



Trustworthy mass balance

- a key to sustainable transformation

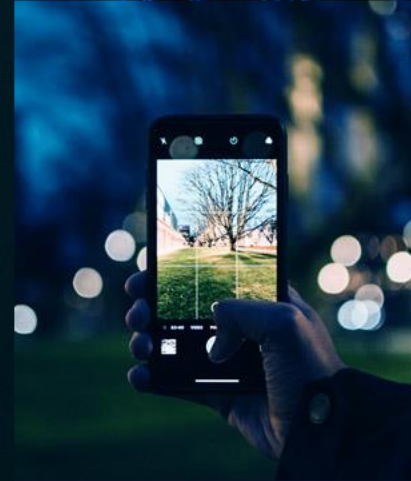
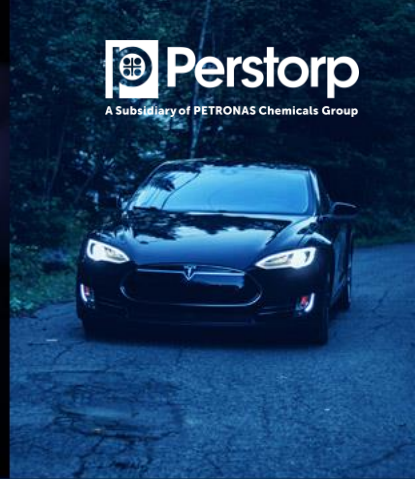
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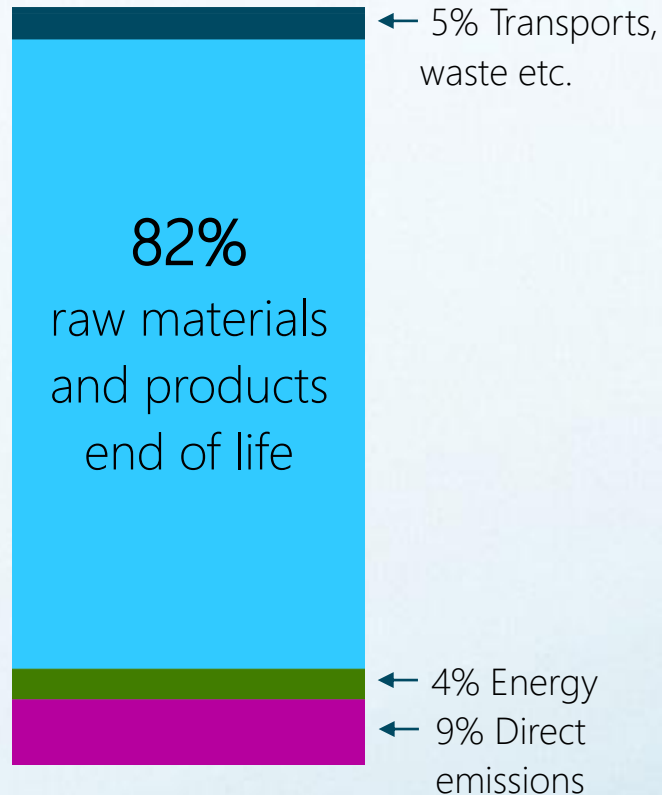
96% of
manufactured goods
rely on chemicals

Chemistry is the basic science of molecules
– the building blocks of all materials –



Raw materials – the largest footprint

The transition of the chemical industry goes beyond electrification and CCS



The transition of raw materials and circular solutions for products are essential to the transition of our society.

Shifting raw materials to:

- Biobased
- Recycled
- CO₂-based (via CCU)

*<https://www.ikea.com/global/en/our-business/people-planet/value-chain-climate-footprint/>

The Pro-Environment products roadmap

Shifted raw materials based on mass balance and reduced carbon footprint

Same chemical products but other raw material origin, based on mass balance



2010

Perstorp launch the first renewable mass balanced chemical product – Voxtar™



2017-2030

Expansion of Pro-Environment production to more products and all Perstorp production sites globally.



2027

Driving production and sourcing of recycled/renewable raw materials for the transition.

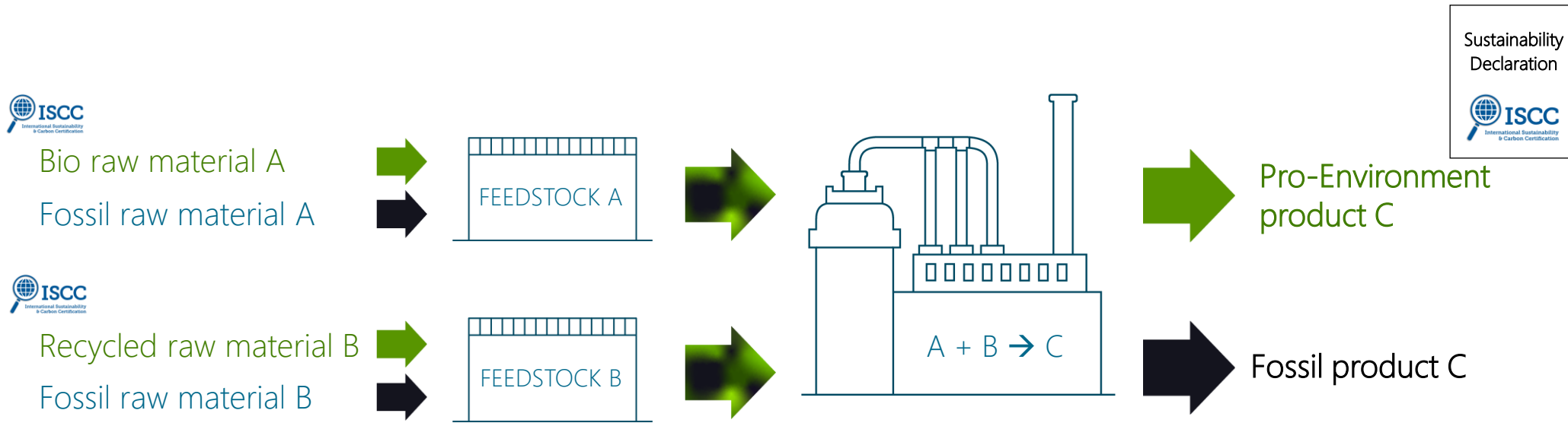
Perstorp experience from applying mass balance for 10+ years

- Acceptance for mass balance comes when you can show the real connection from the raw materials to the product.
- Brand owners require chemical and physical traceability for credibility and making claims.
- Certain sectors like the building industry is not accepting mass balance today due to flexible systems.
- Different mass balance methods are applied in the market today - leading to difficulty for brand owners to evaluate and unfair competition.



How do we work with the transition of material products?

Applying a traceable mass balance with chemical and physical traceability



Raw materials transported to the site where they are used. No transfer of credits within the company.

The raw materials can only replace their own share of the product.

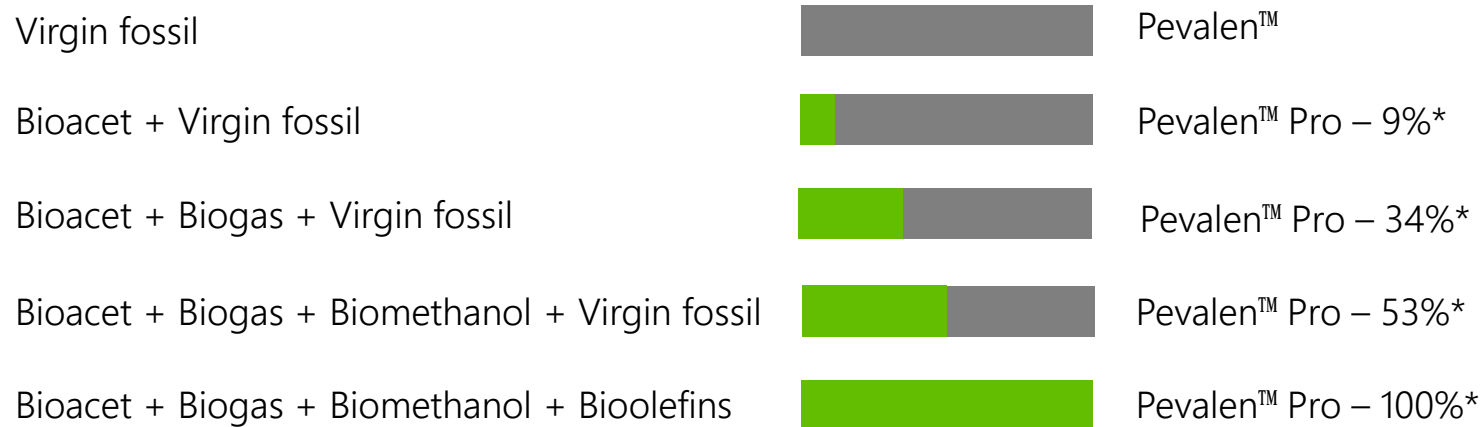
The raw materials are used in the process unit where the product is being produced.

There is a possibility of finding sustainable molecules in the end-product.

Chemical traceability for Pevalen™ Pro

A phthalate free plasticizer – non virgin fossil and with reduced carbon footprint

Applying chemical traceability without overcompensation



Applying chemical traceability with overcompensation

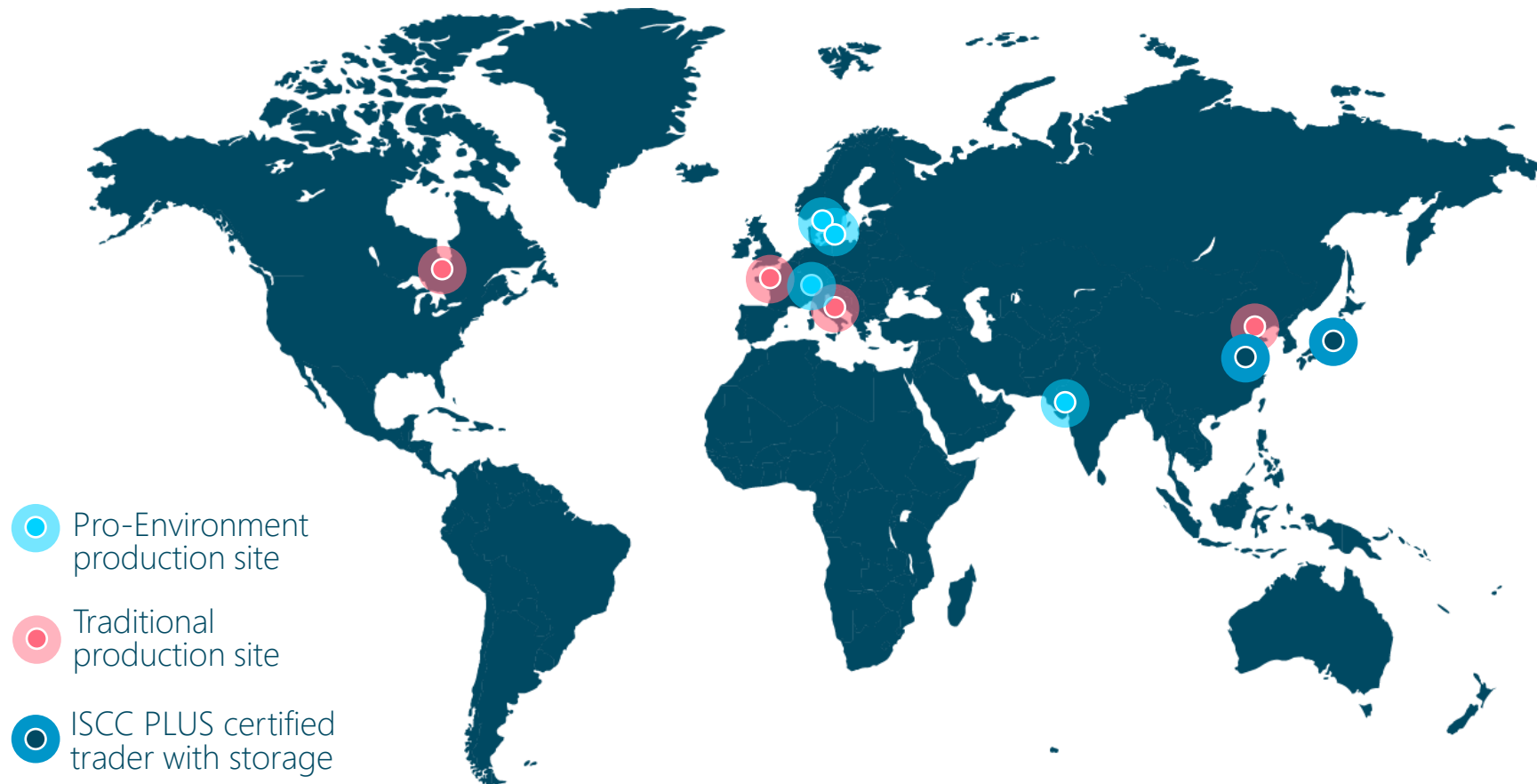


Applying no chemical traceability



Physical traceability for Perstorp

No credit transfer between sites → drives development and enables traceability



Driving transition together

With traceability through the value chain from feedstock to end-product

Our suppliers are also applying physical and chemical traceability
- otherwise, we could not claim that our products have that traceability and pass it on in the value chain.



IKEA, The LEGO Group, VELUX, Perstorp

EU decision on mass balance definition in the Single-use plastics directive

- **Mass balance is needed** as a step on the way to segregated recycled/renewable products.
- The EU mass balance definition in the SUP directive should be possible to apply in other feasible product categories as well.
- The EU mass balance definition should work for different types of feedstocks such as recycled, biobased, CO₂-based as well as for different types of industries and production processes.



→ A VERY IMPORTANT DECISION

→ JOINT PROPOSAL TO THE EU COMMISSION

Requirements from end users



- "Ensure chemical traceability."
- "Avoid multi site credit transfer inside a mass balance model"

"A certified chain of custody model always adds cost, important to verify that it brings also credibility and trust"



"Chemical and physical traceability are important mass balance requirements for materials for The LEGO Group."

"Traceability is needed along the entire value chain from raw material to end product."



"A credible and verifiable mass balance is an important stepping-stone to increase the volumes of recycled and renewable material, and we see physical and chemical connection between the input and output material in the MB model as crucial to ensure its credibility."



A Subsidiary of PETRONAS Chemicals Group