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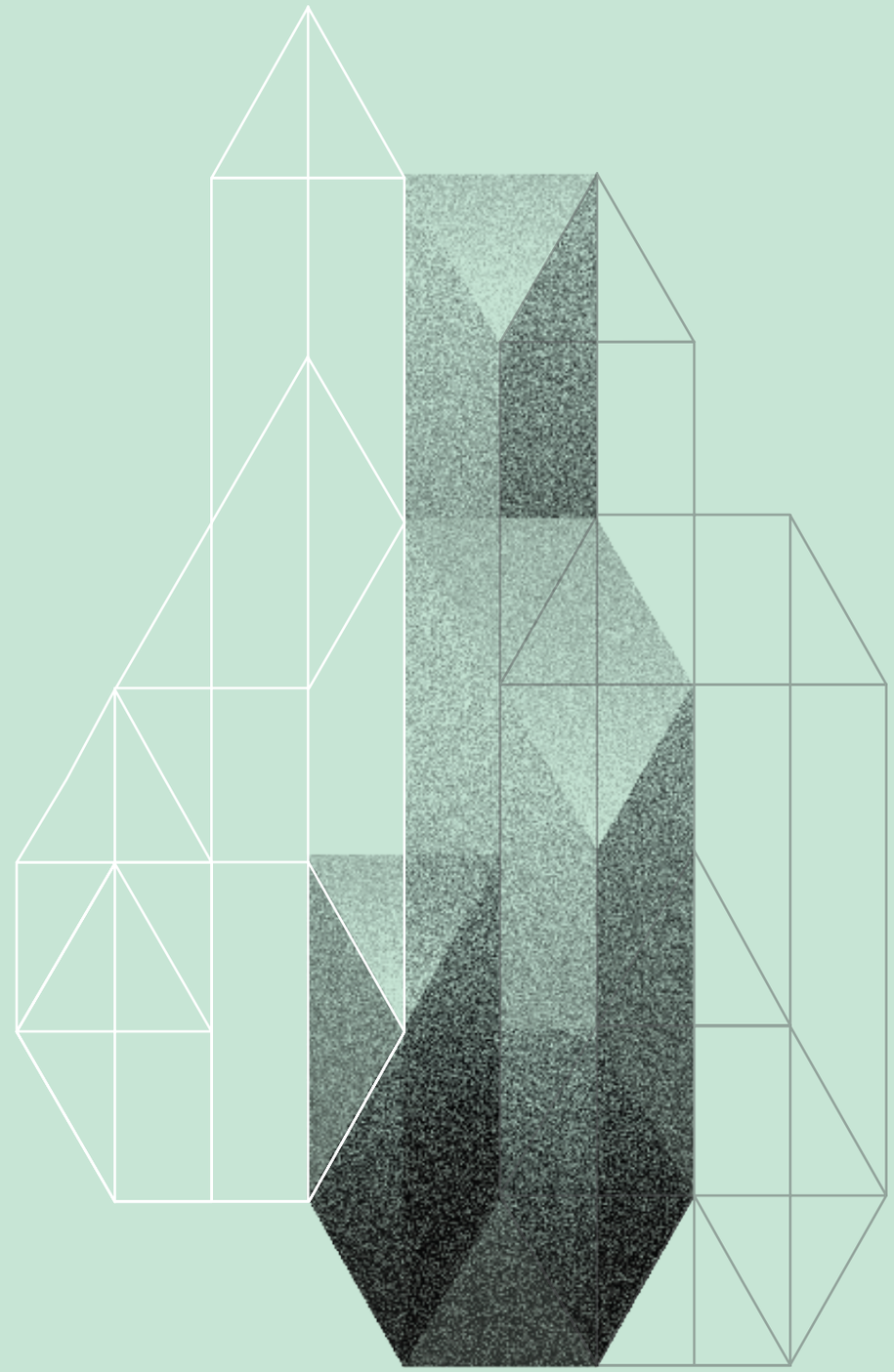
building materials from greenhouse gases



greenhous gases
are a problem

or

a material resource.

Column CO_2 Mixing Ratio (ppmv)

375 380 385 390 395

Column CO Burden (10^{18} molec cm^{-2})

0.0 1.5 3.0 4.5 6.0

the problem

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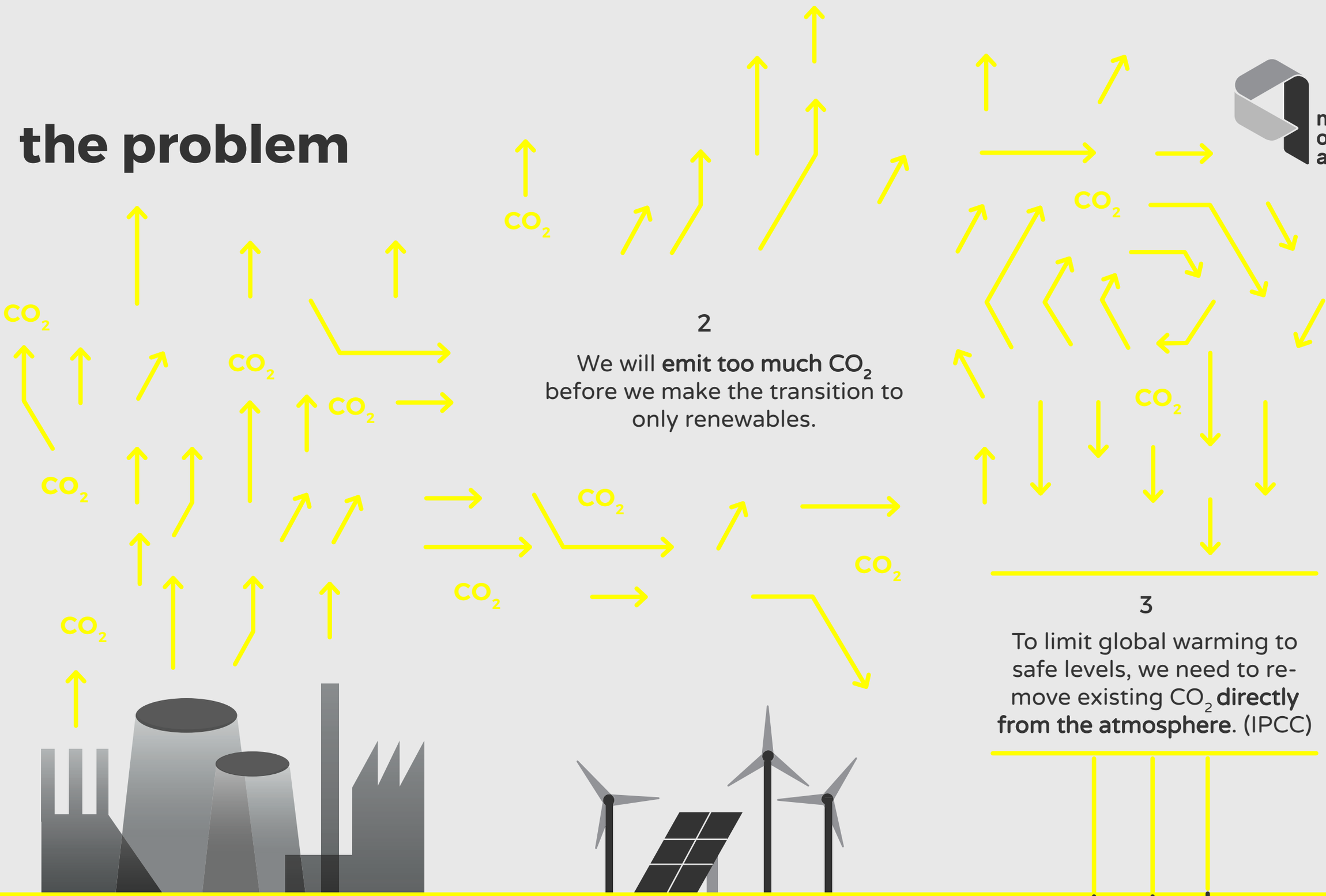


2

We will **emit too much CO_2** before we make the transition to only renewables.

3

To limit global warming to safe levels, we need to re-move existing CO_2 **directly from the atmosphere**. (IPCC)

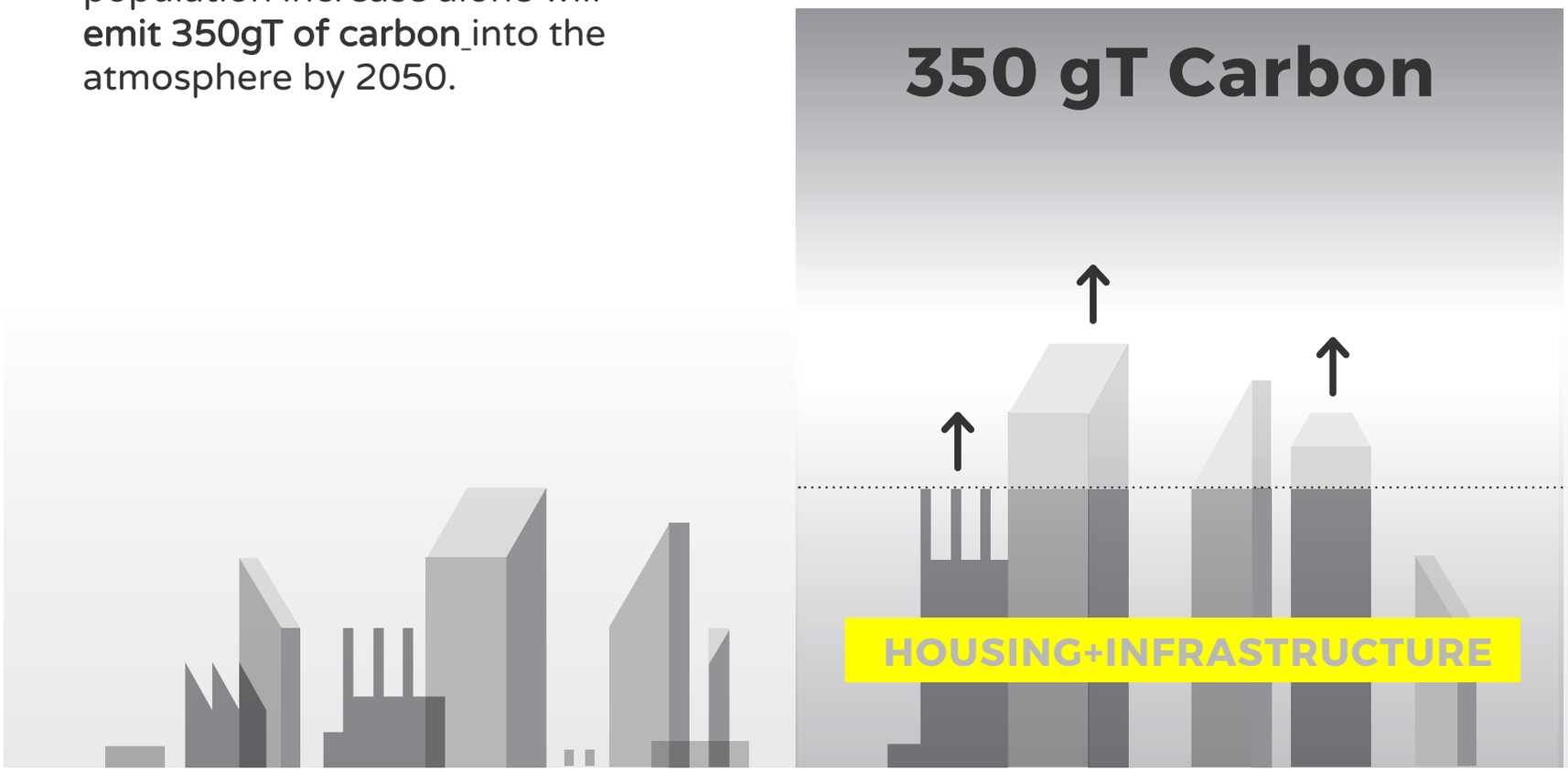
CO_2

1

Reducing CO_2 emissions alone is **not enough** to limit warming to 1.5C (COP21 target).

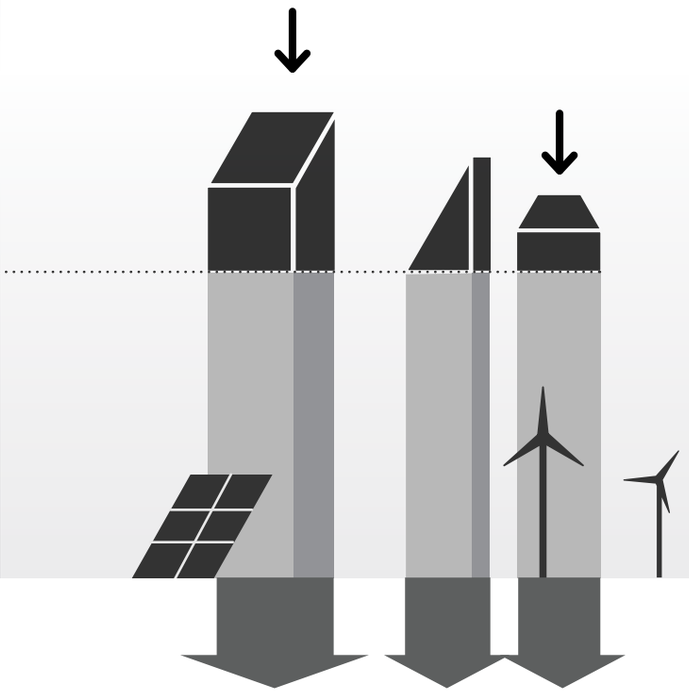
cities

In cities, housing our population increase alone will **emit 350gT of carbon** into the atmosphere by 2050.



OR

We build our cities with **carbon from the atmosphere**



present
7.5 bn people

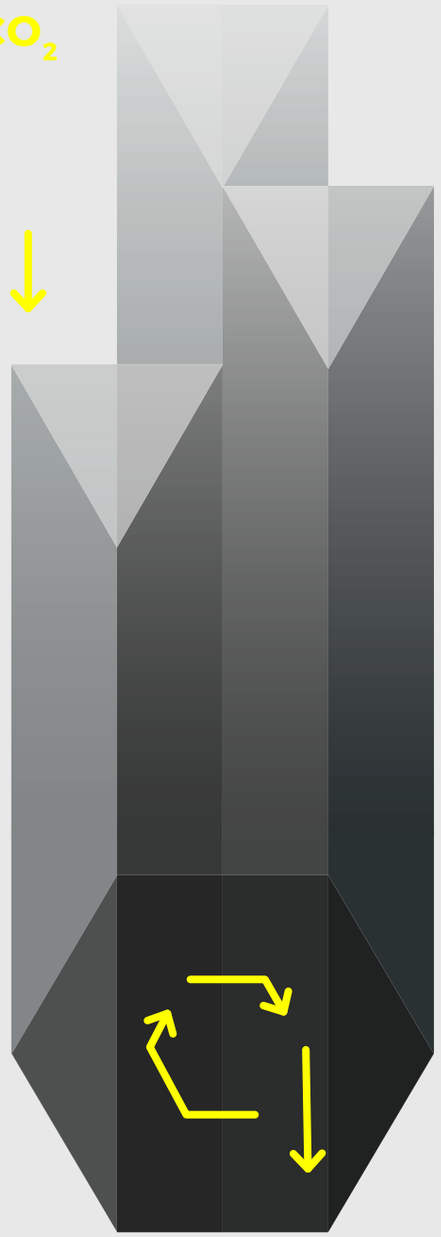
2050
9.7 bn people

carbon negative additive

- MADE OF AIR manufactures an additive made of **80% atmospheric carbon**

EMPLOYED IN

- **traditional building materials**, siginificantly lowering a building's carbon footprint



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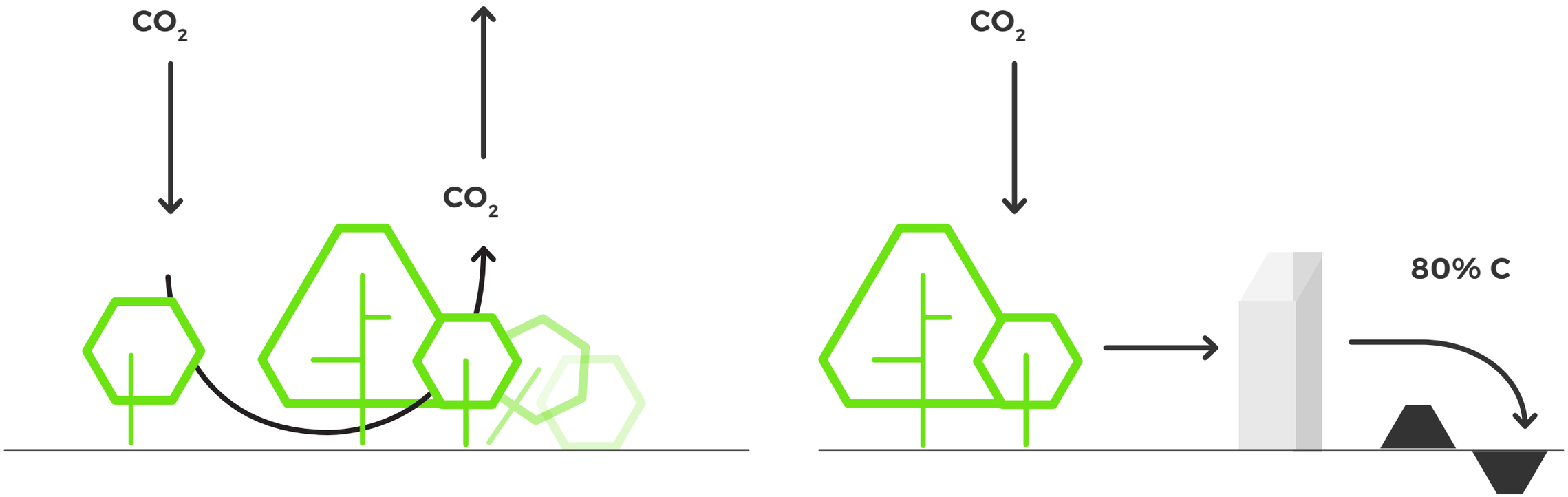
how it works



1

Plants capture CO_2 efficiently through photosynthesis.

2

But when plants die, CO_2 is released **back into the air**.

3

Controlled baking of biomass **converts CO_2 into carbon** and stabilizes it for millenia in a highly concentrated, solid

4

Incorporating a high % into compounds can yield a material with **negative CO_2 emissions.**

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vision

If we add just

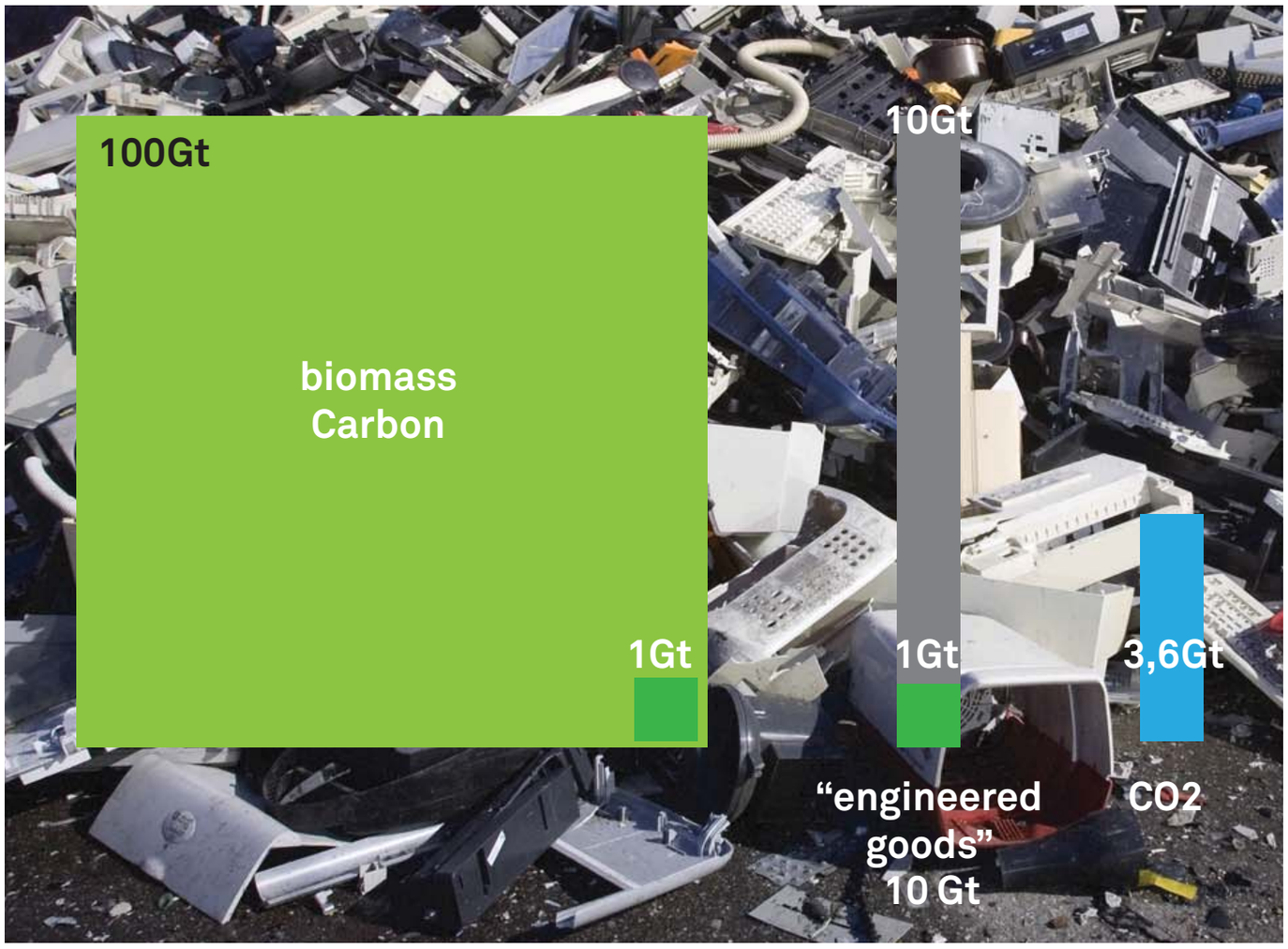
10%

of Made of Air
to all engineered goods,
we will remove

3.6Gt of CO_2

from the atmosphere per year.*

* IPCC: in order to reach the 2°C target by 2050, we need to reduce **2-10Gt CO_2 per year**.



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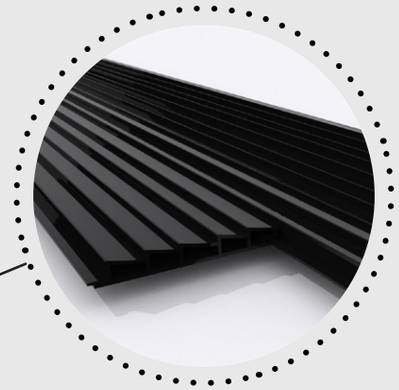
applications

As an additive, Made of Air can fill up to 40% in polymer comopounds and up to 20% in mineral compounds.

As a carbon negative polymer, Made of Air enables building materials to sequester 2kg CO_2 per kg.

polymers for injection moulded parts



extrusions for facades, decking

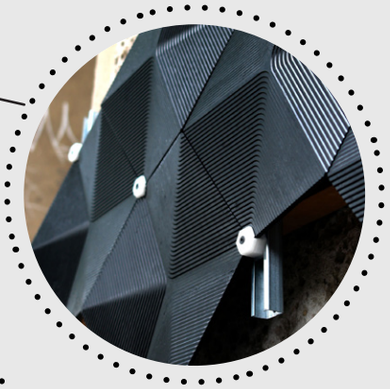
plasterboard

IP

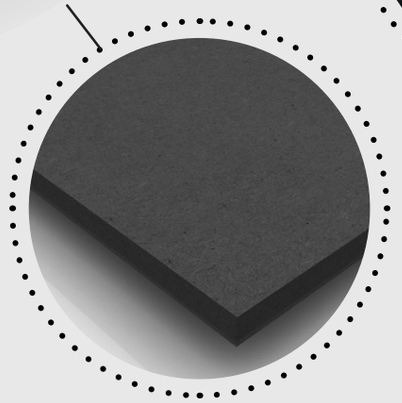
additives

carbon negative polymer

asphalt: bike paths, roads



compressed panels for facades



building boards

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incentive

policy is changing

- local governments are **active**
- energy and carbon footprint regulations are **happening**

consumer pressure (CSR)

- sustainability is a growth market
- 39% of all CO_2 emissions in the US are from **buildings**

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business model

1 kg*

€0.50

gross profit margin

50%

3 kg CO_2

from the air

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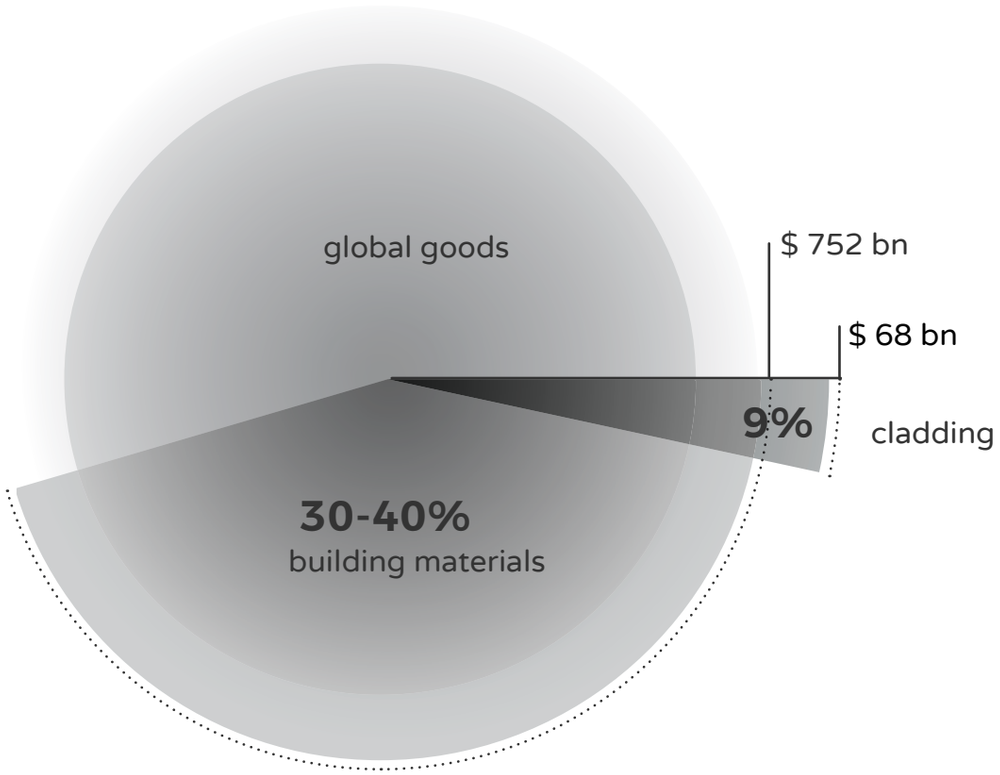
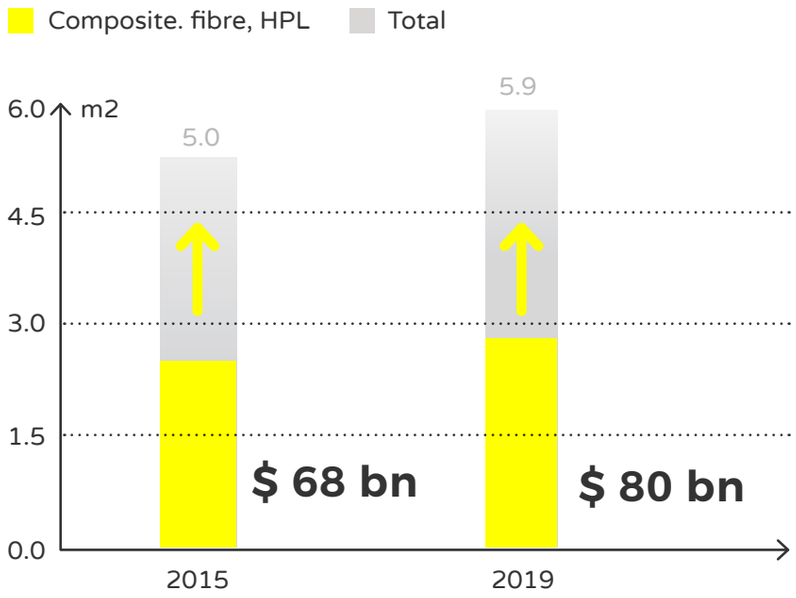
* Additive

market

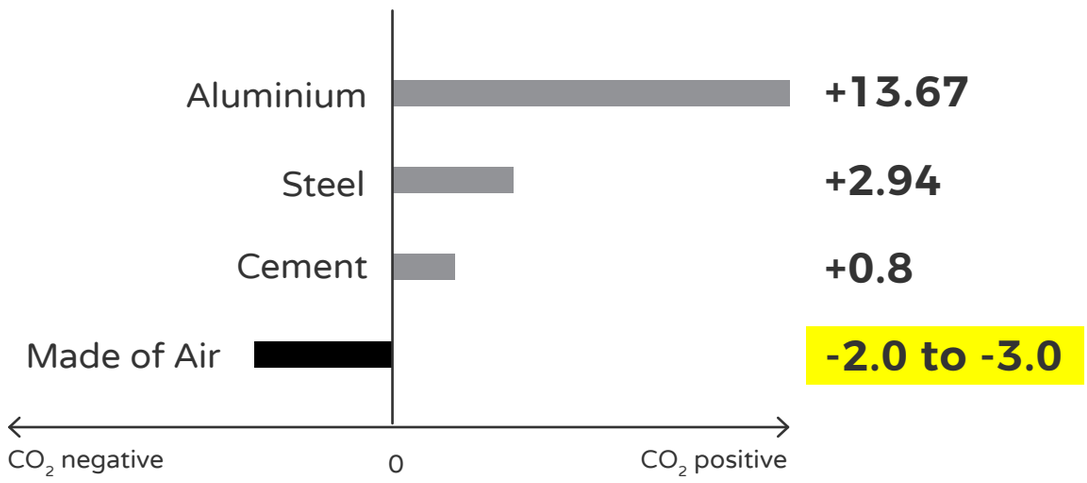


cladding market example:



embodied CO_2 emissions:

+ Typical Building Materials (kg CO_2-eq/kg)



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directors

Allison Dring, MArch, UCL

Director, Co-Founder

Architect with an interdisciplinary background applying design research to the scale of cities. Co-Founder of Elegant Embellishments and lectures on topics involving technology and the environment.

Daniel Schwaag, DipArch, MSc, UCL

Director, Co-Founder

Veteran digital designer with an extensive background in computer-generated design and form-finding. Co-Founder of Elegant Embellishments and Mentor for Hybrid Plattform, UdK Berlin.

advisors

Prof. Dr. Arne Thomas

Professor, Functional Materials

Professor of Functional Materials at the department of Inorganic Chemistry, Technische Universität Berlin. Dr. Thomas' research focuses on porous and nanostructured materials.

Dr. Galina Churkina

Scientist, Senior Fellow

Senior Fellow at the Institute for Advanced Sustainability Studies in Potsdam. Dr. Churkina's work investigates various feedbacks between urbanization and our planet, pioneering new studies of the urban carbon cycle.

Dr. Will Laufs

Structural Engineer, Adjunct Professor

Adjunct Professor at Columbia University and Pratt Institute. Dr. Laufs is a leader in the field of structural, facade engineering and specialty structures. As Director at LED, his work focuses on new materials and complex geometries.

Fil Guijarro

Business Development & Sales, Mentor

Business development consultant and Startupbootcamp Mentor. Mr. Guijarro is an expert in the expansion of digital products & services, heading the internationalization of various European internet startups.

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interested?
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