

A hand is shown from the bottom, cupping a small amount of dark soil. A young green plant with several leaves is growing out of the soil. The background is a soft, out-of-focus green, suggesting a natural, outdoor setting. The overall image conveys a message of environmental care and sustainable growth.

ARKEMA

3 key points about **Mass Balance** solutions

Accelerate the shift towards more circular solutions

THE CHALLENGE OF REPLACING FOSSIL FEEDSTOCKS!

Replacing virgin fossil feedstocks while keeping the same high level of performance is a crucial step to **reduce CO₂ emissions** linked to a product.

Several methods exist to support this shift.

Alongside the segregated model, **mass balance approach** allows industries to **gradually shift towards more sustainable alternatives.**

1- WHAT IS MASS BALANCE?

The principle of balancing inputs and outputs to track material has been a

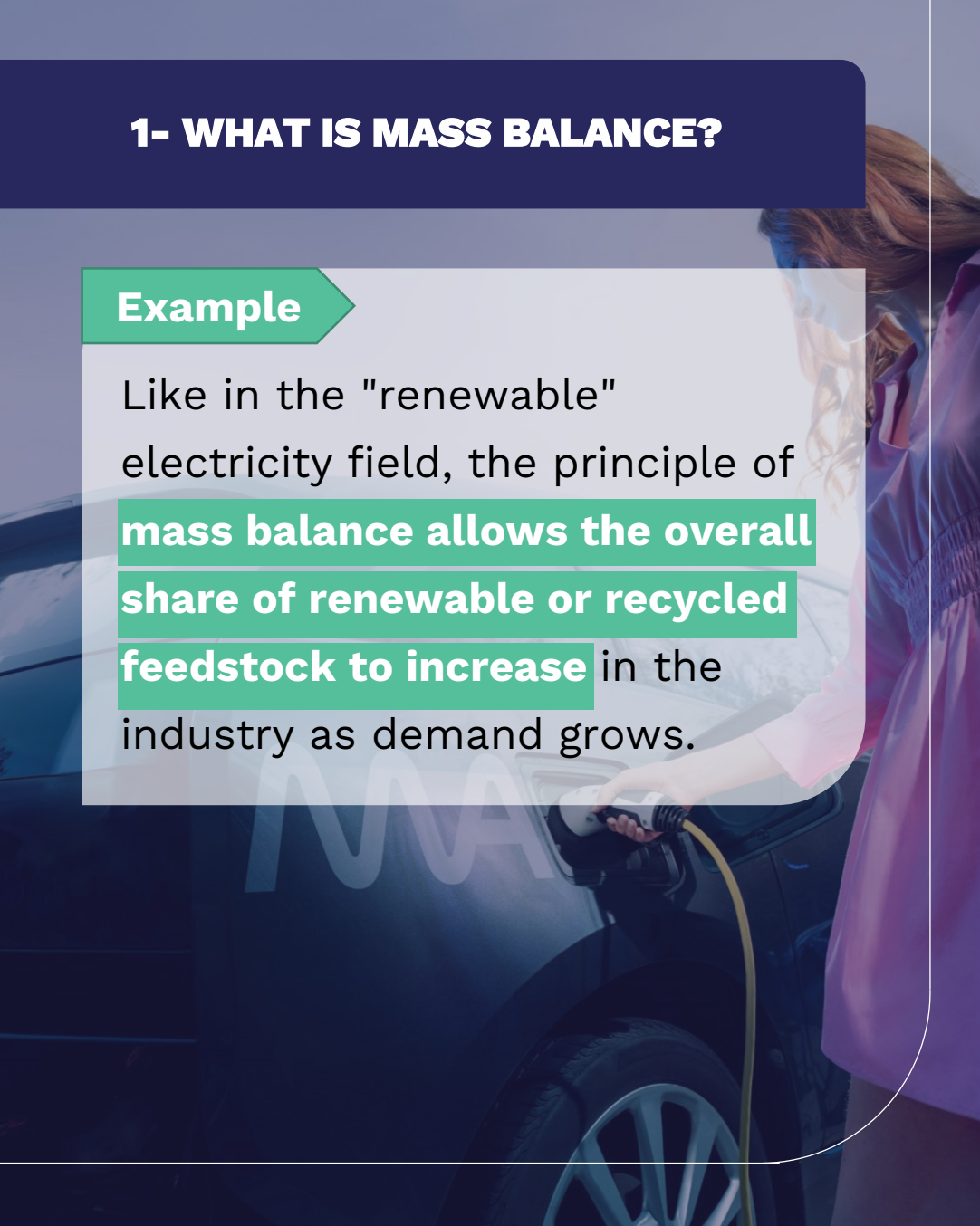
fundamental concept for a long time.

In the last decade, the concept of **mass balance has gained increased attention** in the field of renewable energy and **more recently in the field of circular materials.**

1- WHAT IS MASS BALANCE?

Example

Like in the "renewable" electricity field, the principle of **mass balance allows the overall share of renewable or recycled feedstock to increase** in the industry as demand grows.

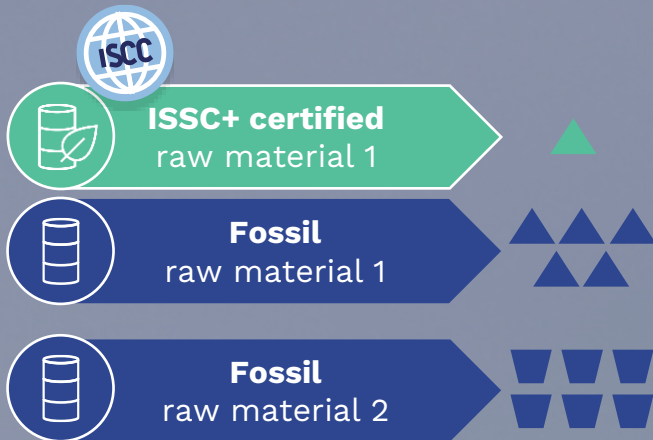


2- HOW DOES IT WORK?

STEP 1

In this example, output material is produced with 50% of raw material 1 + 50% raw material 2.

At the start of the chain, we **substitute part of fossil raw material 1 by 100% bio-attributed content.**



INPUTS

PRODUCT

2- HOW DOES IT WORK?

STEP 2

Both feedstocks are processed
in the same existing assets.

The quantity of bio-based
content **is segregated by
bookkeeping**

Segregated in bookkeeping



PRODUCTION IN EXISTING CERTIFIED PLANTS

Fin
Pro

2- HOW DOES IT WORK?

STEP 3

At the end, there is only 1 final product, but **only a part of the production can be considered bio-attributed** and benefit from ISCC+ certification.



OUTPUTS

3- OPPORTUNITY TO SUPPORT PRODUCT DIFFERENTIATION

Mass Balance not only enable reduction of GHG emissions, it also creates opportunities for **product differentiation**. By highlighting the reduced environmental impact, **brand owners can offer consumers a tangible benefit beyond the core product functionality.**



“

Being part of a mass balance certified supply chain, allows us to immediately reduce our own scope 3 emissions as well as the one from our customers while keeping the exact same level of performance.

The framework of certification constraints all stakeholders to follow the same rules and enables a high level of traceability and transparency all along the supply chain. ”

Hélène Pernot - Head of Arkema
Coating Solutions Sustainable offer

A pair of hands is shown from the bottom, cupping a small mound of dark brown soil. A young green plant with three leaves is growing out of the soil. The background is a soft, out-of-focus green, suggesting a natural, outdoor setting. The overall image conveys a sense of nurturing and environmental care.

Know more about
Mass Balance approach?
Visit our website **[arkema.com](https://www.arkema.com)**