

 **BIOFORCETECH**



OurCarbon[®]

divert



Devviare

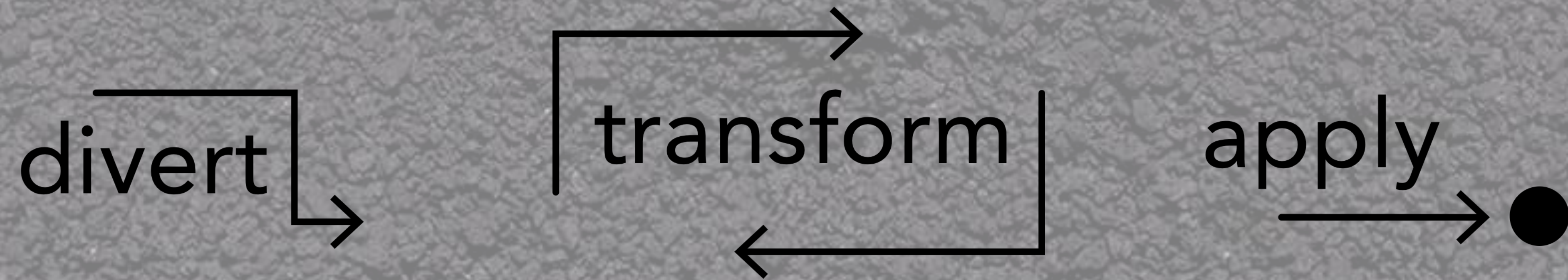




Devviare

Trasformare





Devviare

Trasformare

Applicare



Fanghi di depurazione



Fanghi di depurazione

Il prodotto di risulta delle acque reflue

Gestione complicata

Costi elevati di smaltimento

Un vero e proprio Rifiuto



Discarica



Discarica

Altissime emissioni

Aumento del riscaldamento climatico

Assolutamente non sostenibile



Agricoltura



Agricoltura

Problemi normativi

Materiale non facilmente palpabile

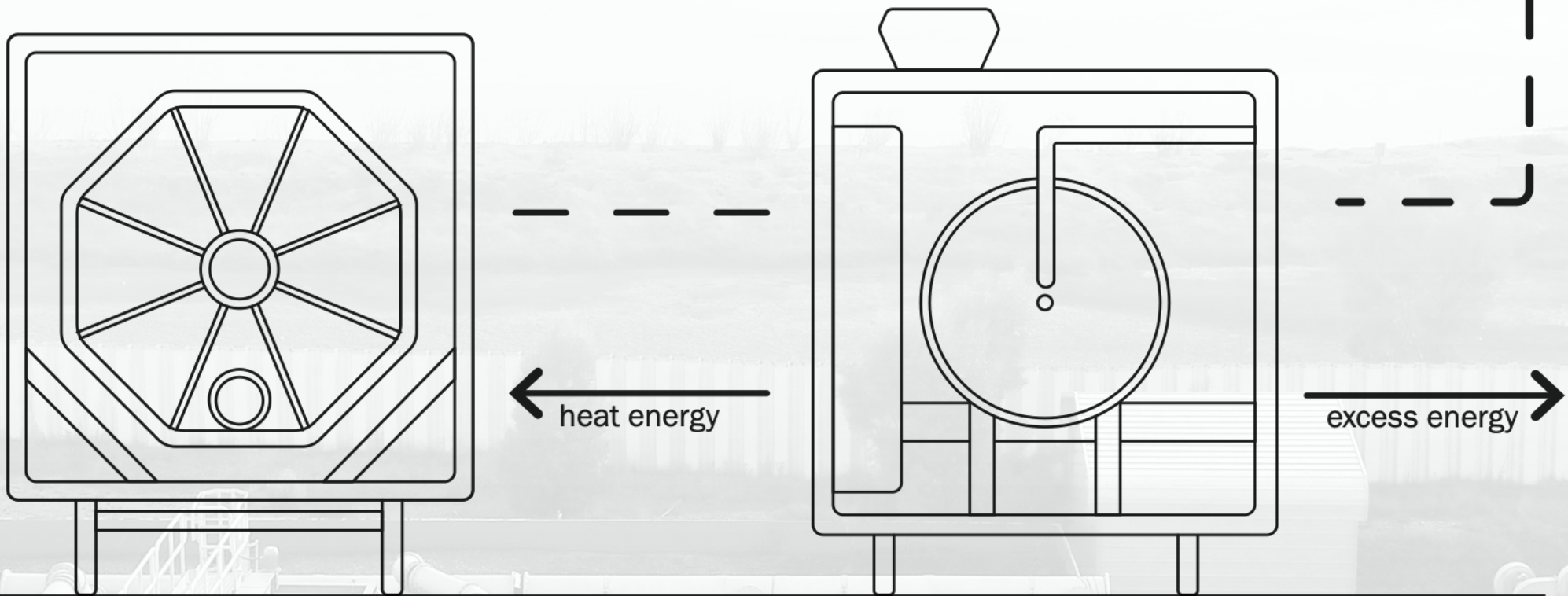
Gestione complicata e odori





BIOSOLIDS

OurCarbon®



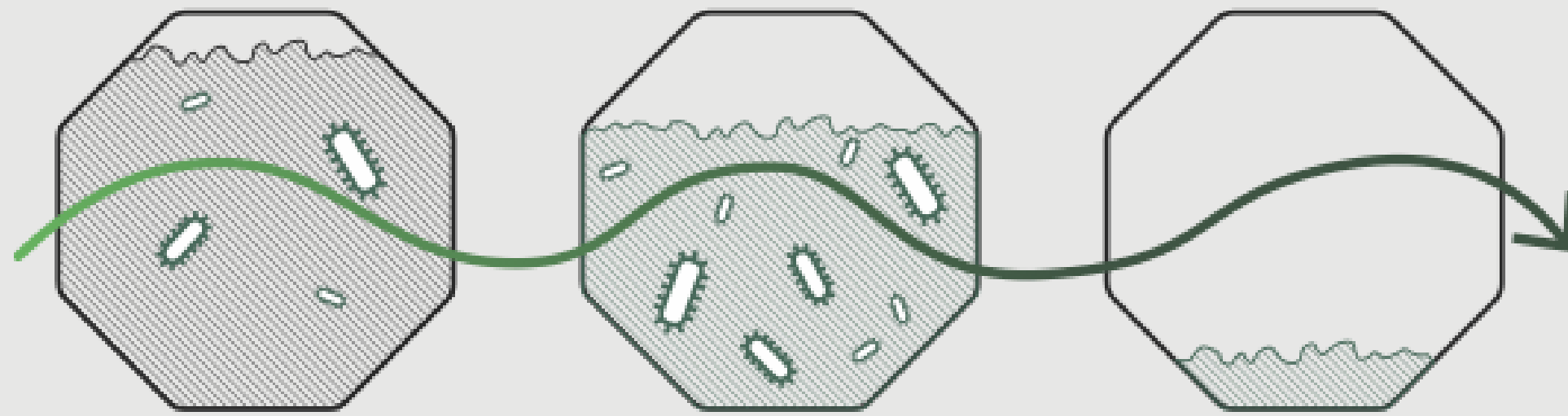
BFT
BIODRYER

P SERIES
PYROLYSIS



THE BIODRYER

The BFT BioDryer cultivates bacteria already present in a feedstock to create energy that dries the feedstock. Instead of using external energy, this nearly passive system leverages the potential of what is already there.



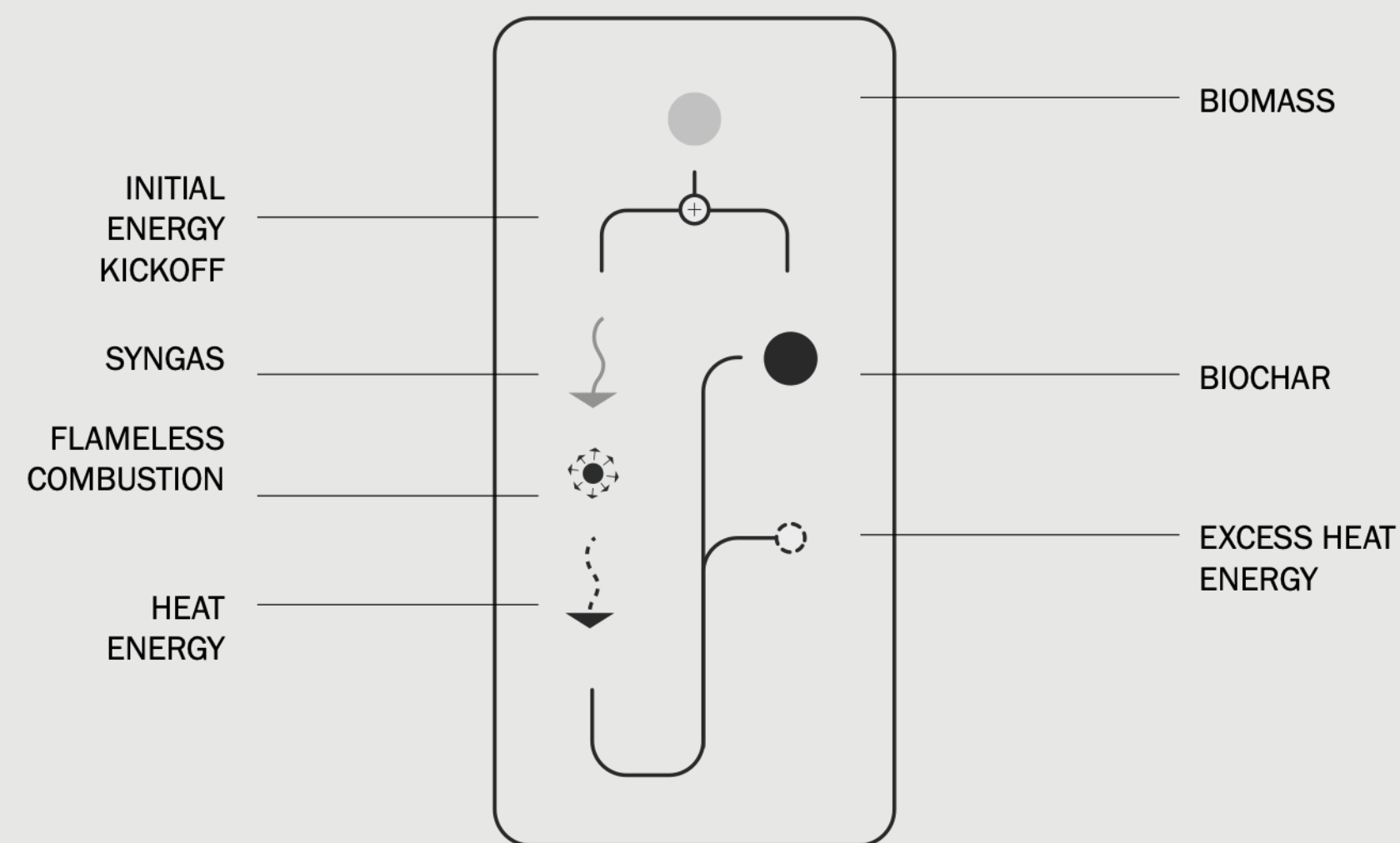
Warm air cultivates thermophilic bacteria which flourish, evaporating water in the process. The result is a dry material at a decreased volume.



P-SERIES PYROLYSIS

Our P-Series Pyrolysis unit kicks off with a small amount of natural gas, and then carbonizes organics in a continuous feed by flamelessly combusting the gas created in the process itself.

This allows the pyrolysis to sustain indefinitely. Any excess heat energy is fed to the BioDryer to further increase system efficiency.



In our pyrolysis process, all energy is utilized safely on site to produce a clean, low BTU, fixed carbon biochar we call OurCarbon™.

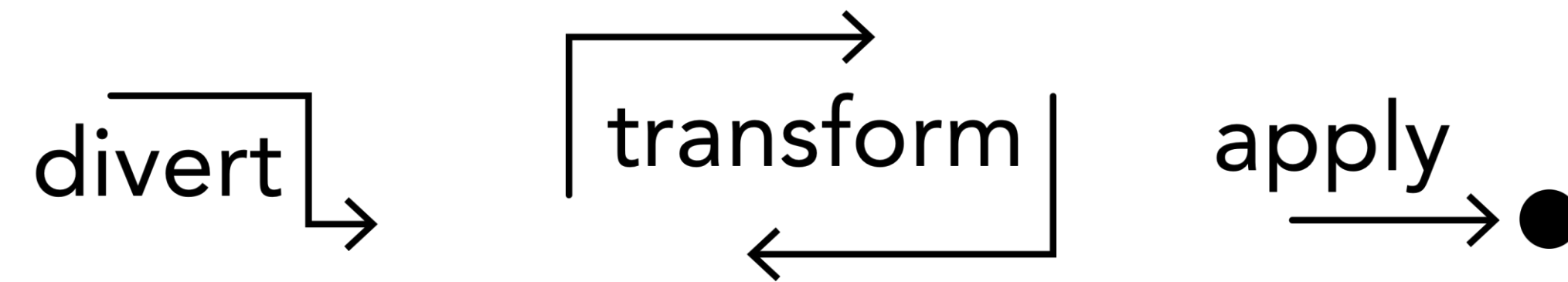


OurCarbon[®]

Carbon Negative Base Material



OurCarbon Life Cycle Assessment



According to a third party Life Cycle Assessment conducted by Northern Tilth using the BEAM Model, the trusted standard model for the wastewater industry...

1:10

The Bioforcetech system prevents 10 tons of CO₂e for every ton of OurCarbon we produce when diverting sewage sludge from landfill.



EPA Testing Proves PFAS Removal

EPA PFAS Task Force tested Bioforcetech’s system and showed reduction of all Per- and Polyfluoroalkyl Substances to Non-Detect levels in OurCarbon.

New testing shows no substances in emissions stack, and more testing is scheduled for later this year.



Journal of the Air & Waste Management Association



ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/uawm20>

Pyrolysis processing of PFAS-impacted biosolids, a pilot study

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ABSTRACT

Concentrations of per- and poly-fluoroalkyl substances (PFAS) present in wastewater treatment biosolids are a growing concern. Pyrolysis is a thermal treatment technology for biosolids that can produce a useful biochar product with reduced levels of PFAS and other contaminants. In August 2020, a limited-scope study investigated target PFAS removal of a commercial pyrolysis system processing biosolid with the analysis of 41 target PFAS compounds in biosolids and biochar performed by two independent laboratories. The concentrations of 21 detected target compounds in the input biosolids ranged between approximately 2 µg/kg and 85 µg/kg. No PFAS compounds were detected in the biochar. The PFAS concentrations in the biochar were assumed to equal the compounds’ minimum detection limits (MDLs). The pyrolysis system’s target PFAS removal efficiencies (REs) were estimated to range between >81.3% and >99.9% (mean >97.4%) with the lowest REs being associated with the lowest detected PFAS concentrations and the highest MDLs. No information on non-target PFAS compounds in influent or effluent media or products of incomplete combustion was considered. Selected gaseous emissions were measured by Fourier transform infrared spectroscopy and gas chromatography time-of-flight mass spectrometry to provide additional information on air emissions after process controls. This limited-scope study indicated that additional research to further understand this process is warranted.

Implications: Development of alternative approaches to manage PFAS-impacted biosolids is of emerging international importance. A commercially operating biosolid pyrolysis process was shown to lower target PFAS levels in produced biochar. Additional research is warranted to understand all potential PFAS transformation emission routes and optimal air pollution emissions control strategies for this technology class.

PAPER HISTORY

Received June 4, 2021
Revised September 30, 2021
Accepted October 19, 2021

OurCarbon[®]

Pigment



Paint



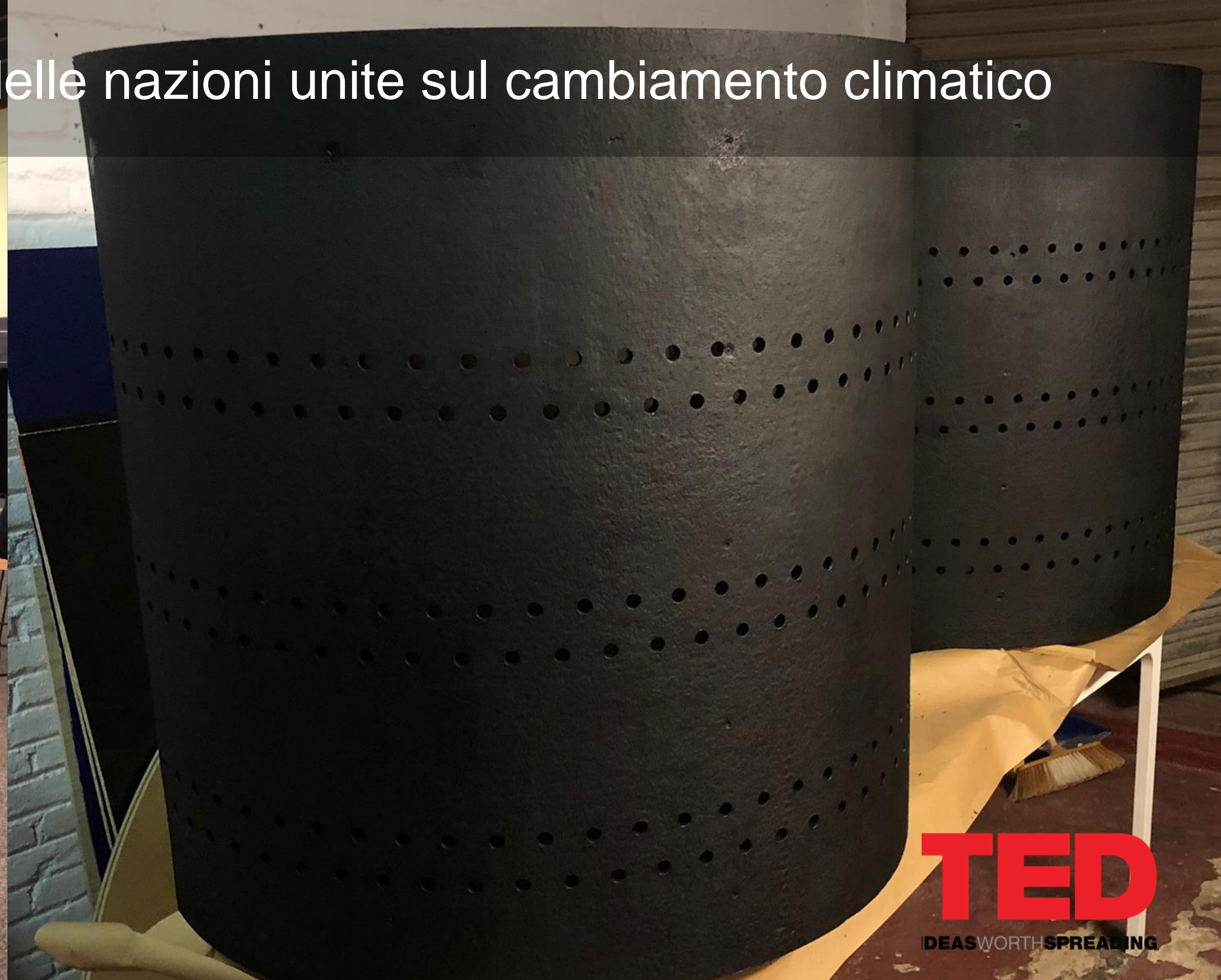
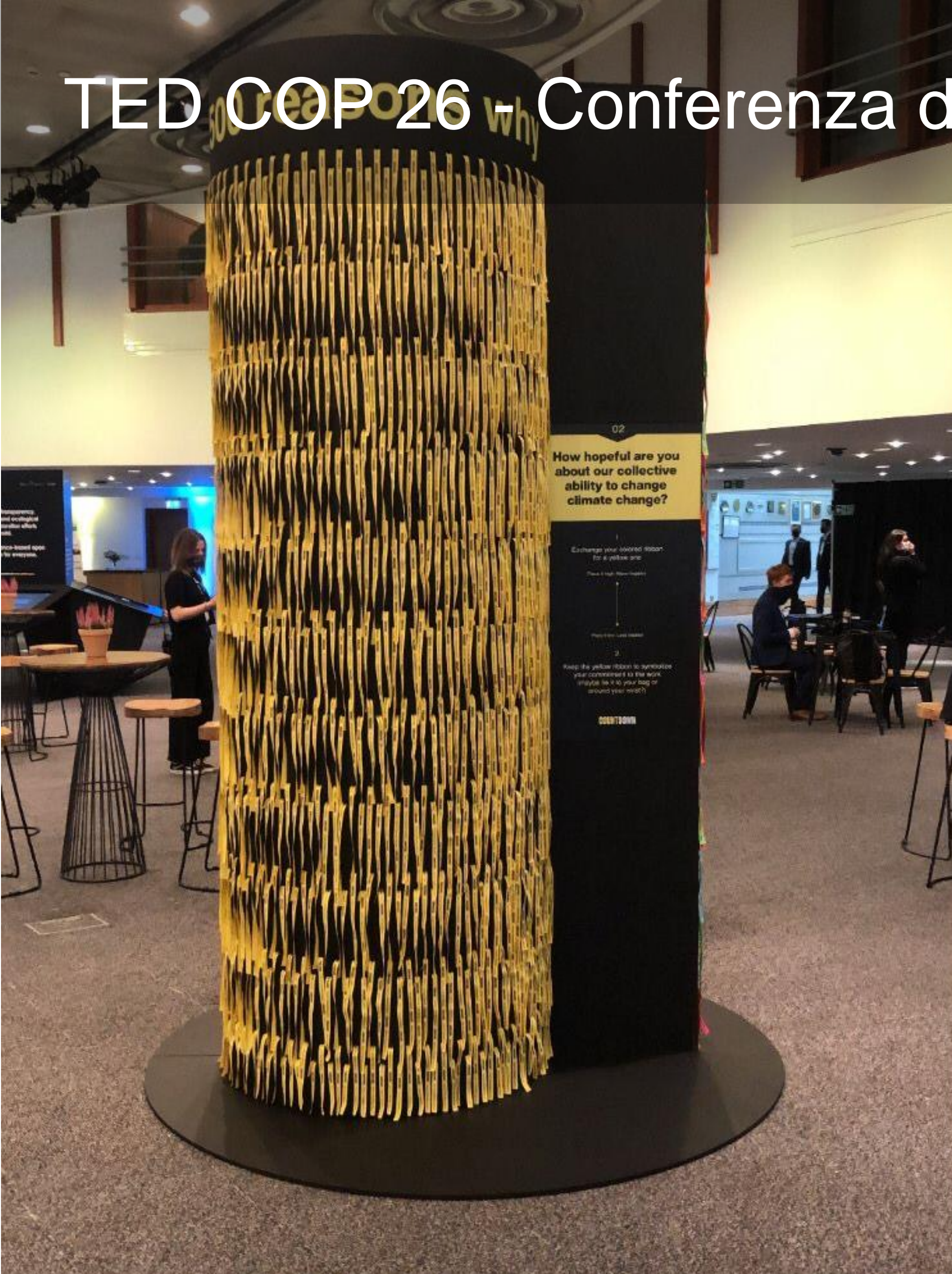
Made with
OurCarbon[®]



Design Museum Barcelona



TED COP26 - Conferenza delle nazioni unite sul cambiamento climatico



Masterbatch

Made with
OurCarbon®



Masterbatch application



Made with
OurCarbon®





PLA Filament
Colored in Extruder
Masterbatch Applicable

Made with
OurCarbon®





Made with
OurCarbon®





Made with
OurCarbon®





Made with
OurCarbon®





OurCarbon Pigment
Sostituisce Carbon Black(Petrolio)
- 3.3 ton CO₂e per Ton

Made with
OurCarbon®



OurCarbon[®]

Material Additive



Carbon Negative Structural Concrete

Made with
OurCarbon[®]



Carbon Negative Structural Concrete

OurCarbon: 5% del totale

Emissioni evitate: Carbon Negative

Oltre a 3000 PSI resistenza (500 in più del controllo)

Made with
OurCarbon®



Carbon Negative Structural Concrete

Wilsonville Concrete Products

LaFarge Labs

NRMCA



Carbon Negative Structural Concrete



Made with
OurCarbon®



Carbon Negative Structural Concrete



Carbon Negative Structural Concrete



Carbon Negative Structural Concrete



Carbon Negative Structural Concrete



Carbon Negative Structural Concrete



Carbon Negative Structural Concrete

Structural and Ornamental Applications
Distributed Production Aligned with Regional
Concrete
Cleaner Air, Water, and Ecosystems
Sequestered Carbon into Built Environment

Made with
OurCarbon®



Soil Amendment

Made with
OurCarbon®



Soil Amendment

Increase Soil Carbon

Hold Water (up to 34%)

Nitrogen and Phosphorous

Micropores Support Life



Soil Amendment

Street Trees, New Plantings, BioSwales, Medians,
Parks

Co-Composting For Nutrient Uptake

N and P Slow Release Fertilizer

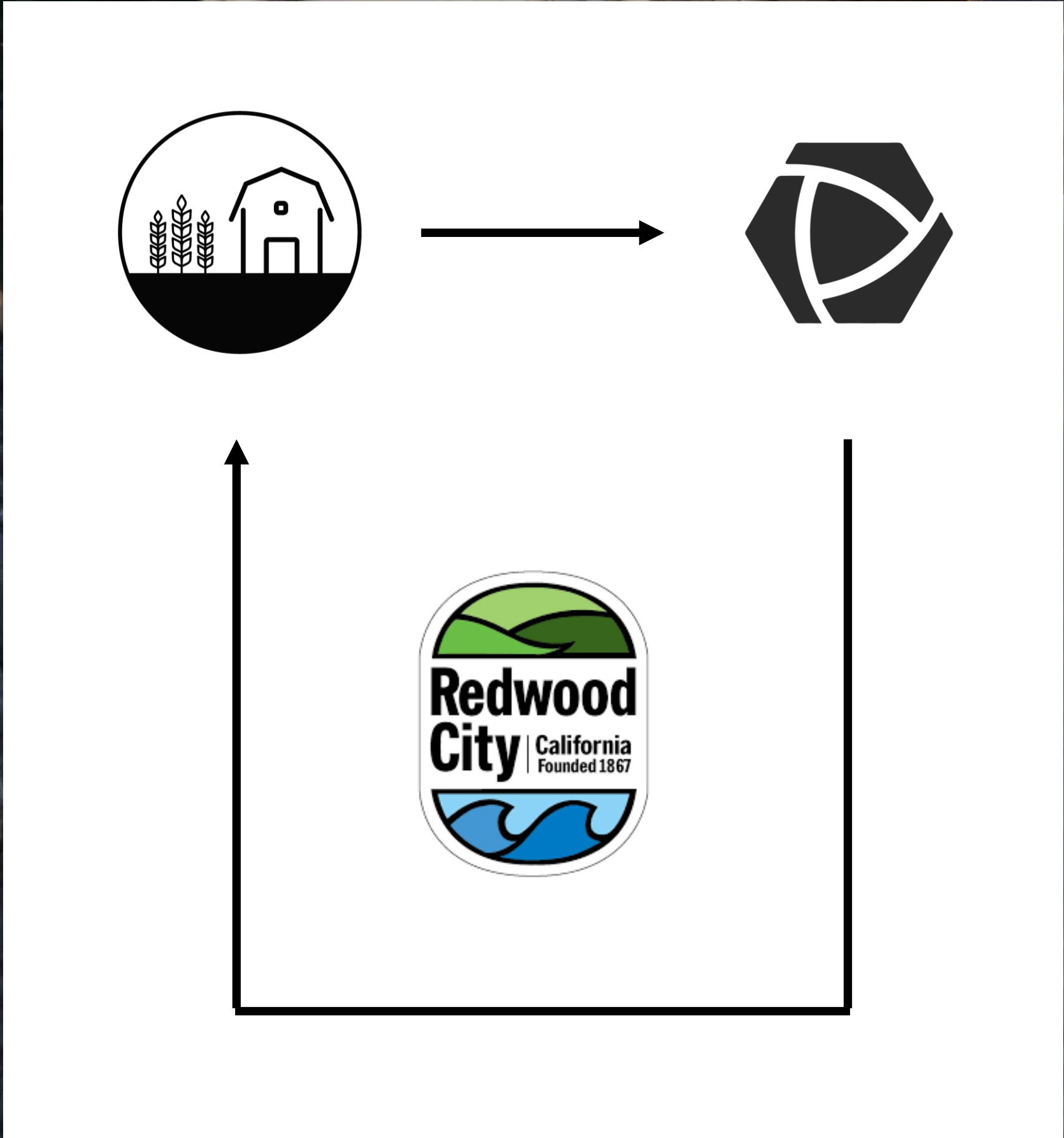
Water Retention for Drought Months

Stormwater Management Prevents Runoff

Made with
OurCarbon®



Soil Amendment





Climate Goals

Sequester Local Carbon

Reduce Transport

Increase Soil Carbon

Embody Carbon in Built Environment

Concrete threshold GWP

Completely Rethink Waste



Fanghi di depurazione in ITALIA ?



ITALY

01 BrianzAcque



02 Gruppo CAP



03 AcegasApsAmga



04 CAFC



05 AcqueBresciane



06 AQA - TeaAcque



07 AMAP



08 Acciona



09 Acciona



10 ACEA



11 Gruppo ASTEA





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