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# Level 3 Certificate

# MATHEMATICAL STUDIES

Paper 2A/2B/2C

June 2021

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## Preliminary Material

To be opened and issued to candidates on  
Monday 1 March 2021 or as soon as possible after that date.

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## Plastic waste

The UK Government publishes statistics on the use of plastic.

A briefing paper about plastic waste was published on the House of Commons Library's website. An extract from the briefing paper is shown below.

### Statistics on plastic waste

#### How much plastic does the UK produce?

The latest estimates for the UK are for 2016 and cover all producing sectors, not just household waste. In that year an estimated 1.53 million tonnes of plastic waste were reported. This was up by 24% since 2010 and 13% since 2014. The service sector was the largest single contributor with 53%. Households contributed just over 8%. These data are based on waste streams that are categorised as 'plastics wastes' (only) and exclude the plastic content of other mixed waste streams such as the general 'Households and similar wastes' stream.

The coverage of UK data on plastic waste has been questioned by some organisations. A report for WWF calculated that total plastic waste generation in the UK in 2014 was around 4.9 million tonnes and could increase to around 6.3 million tonnes by 2030. Plastic packaging made up two-thirds of plastic waste in 2014 (3.3 million tonnes).

#### What happens to plastic waste?

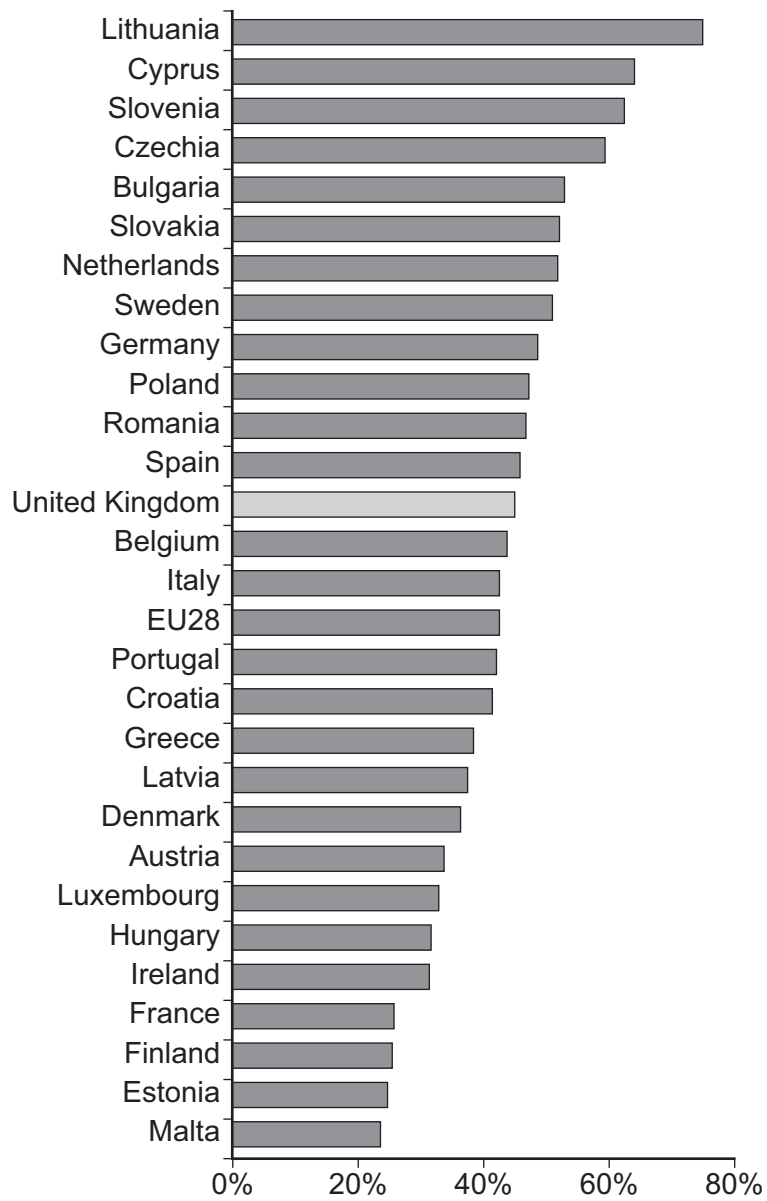
In 2016, 91% of plastic waste (in this stream only) which was sent to treatment went to 'recycling and other recovery' and 9% to landfill. The amount of plastic waste going to landfill fell from 122 400 tonnes in 2012 to 53 400 tonnes in 2016.

Again, the coverage of this data has been questioned. The WWF-UK report calculated recycling rates for single use plastics, based on the amount of waste produced, not just the share going to 'treatment' of any kind (landfill, recycling, incineration, etc). They estimated recycling rates of 29% for 2018 and projected a rate of 37% for 2030 based on estimates of all plastic waste. Estimated landfill rates in 2018 were 48% with 22% going to energy recovery.

#### Plastic packaging waste

The chart on the page opposite shows the latest plastic recycling rates for EU members. The UK's rate in 2016 was slightly higher than the EU average of 42.4%, but below levels in some larger member states including Germany, Sweden and the Netherlands.

Chart 1

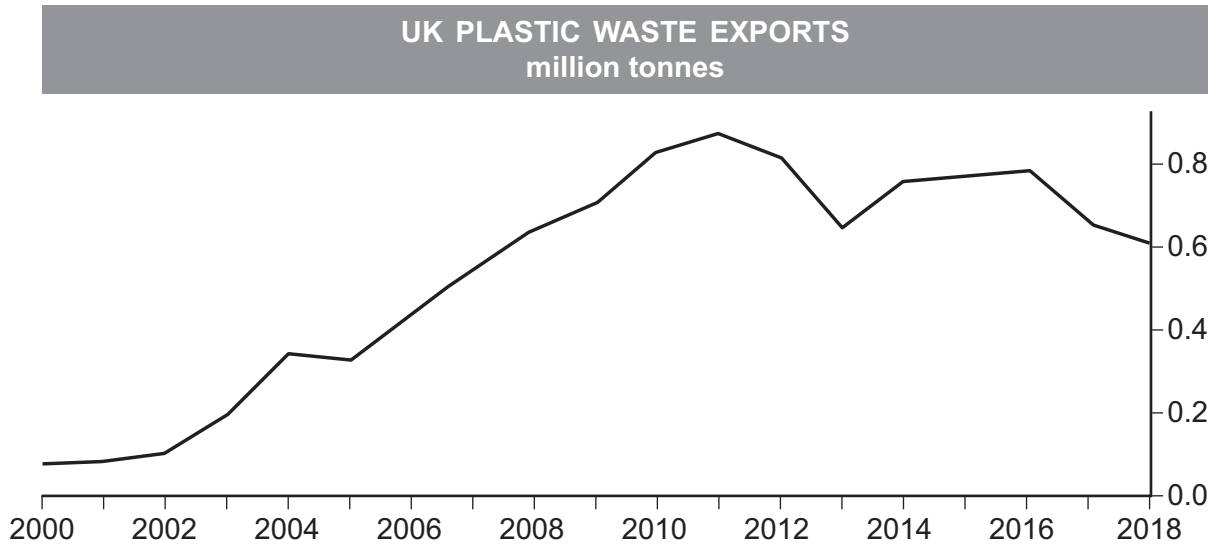
**PLASTIC PACKAGING RECYCLING/RECOVERY RATES  
2016**

Turn over ►

## Exports of plastic waste

In 2018 the UK exported 0.6 million tonnes of plastic waste. The amount exported increased rapidly in the decade to its 2011 peak of almost 0.9 million tonnes. The chart below shows that it has generally fallen since then. The 2018 level was the lowest for a decade.

Chart 2



Until recently the most important destination for this was China/Hong Kong. Much of the expansion of waste exports went to China/Hong Kong and these exports accounted for more than 80% of the total in 2005 to 2012. They fell in importance after 2013 but were still the largest single destination in 2017 with 37% of the total. The decision by China to ban imports of certain types of waste for recycling from 2018 saw UK exports to China fall by almost 90%. In 2018 the most important export destinations were Malaysia (17%), Turkey (13%), Indonesia (12%) and China/Hong Kong (9%).

## END OF PRELIMINARY MATERIAL

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