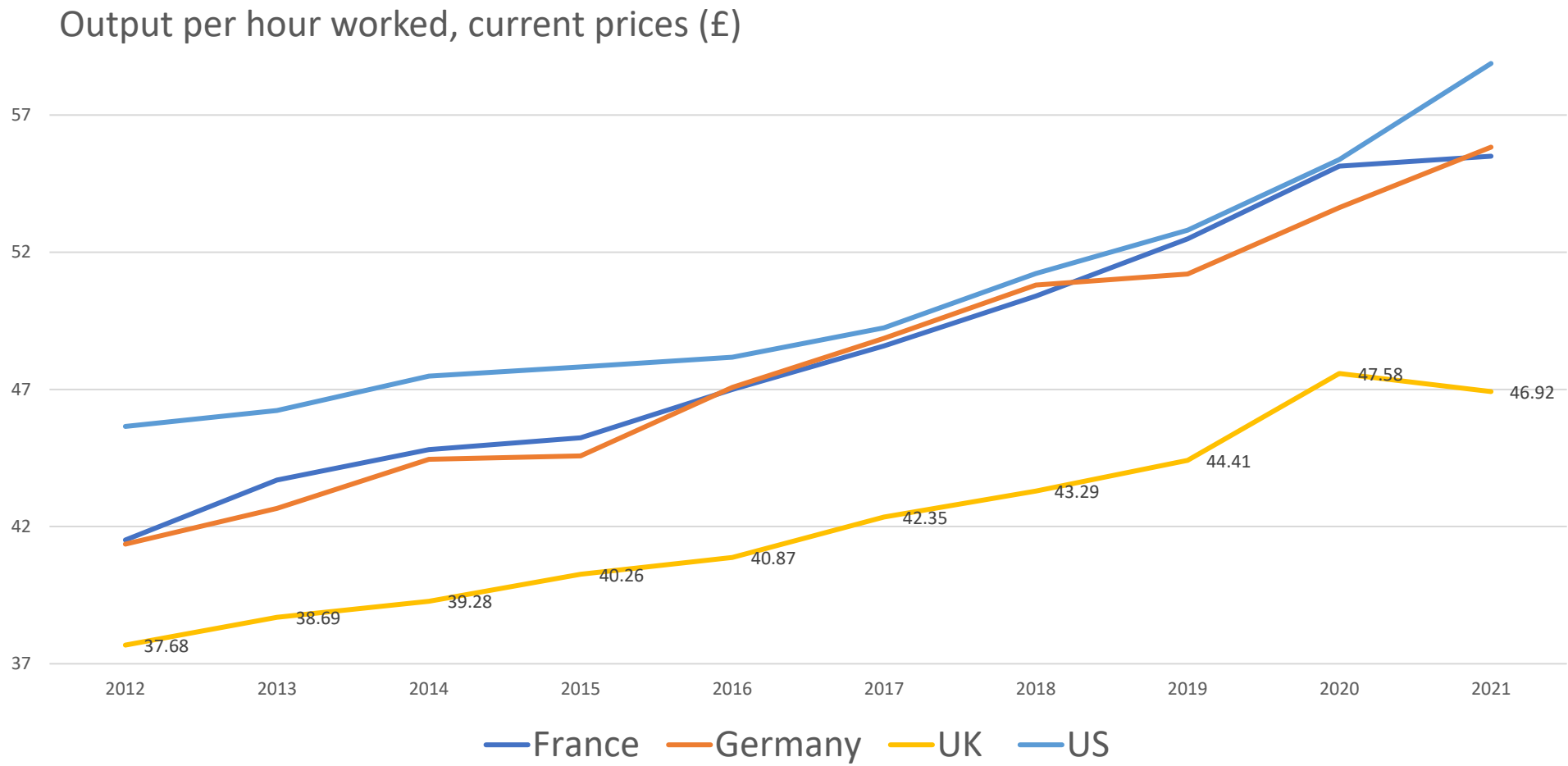
The UK has persistently lagged other comparable countries



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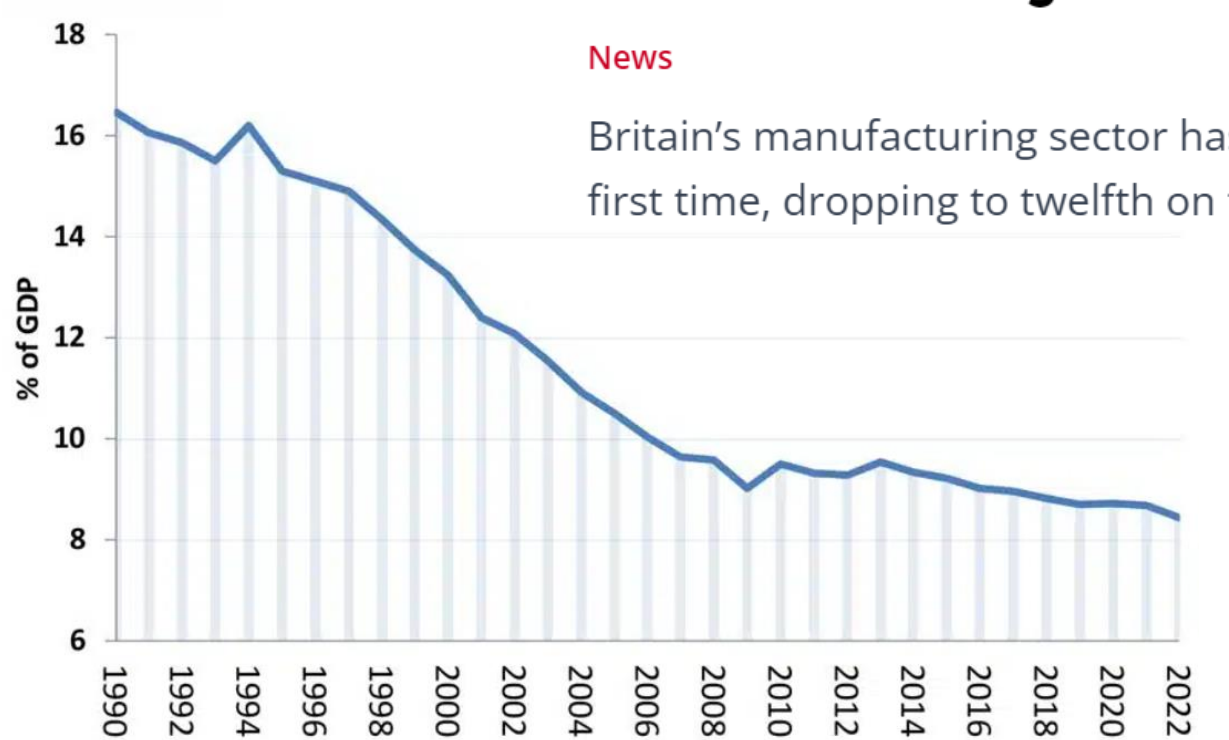
Manufacturing as a % of GDP



THE ENGINEER

UK manufacturing sector slips to twelfth in world rankings

News

Britain's manufacturing sector has dropped out of the top ten world rankings for the first time, dropping to twelfth on the list compared to eighth in 2023.

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interplas
Innovation Happens Here


JLR


intouch

BPF Central Expert Committees

BPF Group Structure

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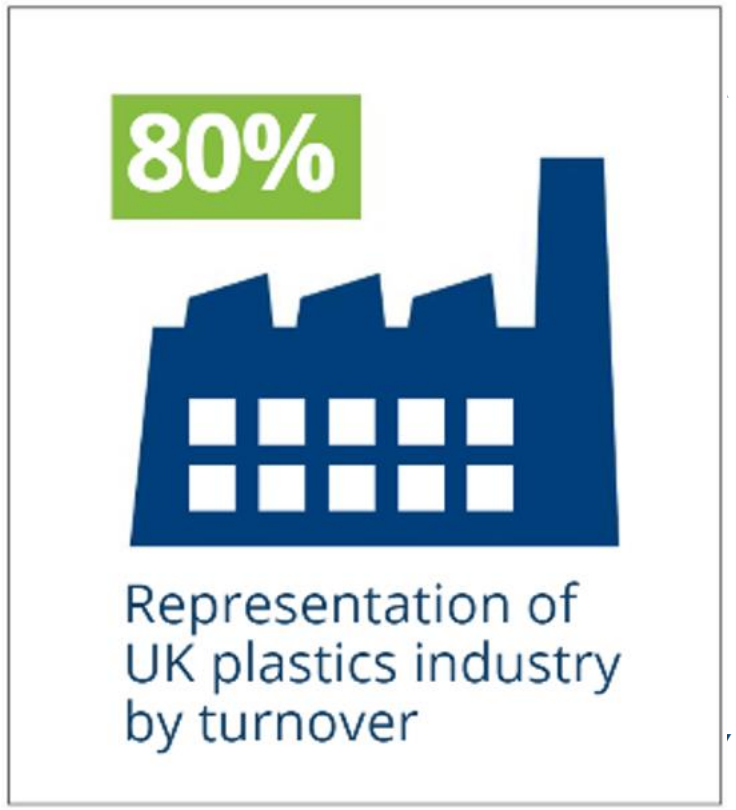
BPF Group Structure



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Template

1. **Executive Summary:** Describe subject, typical/standard procedures, the key issues holding back productivity and the opportunities to make progress. Should include a summary of the possible benefits and what a successful project would look like.

2. **First Steps:** Understanding/recording existing performance, setting goals, identify issues, and planning for change

3. **State of the Art:** Describing the state of the art, what processes, technologies or strategies can be deployed to improve productivity. This section should contain the details as to how productivity can be measured and improved.

4. **Sustainability Impact:** Detailing the environmental and energy impacts, both positive and negative.

5. **Education & Skills Impact:** Information on what additional skills would be required to implement change and the impact of those changes on current staff (for example which job roles would be replaced by the changes). Consider the educational requirements, for example would a higher level of education be required to deliver success.

6. **Risk:** What is the risk if change is implemented and what is the risk if it is not!

7. **Reward:** Describe the RoI (or other business metric), include any other benefit that the change may bring for example Headcount impact.

8. **Case Studies:** Provide case studies from UK companies who have made the changes described, should be honest and real customer stories, based in fact.

9. **Funding:** What external funding is available, what are the criteria for access (for example SME).

10. **References:** Other guidance documents, ACoPs, Standards.

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Redefining Productivity – Phase I

Automation

Digitalisation

Energy

Equipment

Materials

Product Design

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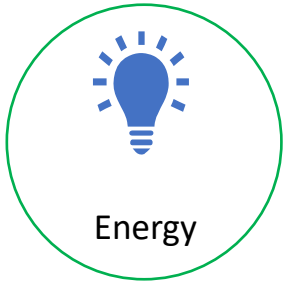
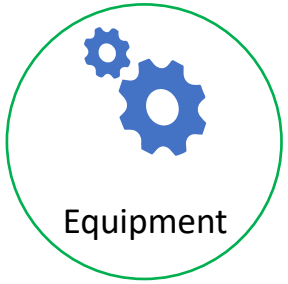
Redefining Productivity – Phase I

Automation

Digitalisation



Energy



Equipment

Materials

Product Design

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Redefining Productivity – Phase I

Automation

Digitalisation

Energy

Equipment

Materials

Product Design

Working Group

Consultation

Review

Publish

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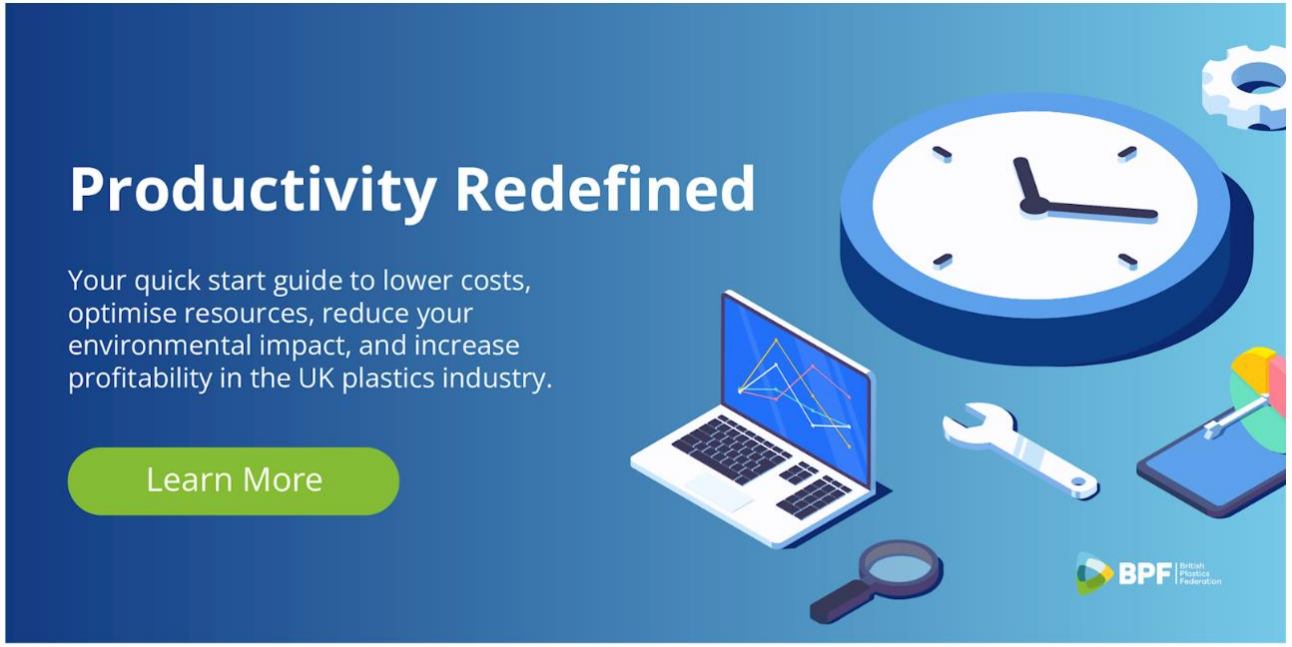
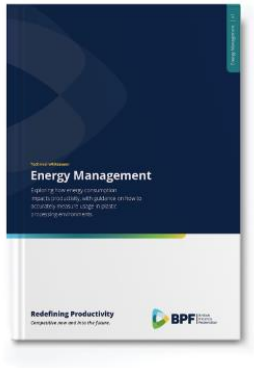


Building a Plastics Business That Leads the Path Towards a Greener Future

The plastics industry is changing. It is now as important as ever to increase the efficiency of plastic manufacturing through proactive measures and innovative strategies. By demonstrating a sustainable and socially responsible sector, we can attract funding and investment opportunities like never before.



Technical Whitepaper: Energy Management

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Technical Whitepaper: Product Design

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Technical Whitepaper: Equipment Consultation

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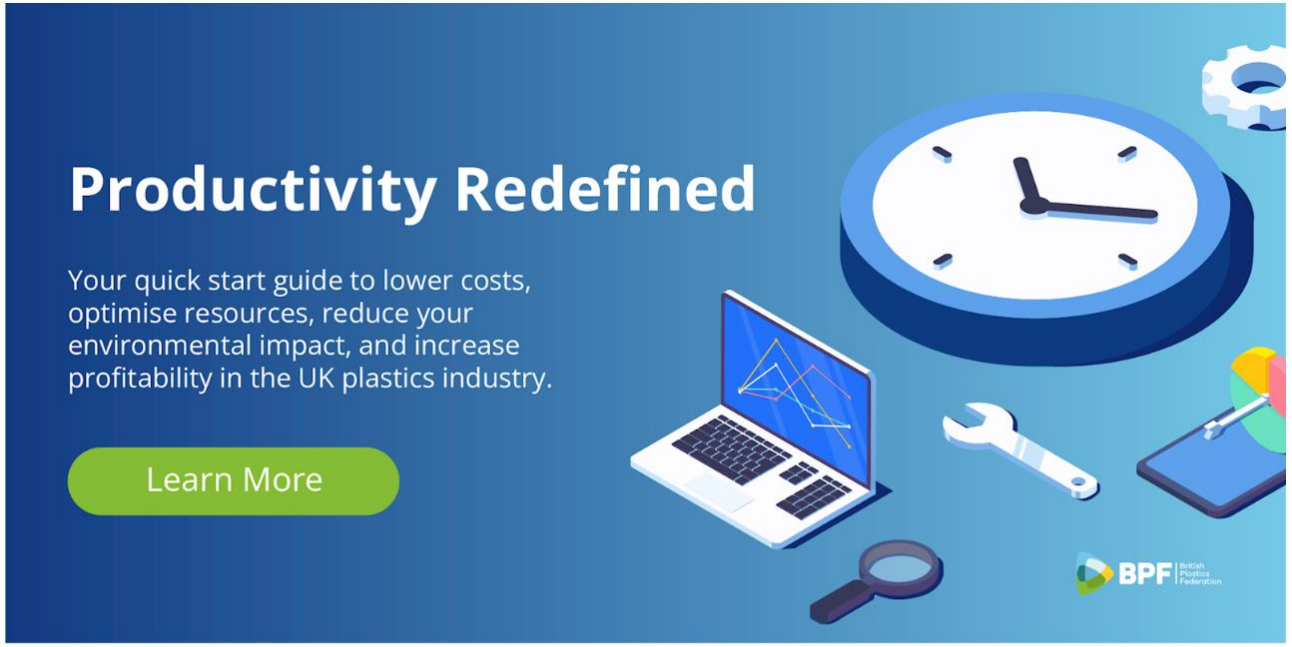

Redefining Productivity – Phase II

Revisions to Equipment

- Blow Moulding
- Compression
- Extrusion
- Rotational Moulding
- Thermoforming

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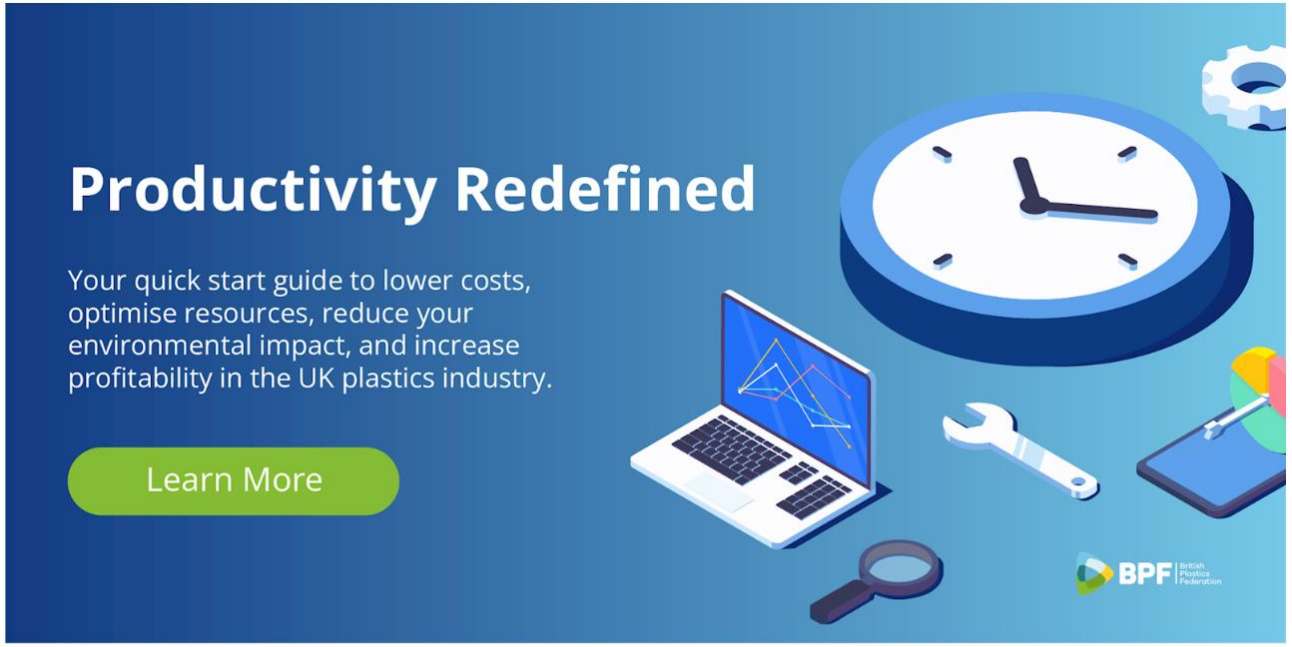

Redefining Productivity – Phase II

New Categories:

- Additive Manufacturing
- Ancillary Equipment
- Quality
- Sustainability

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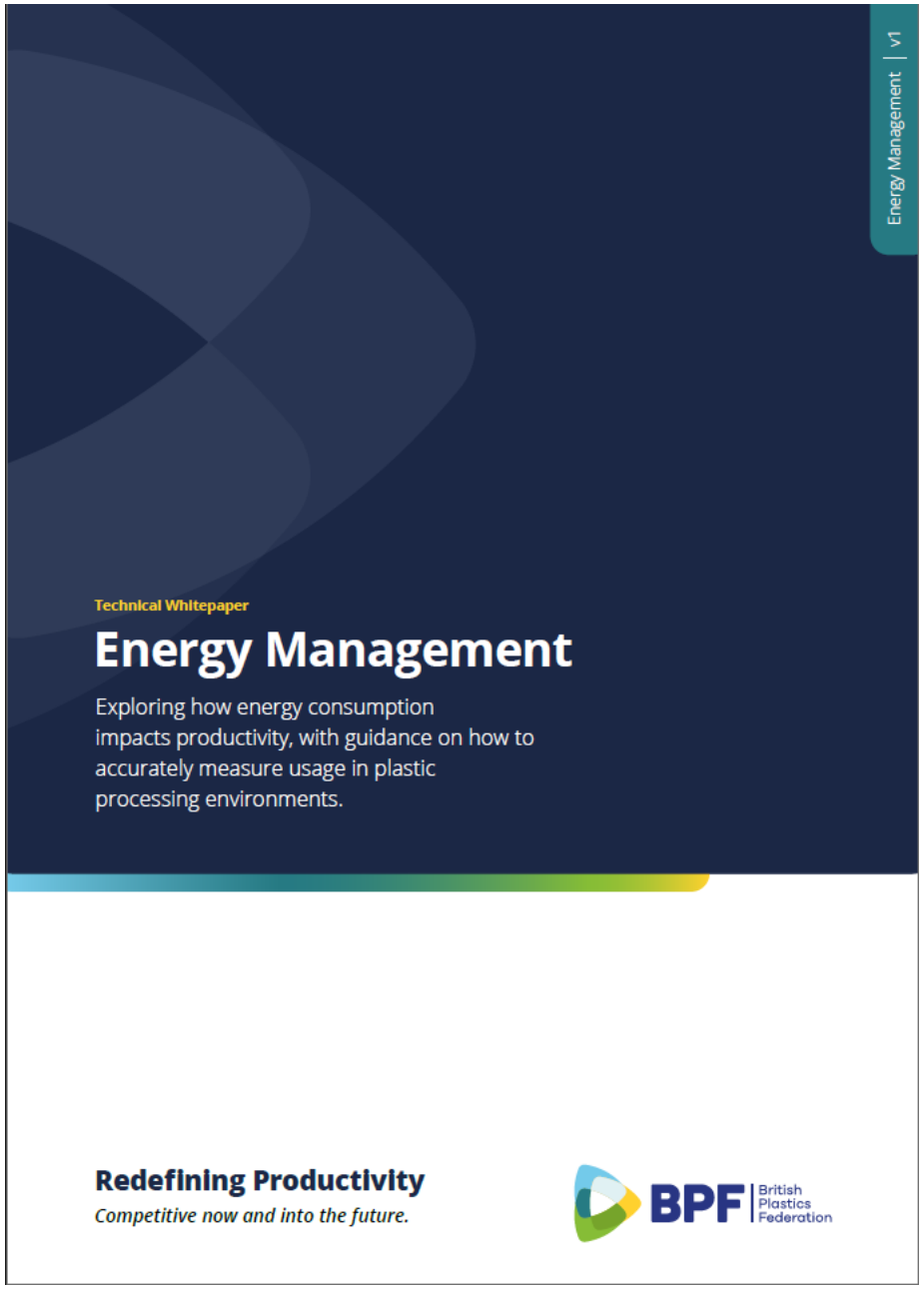

Polymer processing is energy intensive. The manufacturing of components and the services can, in most instances, equate to over 90% of energy used by the average UK plastic processor.

Implementing a robust energy management system creates the structure and oversight to better monitor energy consumption and improve efficiency. Aside from saving on energy use, the cumulative benefit of understanding your energy use can lead to significant industrial productivity gains.

Other advantages can include

- **quicker start-ups generating less material waste;**
- **reduced resource use and pollution;**
- **lower operational and maintenance costs;**
- **optimisation of machines to reduce cycle times;**
- **increased production capacity to manufacture more components.**

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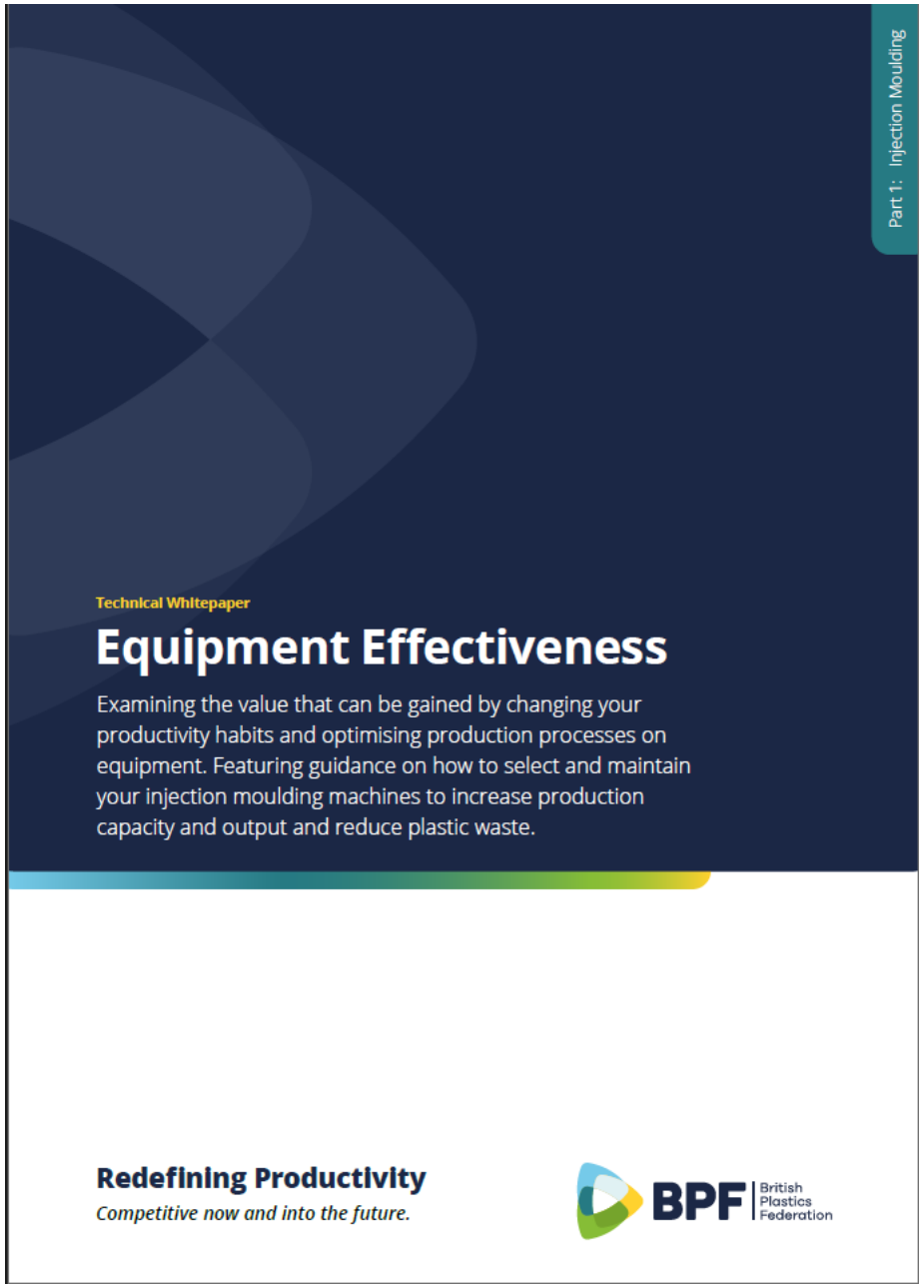

More productive companies typically generate higher margins and more profit. This can be reinvested in the company to support long-term growth. For processing SMEs, Equipment Productivity (the physical capital) is one of the most important metrics to master, as it determines:

- 20% higher output by optimising existing plant *(case study 8.1);*
- 40% reduction in heating energy from machine enhancements *(section 3.6.2 barrel insulation);*
- Address the factors that could lead to an 85%+ OEE score;
- 10-15% improvement in dry cycle times without altering the process, just more stability *(see section 3.5);*
- Achieving up to 85% energy savings, leading to increased profits and well as supporting Net Zero manufacturing targets;
- The most transformative digitalisation and automation tools that can increase efficiency and production capacity (*see section 3.8);*
- How a recommended equipment maintenance schedule can lower operational and maintenance costs and increase OEE by 20% *(see section 3.7).*

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Technical Whitepaper

Product Design

Recognising the positive impact product design has on sales, revenue and speed to market, and how well-designed products deliver better processing efficiency, product quality and customer satisfaction.

Redefining Productivity

Competitive now and into the future.

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Product Design in polymer processing is widely recognised as a critical stepping stone to improving company performance. Achieving a high 'right first time' design ratio is proven to lead to cost savings, increased output, better brand equity and, most importantly for commercial success, helps to accelerate speed to market.

Written by design and processing experts, it also puts into context the measurable value of:

- Implementing **efficient design processes** to control the development of products, and how these enable polymer processors to:
  - eliminate waste and inefficiencies;
  - respond quickly to market changes;
  - significantly reduce product development risks.
- Using **tried and tested design methodologies** to support the creative process and refine ideas, resulting in:
  - improved product functionality that meet customers' defined requirements;
  - reduced development time.
- Cross-functional, peer-to-peer and multi-generational collaborations, gaining input from sales, marketing, tooling, manufacturing, and a host of other disciplines, and the support tools that help to unlock innovation in order to **achieve higher "right first time" ratio** to help minimise:
  - the number of product iterations that can lead to market launch delays;
  - order changes;
  - wasted time and resources;
  - unsatisfied customers.
- **Addressing sustainability of a product's lifecycle footprint** at the design phase, including product composition, efficiency and recyclability, and how this improves:
  - company image and brand equity;
  - long-term social value.

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About The British Plastics Industry

3.5

million tonnes

Plastic materials processed

1.7

million tonnes

Plastic materials produced

150,000

People directly employed

400k

Total employment including indirect jobs (approx)

£28.7

billion

Plastics industry turnover

5,700

Companies in the plastics industry

+10%

Increase in Export Sales (2021-2022)

Top 10

Plastics are one of the UK's Top 10 Exports

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https://www.bpf.co.uk/committees/productivity-redefined.aspx