

Welcome to Future-Fit PVC

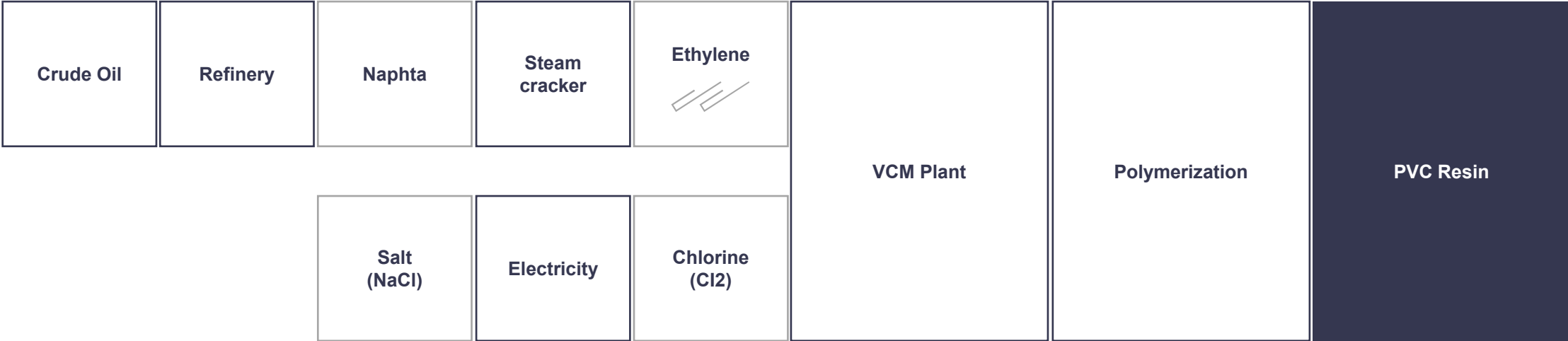


Our expertise, applied to the future

Vestolit is part of Orbia,
a community of companies bound
together by a shared purpose:
**to advance life around the
world**

Inside the Process

From fossil-based PVC

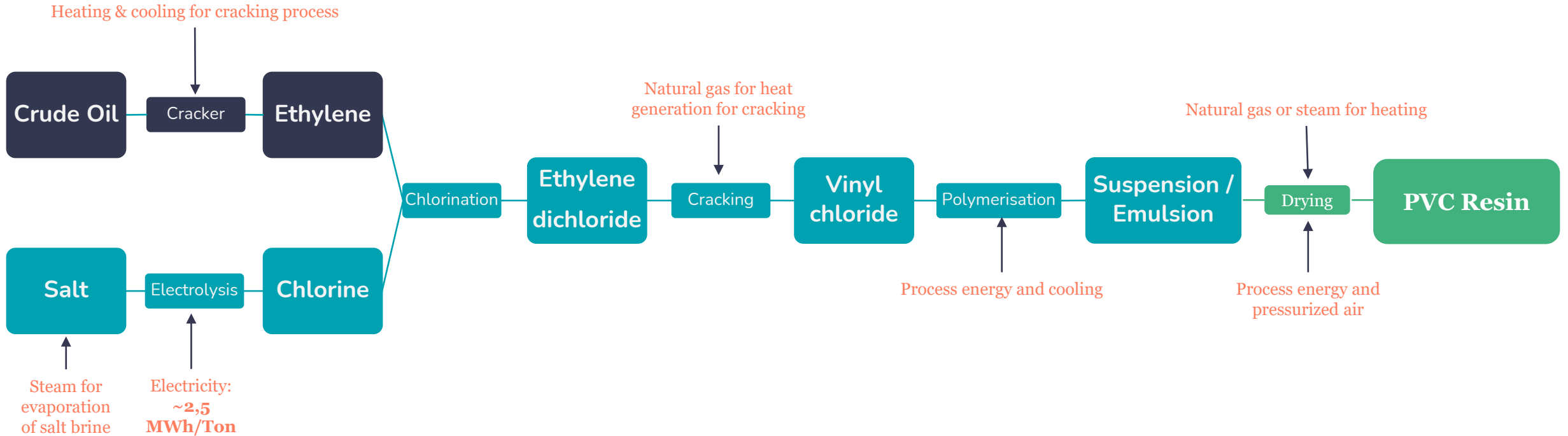


Using ethylene from fossil feedstock leads to a GWP of approximately 1.45.

Using chlorine from salt and electrical energy (2.5 – 3.5 MWh per ton of Chlorine; GWP per MWh: 0.08 – 0.77 in EU, Germany: 0,31)

The production of 1t PVC has the same effect on the global warming as the emission of 1.9 - 2.6t CO₂.

Energy consumption in PVC production



Electricity

~ 2 MWh / Ton



Natural Gas

~ 0,8 MWh / Ton

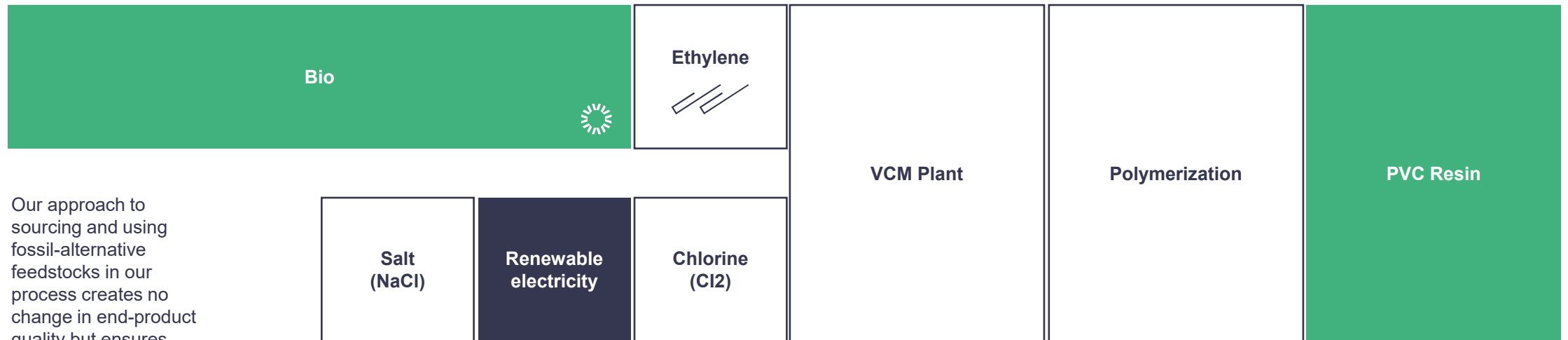


Other utilities

~ 2,2 MWh / Ton

Inside the Process

To Future-Fit PVC



Our approach to sourcing and using fossil-alternative feedstocks in our process creates no change in end-product quality but ensures that you reduce your carbon footprint, provable through LCA or EPC declarations.

A core source for today, for scale

Feedstock is oil extracted from plants or bio-mass, like rapeseed oil, or from the recycling of used bio-materials like used cooking oils.

Bio-attributed PVC, produced using non-food production vegetable oils

100% renewable energy use

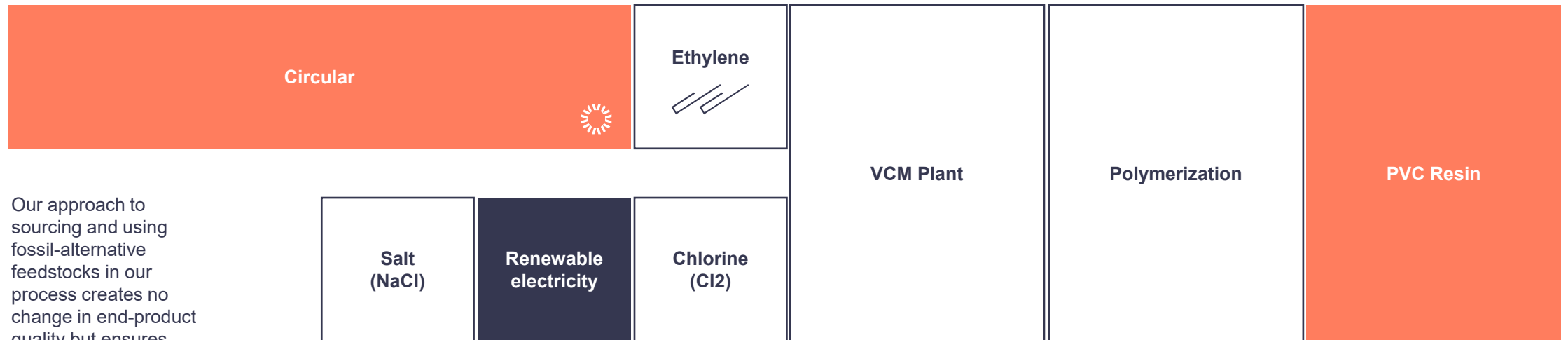
Mass balance production approach

ISCC+ certified

➤ More than 60% lower carbon emissions vs fossil feedstocks

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A growing source, aligned to recycling growth

Feedstock is pyrolysis oil obtained through chemical recycling of waste plastics.

Circular PVC, produced using pyrolysis oil from recycling post-consumer waste

Chemically recycled waste saves materials from landfill or incineration

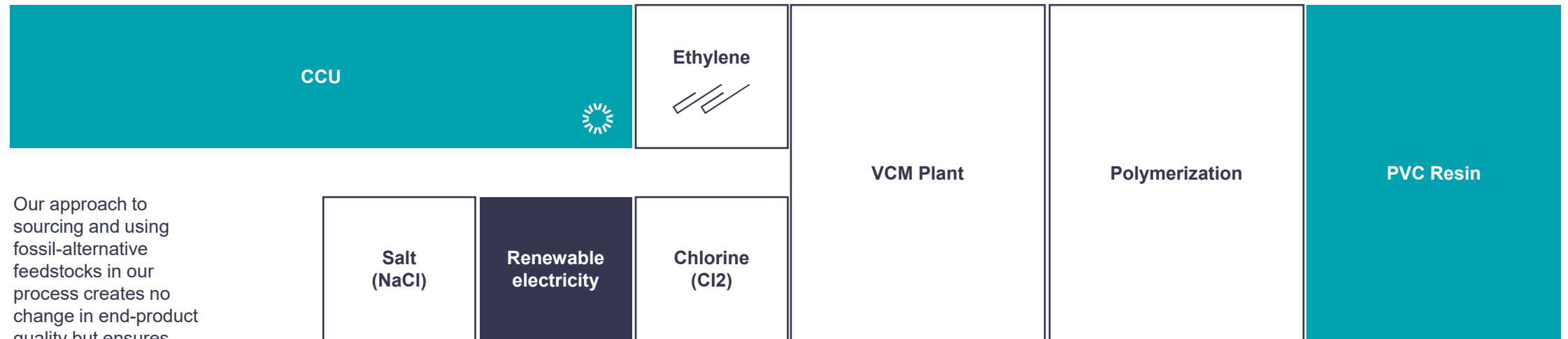
Mass balance production approach

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➤ **Moving PVC towards circular economy**

Inside the Process

To Future-Fit PVC



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A future prospect, requiring scaled technologies

Feedstock is atmospheric carbon, captured and converted to ethanol, using technology currently in its infancy, but uniquely avoids need for steam cracker to generate ethanol.

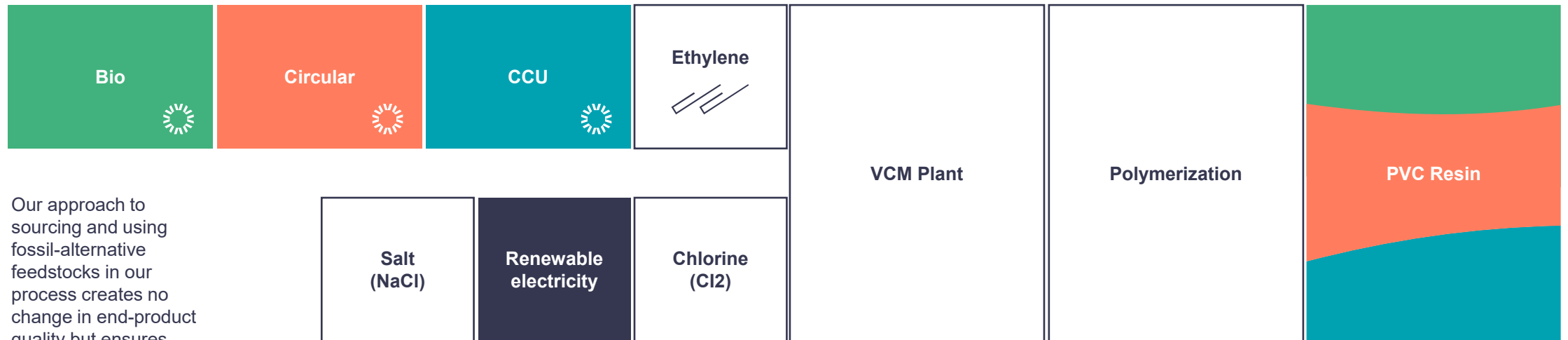
PVC produced from carbon capture from industrial off-gas
100% renewable energy in the production process

Mass balance production approach
ISCC+ certified

➤ **Pathway to carbon neutral production, making PVC a part of the solution to fight carbon emissions by utilizing it as a carbon sink**

Inside the Process

To Future-Fit PVC



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FUTURE-FIT BIO

Feedstock is oil extracted from plants or bio-mass, like rapeseed oil, or from the recycling of used bio-materials like used cooking oils.



FUTURE-FIT CIRCULAR

Feedstock is pyrolysis oil obtained through chemical recycling of waste plastics.

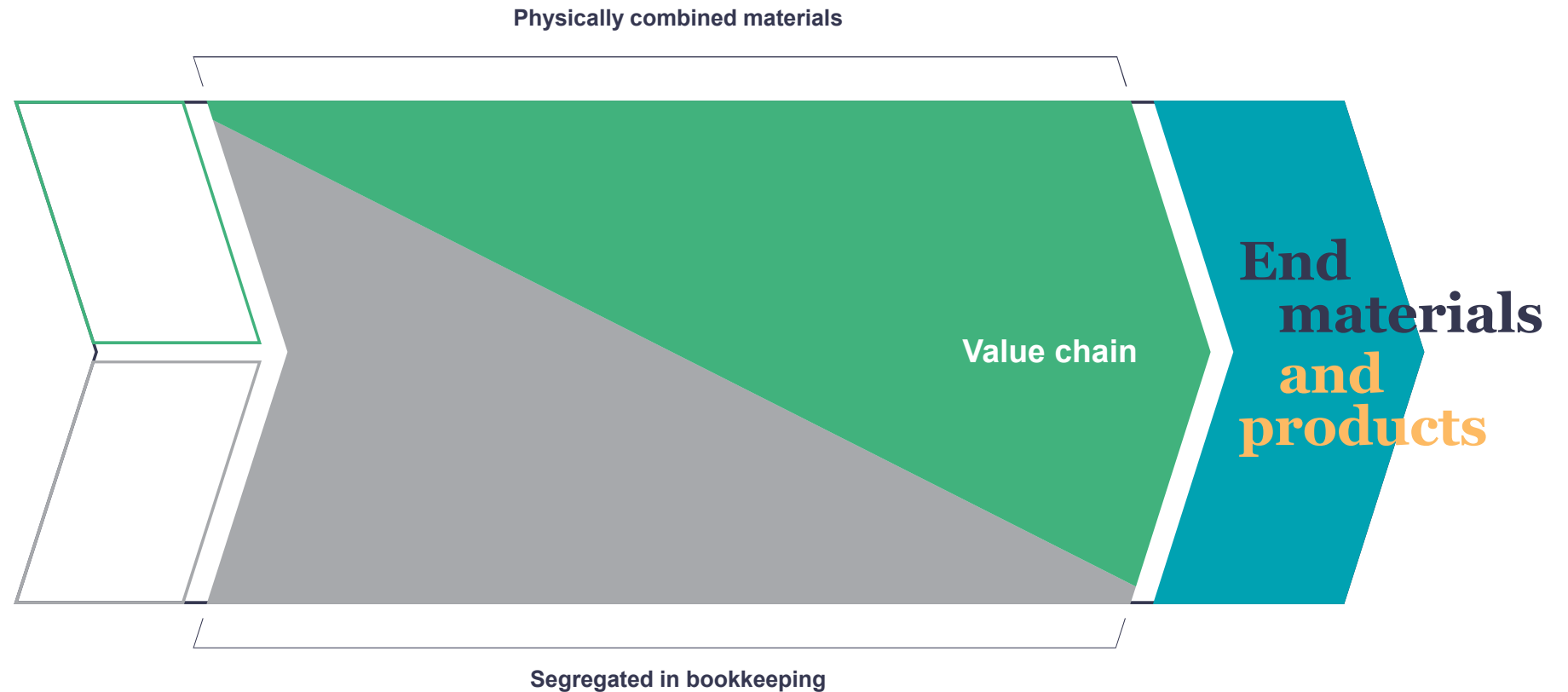


FUTURE-FIT CCU

Feedstock is atmospheric carbon, captured and converted to ethanol, using technology currently in its infancy, but uniquely avoids need for steam cracker to generate ethanol.

Using Mass Balance

With this approach, no change is needed to operation or production; it involves the combined use of both fossil and non-fossil feedstocks in the supply chain, tracked and certified throughout the process, meaning final products can be independently certified by ISCC+ as having employed sustainable feedstocks.



Using Mass Balance

The outcome and intention of Mass Balance is to allow our customers and us to facilitate greater defossilization over time.



Our solutions

We have an evolving portfolio of sustainable PVC solutions, ever-more effective at reducing carbon emissions associated with the production of quality resins

Let our deep expertise find the right solution to help you make sustainable progress.

Principles of our product range:

Always highest quality

No technical or functional loss vs fossil-feedstocks

Drop-in products, built for today and tomorrow

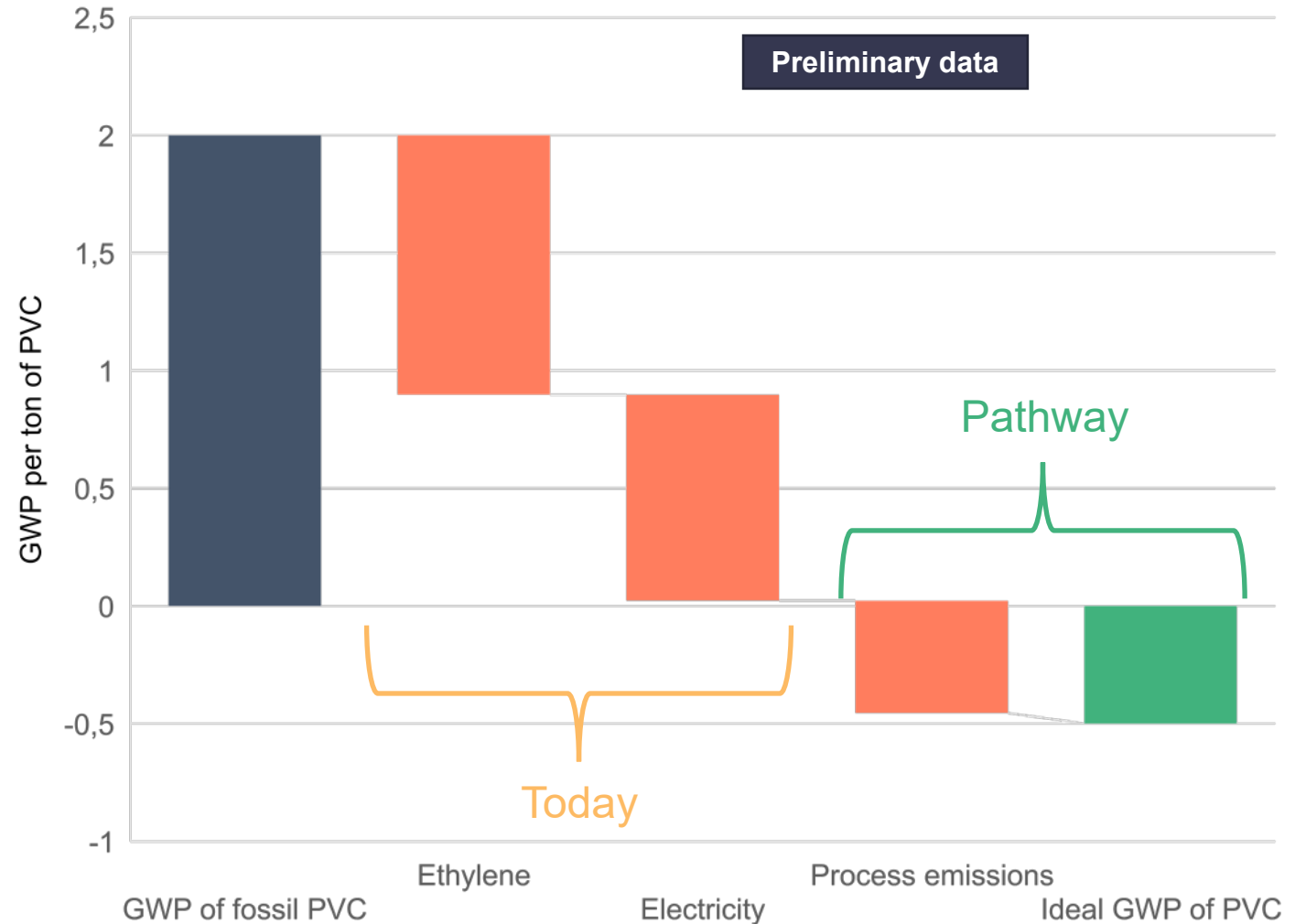
Independently certified

Can be adapted to your product needs

Outlook: From part of the problem to part of the solution

Outlook: Polymers as carbon storage

- ✓ Ethylene to become carbon negative utilizing CCU technologies and biogenic carbon content
- ✓ Electricity from renewable resources
- ⌚ Process energy requirements to be converted to carbon neutral alternatives (i.e. hydrogen replacing natural gas)
- ⌚ Economic barriers to be overcome



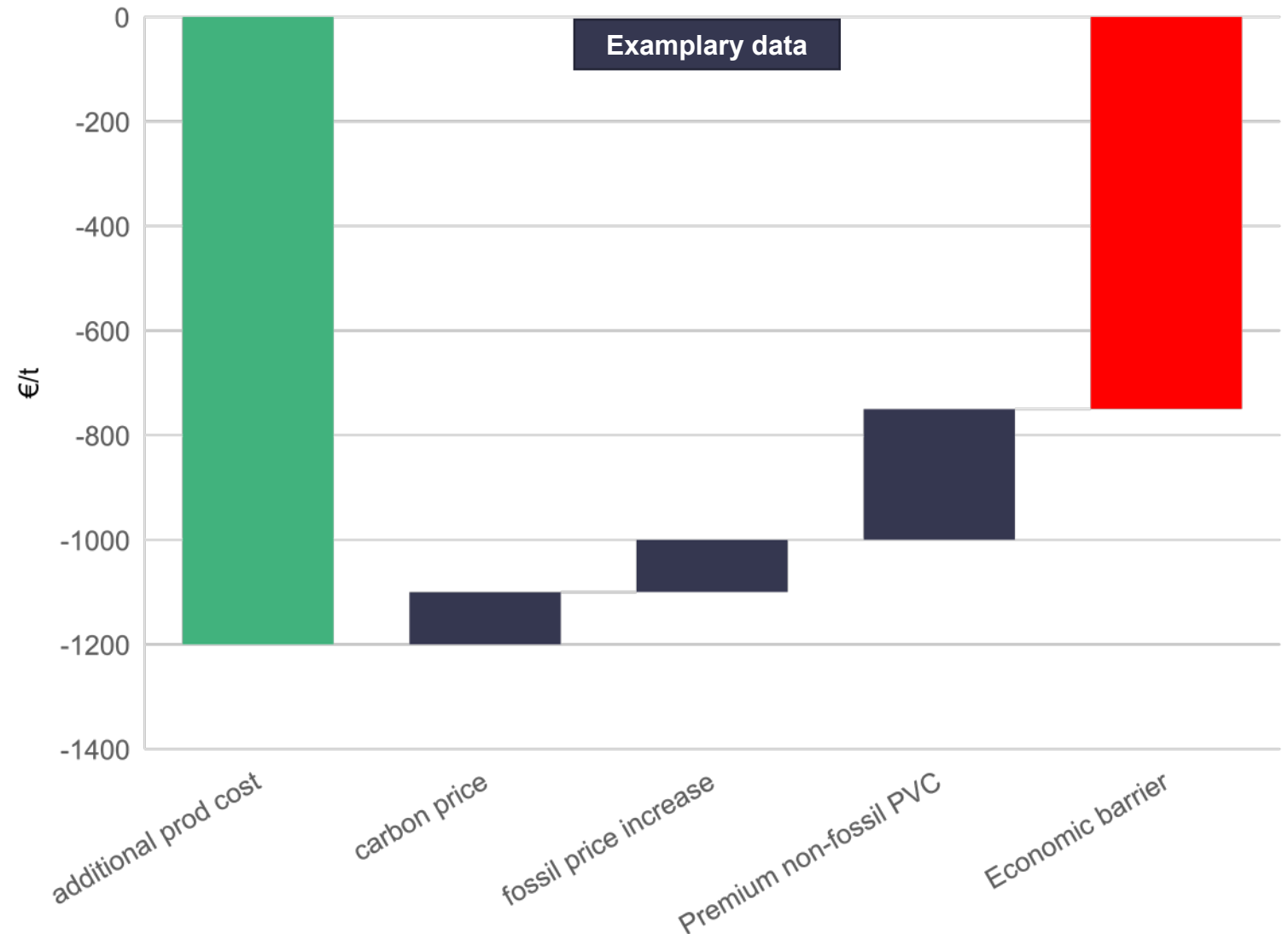
Economic barriers bigger than technological

Economic frame

- Higher prices for non-fossil PVC only accepted in niche applications so far
- Economic barrier to convert process

Main drivers for progress

- Consumer mindset
- Regulatory adjustments



Let's work together
to make **Future-Fit**
PVC work for you.

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