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Case study fact sheets

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Kettles

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an estimated

26 million

Kettles sold in the EU market each year

400kg CO_2eq

Life-cycle emissions from a typical electric kettle, mostly electricity consumption during use

Up to 140,000 kettles

destroyed or directly recycled each year, despite being brand new and unused (estimate)

Eco-friendly design

3.5 Mt CO_2eq saved each year from improved product efficiency and design

= 8 million barrels of diesel

€ 2.5 bn savings in electricity and water bills for EU households due to more efficient product design

Increase durability by 1 year

390 kt CO_2eq saved each year from reduced production volume, and:

- 2,000 tonnes of steel saved
- 2,000 tonnes of plastics saved
- 68m litres of water saved

€ 200 m consumer savings p.a. (EU) from less frequent replacement of kettles

Ban destruction of unsold kettles

Resource and GHG emissions savings:

- 64 tons of steel
- 64 tons of plastics
- 2m litres of water
- > 11,000 tons CO_2eq in GHG emissions

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Note: These figures are reasonable best estimates made by Cambridge Econometrics based on the existing available data. More details on the assumptions in the study are provided in the main report. Kettle icon made by Freepik from from www.flaticon.com.

Microwaves

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an estimated **18 million**

Microwave ovens sold in the EU each year

416 kg CO_2eq

Life-cycle emissions from a typical microwave, mostly electricity consumption during use

Up to 100,000 unsold microwave ovens **are destroyed or directly recycled each year** (estimate)

Eco-friendly design →

1 Mt tons CO_2eq saved each year from improved product efficiency and design

€ 650 m electricity bill savings p.a. across EU households if all microwaves were replaced with more efficient models

Increase durability by 1 year →

over 280 kt **CO_2eq saved each year** from reduced production volume, and:

- 14,000 tonnes of steel saved
- 2,000 tonnes of glass saved
- 40m litres of water saved

€ 240 m consumer savings p.a. (EU) from less frequent replacement of kettles

Ban destruction of unsold microwaves and stop overproduction →

Resource and GHG emissions savings:

- 690 tonnes of steel
- 110 tonnes of glass
- 2m litres of water
- > 13,000 tonnes CO_2eq in GHG emissions

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T-shirts

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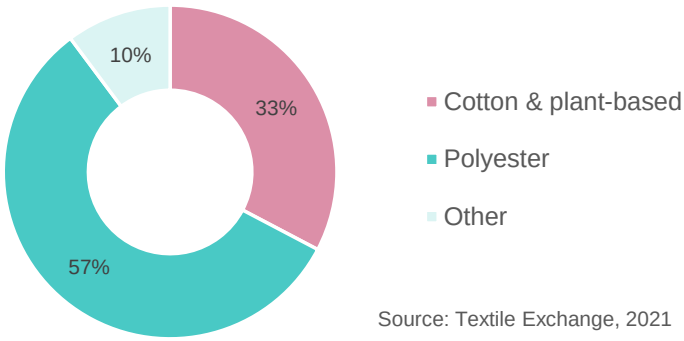
approx.

3.3 billion

T-shirts and similar tops on the EU market **each year**

Fibres used in textiles, 2020



Source: Textile Exchange, 2021

Over **22 Mt CO_2eq** GHG emissions each year from making cotton and polyester t-shirts for the EU market **plus:**

- 3.5 bn m^3 water used;
- 1.2 m tonnes of raw cotton;
- 190 m litres of crude oil consumed.

Potential benefits of enhanced Ecodesign measures:

Use of recycled cotton in 50% of cotton t-shirts → Could save:
- 600 m kg of raw cotton
- 560 m m^3 of water

Use of renewable energy and organic cotton in the other 50% of cotton t-shirts production

3 Mt CO_2eq saved each year = annual GHG emissions of Malta

Increase durability of cotton and polyester t-shirts by 10% → Potential savings if the longer product life is realized in 50% of t-shirts:
- 57 m kg of raw cotton
- 160 m m^3 of water
- 9 m litres of crude oil
- 1 Mt CO_2eq

Between **11-32 million** Brand new but unsold T-shirts tops are **destroyed or directly recycled each year** in the EU → Potential savings if this overproduction was eliminated:
- 12-35 m^3 of water
- 4,000-12,000 tonnes of cotton
- 80,000-220,000tons CO_2eq

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Cement

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approx.

196

million tonnes

Annual production of cement in the EU

117 Mt CO_2eq

Annual emissions from EU cement production (estimate)

~ GHG emissions of Belgium

7% of global GHG emissions linked to cement production

Potential benefits of Ecodesign measures:

Replace last wet kilns with dry kilns

1.7 Mt CO_2eq

saved each year

= roughly equivalent to burning 4 million barrels of diesel

Widespread use alternative fuels in clinker production

7 Mt CO_2eq

saved each year

= roughly, the annual GHG emissions of Cyprus

Use renewable energy and carbon capture 50% of EU cement production

28 Mt CO_2eq

saved each year

= roughly, the annual GHG emissions of Slovakia

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Office desks and chairs

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- **Extremely diverse product group,** involves many different materials (wood, textiles, leather, metals)
- **>10m tonnes** of products: EU furniture consumption p.a.

6m desks sold in the EU each year (estimate)

12m office chairs sold in the EU each year (estimate)

2.1 Mt CO_2eq

Production emissions p.a. roughly equivalent to Malta's annual GHG emissions

Overproduction:

- An estimated 70,000 desks/tables and 130,000 office chairs unsold each year and destroyed or recycled

Potential benefits of Ecodesign measures:

- Increase recycled material content
- More sustainable production processes
- Enhanced durability

- Reducing production emissions by 10%:
  → 100,000 tonnes CO_2eq saved each year
- Better durability (1 extra year)
  → 65,000 tonnes CO_2eq saved each year

- Replace 1 kg of virgin aluminium with 1 kg of recycled aluminium in all office chairs
  → 12,000 tonnes of aluminium saved each year
- Better durability (1 extra year)
  → 100,000 tonnes CO_2eq saved

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