



Carbon Footprint Studies on Waterborne Paints and the Current Situation for European Carbon Border Adjustment Mechanism

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European Green Deal

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Climate change and environmental degradation are an existential threat to Europe and the world. EU countries are committed to achieving climate neutrality by 2050, delivering on the commitments under the Paris Agreement. The European Green Deal is the EU's strategy for reaching the 2050 goal.

The European Commission has adopted a set of proposals to make the EU's climate, energy, transport and taxation **policies fit for reducing net greenhouse gas emissions by at least 55% by 2030**, compared to 1990 levels.

At least 55%

net emissions cut by 2030

Climate Neutral

Net zero emissions by 2050



CO₂ emitted > CO₂ can be absorbed

GLOBAL WARMING

How to balance these emissions?

**By reducing CO₂ we emit,
through**

- More renewable energy
- More energy efficiency
- Cleaner transport
- Greener farming
- Circular economy

**While compensating the
emissions we can't avoid, by**

- Better managing our forests
- Protecting our ecosystem
- Investing innovation and research

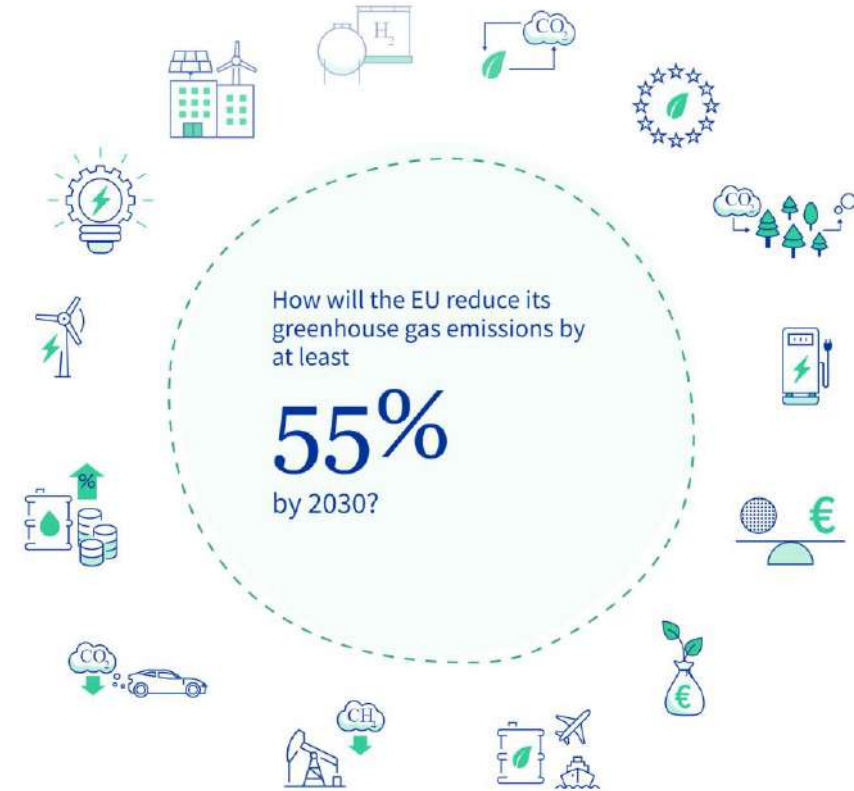
Fit for 55 Package

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The Fit for 55 package is a **set of proposals to revise and update EU legislation** and to put in place new initiatives with the aim of ensuring that EU policies are into line with the climate goals agreed by the Council and the European Parliament.

The package of proposals aims at providing a coherent and balanced framework for reaching the EU's climate objectives, which:

- ensures a just and socially fair transition
- maintains and strengthens innovation and competitiveness of EU industry while ensuring a level playing field
- underpins the EU's position as leading the way in the global fight against climate change



Fit for 55 - Commission Proposals

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EU Emissions Trading System (ETS) reform



Carbon Border Adjustment Mechanism (CBAM)



New EU Emissions Trading System for building and road transport fuels



Renewable Energy Directive



Social Climate Fund



Energy Efficiency Directive



Effort Sharing Regulation



Alternative Fuels Infrastructure Regulation (AFIR)



Regulation on Land Use, Forestry and Agriculture (LULUCF)



ReFuel EU Aviation Regulation



CO2 emissions standards for cars and vans



FuelEU Maritime Regulation

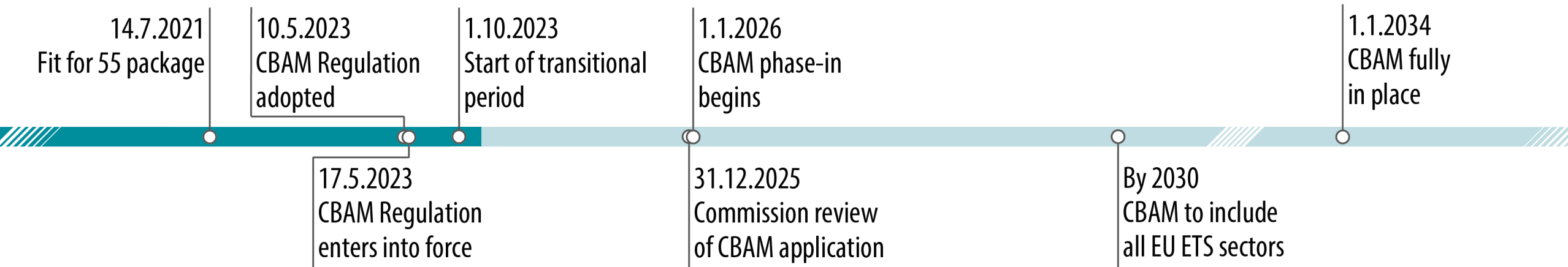




Carbon Border Adjustment Mechanism (CBAM)

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The [CBAM Regulation](#) aims to prevent carbon leakage while ensuring the effectiveness of EU climate policy. In addition, the CBAM could incentivise third-country governments to put in place greener policies, and third-country producers to reduce their emissions.



CBAM – Sectors covered in the first phase

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iron and steel



cement



fertilisers



aluminium



hydrogen production



electricity

- In the first phase CBAM would cover sectors with high carbon emissions and high risk of carbon leakage.
- The regulation will also cover precursors and downstream products (products that are above and below in the value chain of the products covered by CBAM)
- Indirect emissions would also be included in the regulation in a well-circumscribed manner.
- In the future the scope of CBAM is expected to extend to more sectors.

How does carbon leakage occur?

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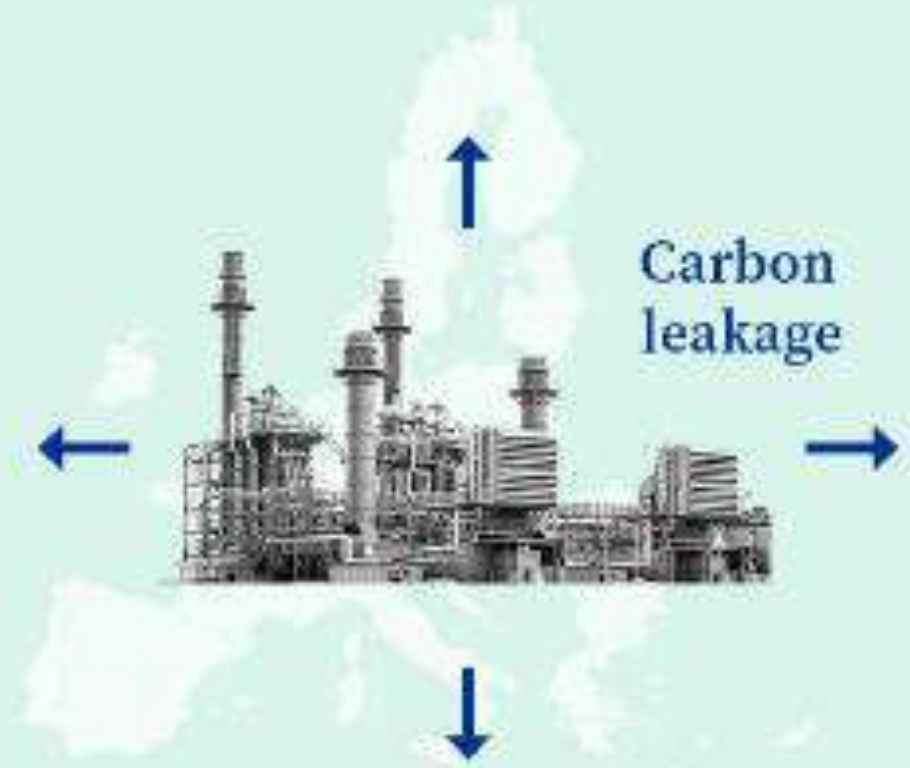


Carbon Leakage

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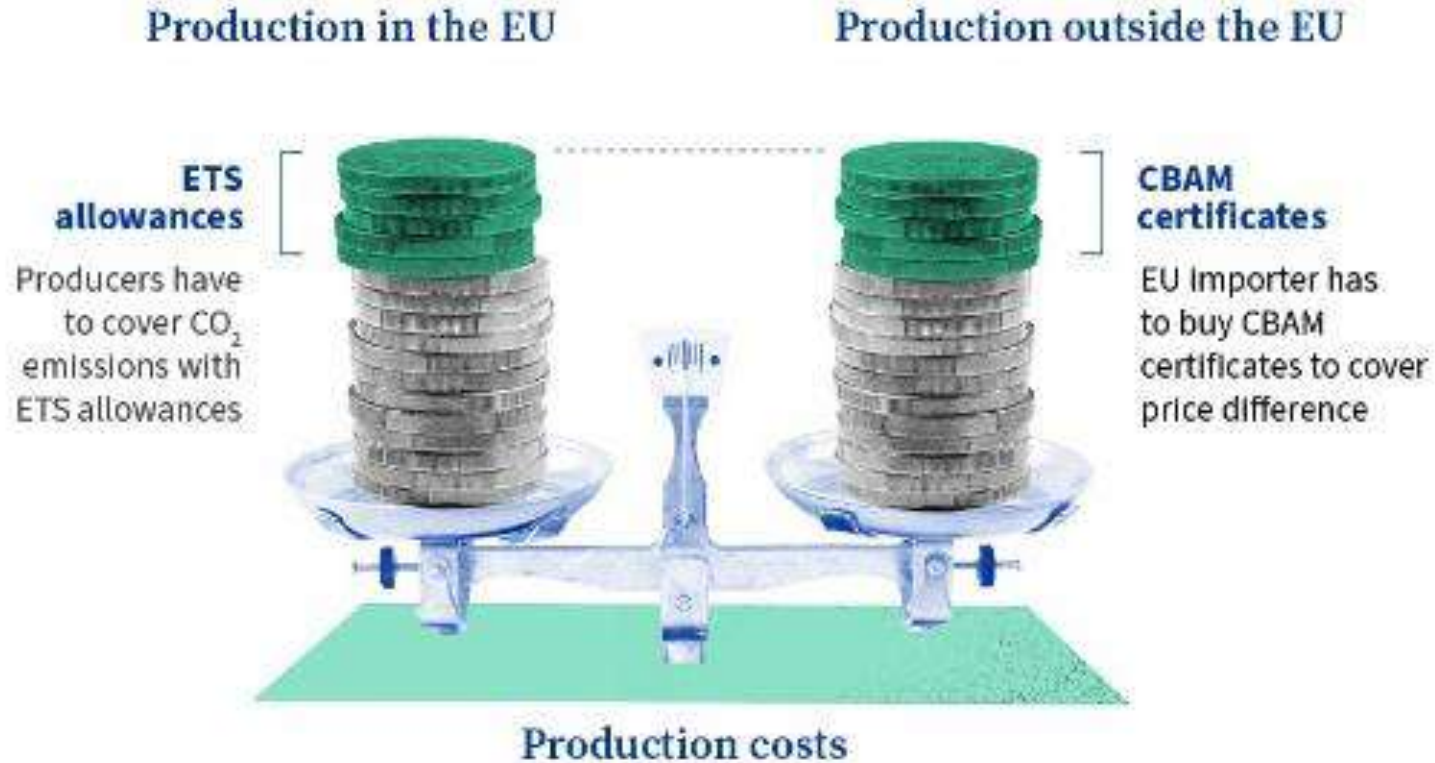
Result:

- Carbon-intensive production could move to countries with less strict climate policy.
- Imported products could have price advantage at the expense of the environment.



How will CBAM work?

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Potential Impact of the Carbon Border Adjustment Mechanism on the Turkish Economy

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As the EU's sixth largest trading partner, Türkiye is expected to face rising costs as a result of the implementation of the mechanism, potentially impacting competitiveness and resulting in short-term repercussions on GDP growth and employment. As such, the CBAM introduces material risks to the Turkish economy, and both the government and industry need to consider taking adequate actions to manage this exposure accordingly.

- The potential CBAM costs could reach EUR 2.5 billion per year under a CBAM certificate price of €150/tCO₂e by 2032
 - By implementing a domestic ETS, Türkiye can reduce the economic impacts of CBAM and cost-effectively reduce national GHG emissions
 - Adopting a domestic carbon price can, in addition to mitigating CBAM impacts, offer Türkiye broader social and economic benefits while accelerating the country's overall decarbonisation
- Carbon pricing can generate significant revenues for Türkiye
 - Building a supporting policy framework is essential to making carbon pricing work

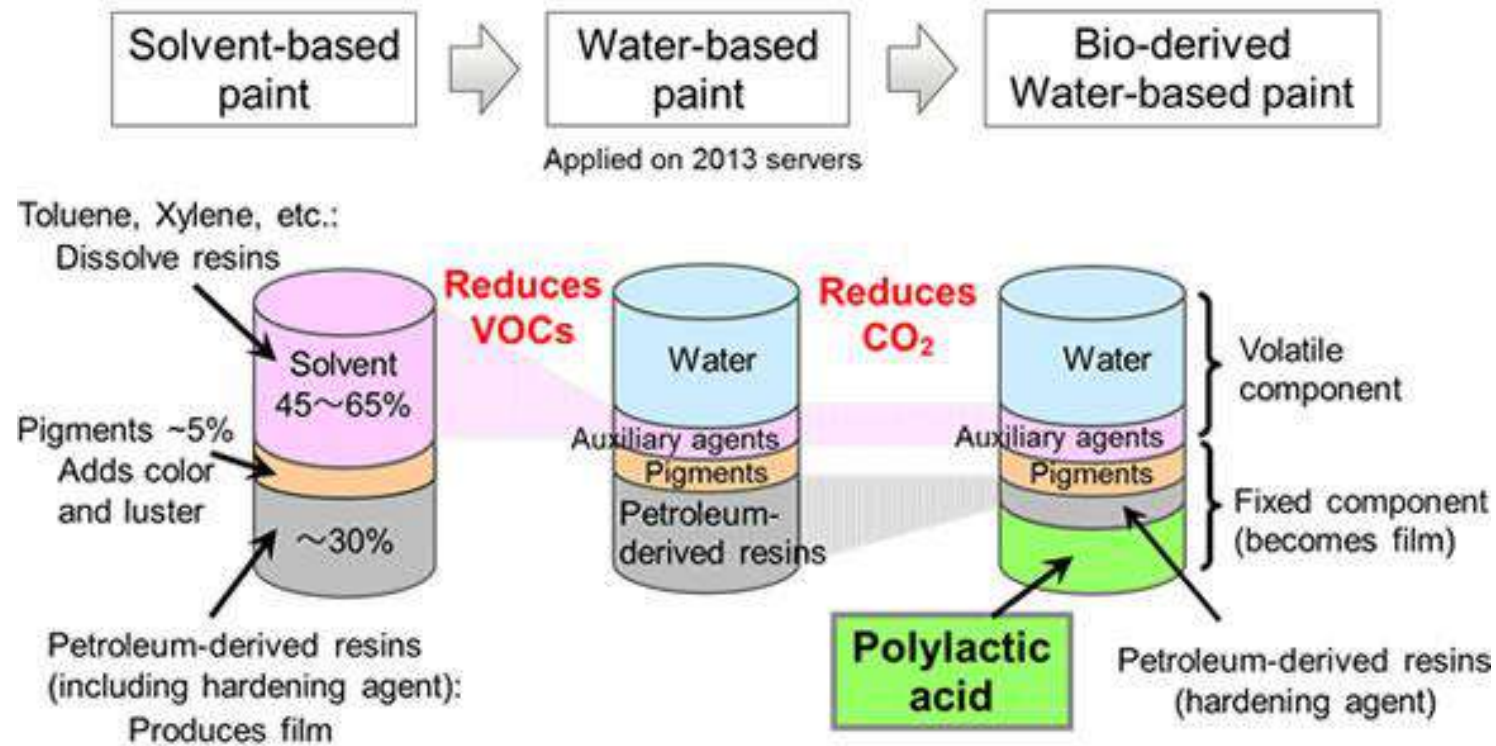
CBAM ultimately presents an opportunity for Türkiye



What about paint &
coatings sector?

Carbon Emission Sources of Waterborne Paints

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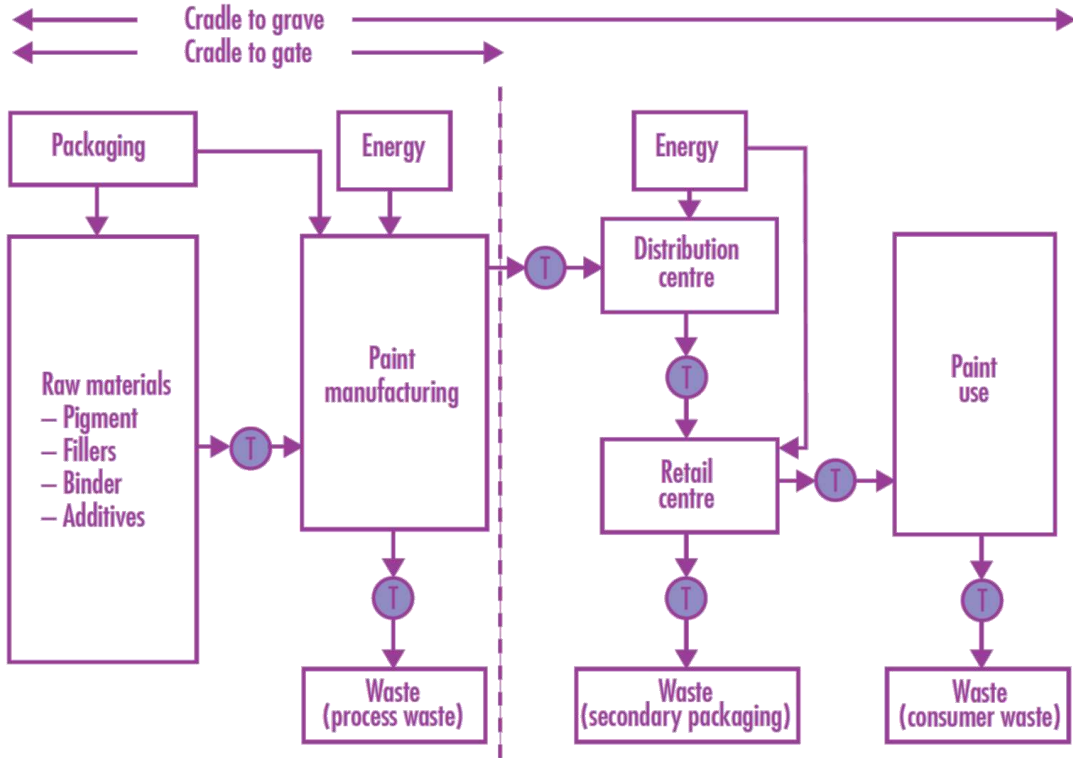


Fujitsu's research on paints applied on information and communication technology (ICT) equipments

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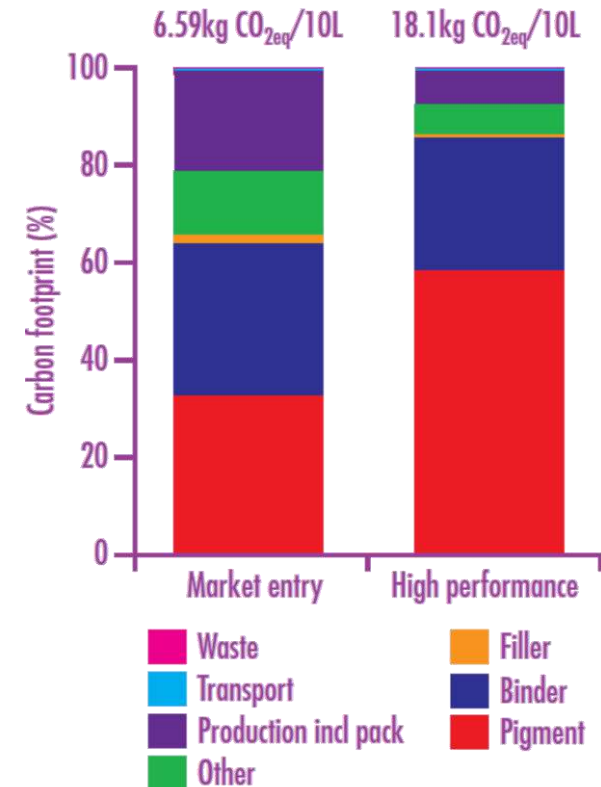
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An Example: Carbon footprint of market entry and high performance water-based interior wall paints



Ingredients	Market entry paint (%)	High-performance paint (%)
Pigment	5	25
Binder	10	25
Filler	25	10
Others (incl water)	60	40

The carbon footprint is strongly influenced by the composition of the paint with **the pigment and the binder contributing more than 60% and 80% of the impact for the ME and HP paints, respectively.**

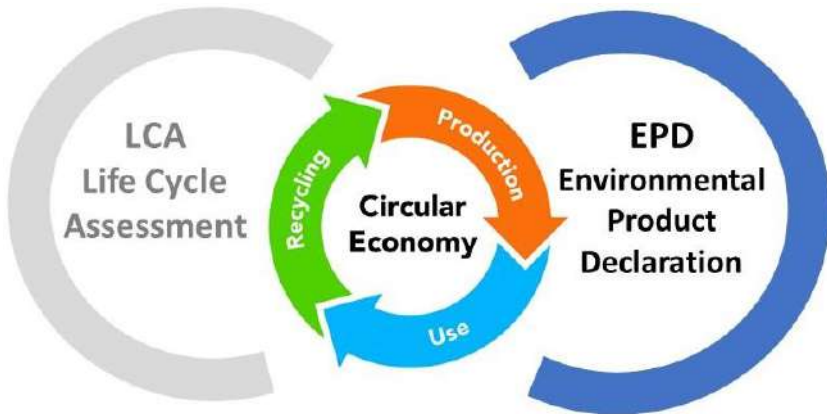


Source: Stichnothe et al., Estimating the carbon footprint of paints: some important considerations, Surface Coatings International, Issue 2011/3, pg. 108-114.

Importance of Life Cycle Analyses (LCAs) and Environmental Product Declarations (EPDs)

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Environmental Product Declarations (EPDs) are technical documents that demonstrate the environmental impacts of a product or a service following the ISO 14025 Type III Environmental Declarations and the guidelines laid down by EPD Operator and Product Category . The preparation of an EPD is based on the ISO 14010-44 Life Cycle Assessment standard and serves as the labelling system to identify the environmental impacts of the relevant product or service. EPDs are prepared with the information provided by the manufacturer and cover information about the manufacturer, the product and its environmental impacts.



In this context, determining the environmental impact of products through life cycle analyses and environmental product declarations is the first step towards net zero carbon emissions.

EPDs - Paints and Coatings

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Carbon Footprint Reduction Strategies for Waterborne Paints

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Sustainable alternatives to traditional architectural, decorative, industrial and automotive coatings are increasingly being **sought by consumers** and **legislatively mandated by governments** around the world. Coating manufacturers must carefully plan and proactively manage their **transition to environmental friendly coatings**.



The increased use of **naturally-derived raw materials** in the binder component of coatings can improve the sustainability credentials of environmentally friendly paints and coatings. Consumers have a growing preference for **products formulated with bio-based materials** that are perceived as safer and more environment-friendly.

- **Low Emission Alternatives of Raw Materials**
- **Increasing Bio-renewable Content in Coatings Raw Materials**
- **Innovative Biobased Raw Materials for Coatings**
- **Reducing Energy Usage in Manufacturing or Application**
- **Replacement of Harmful Materials for Increased Protection**
- **Reducing VOCs to improve indoor and outdoor air quality**
- **Improving the Performance of Low-VOC Coatings**

painti**stanbul**
TURKCOAT
CONGRESS

Thank You!

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