Today:

ASLA Biodiversity and Climate Action Committee Update and Industry Transformation

First:

ASLA Biodiversity and Climate Action

Committee Update

CLIMATE ACTION PLAN

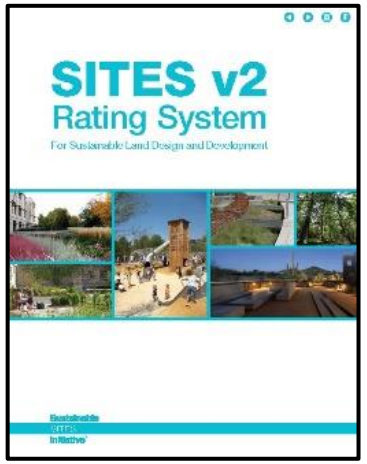
2022-2025

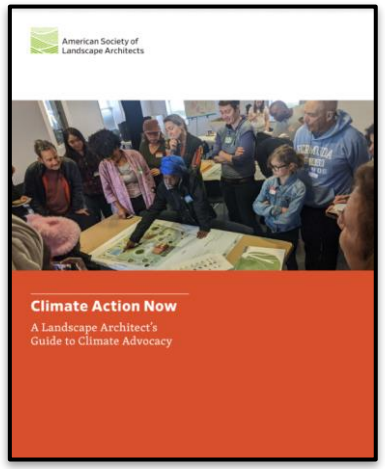
American Society of Landscape Architects

The American Society of Landscape Architects Fund

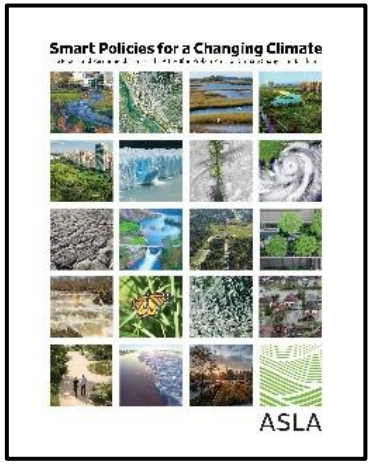
Photo Credit: ©Lloyd/SWA, courtesy SWA/BALSLEY and WEISS/MANFREDI

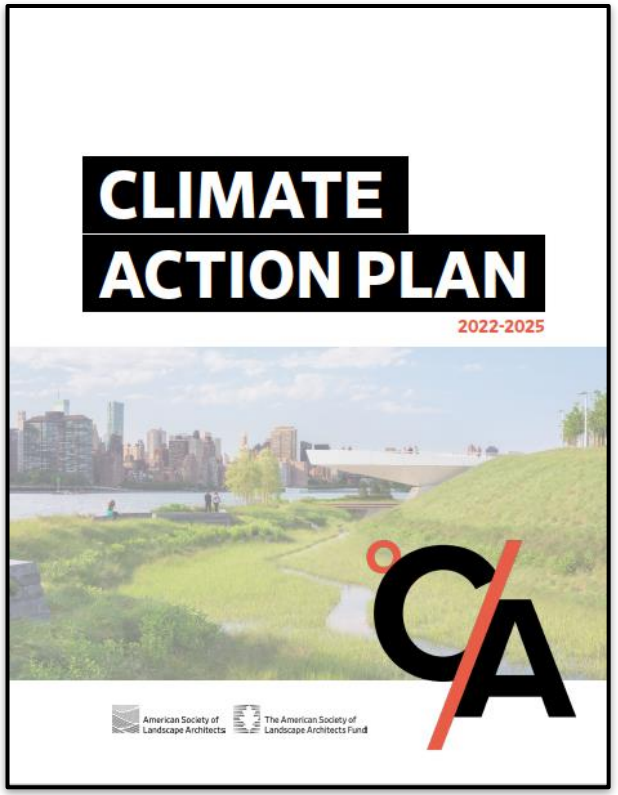
TAKING ACTION

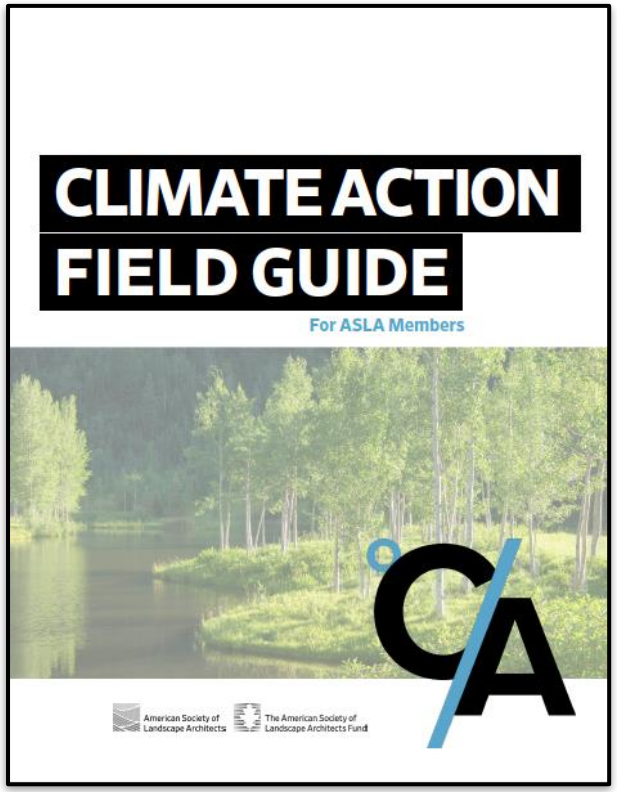




IFLA
CLIMATE ACTION COMMITMENT







VISION FOR 2040

VISION FOR 2040

All landscape architecture projects will simultaneously:

Achieve zero embodied and operational emissions and increase carbon sequestration

Photo Credit: Reed Hilderbrand LLC / James Ewing Photography

VISION FOR 2040

All landscape architecture projects will simultaneously:

Provide significant economic benefits in the form of measurable ecosystem services, health co-benefits, and green jobs

Photo Credit: Design Workshop, Inc. / Brandon Hutteniocher, Design Workshop, Inc.

VISION FOR 2040

All landscape architecture projects will simultaneously:

Address climate injustices, empower communities, and increase equitable distribution of climate investments

Photo Credit: James Corner Field Operations/ Adela Loconte/Shutterstock

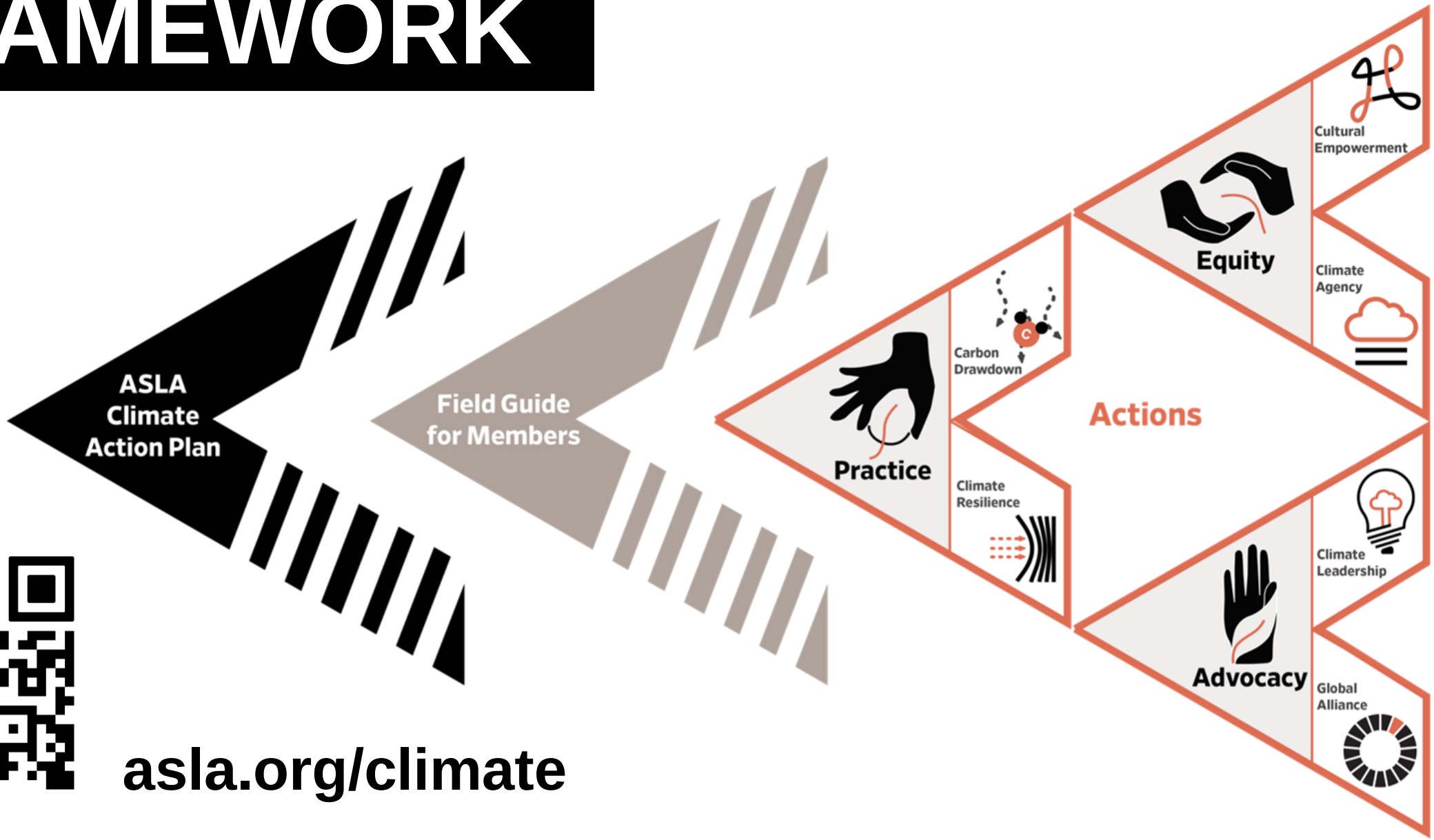
VISION FOR 2040

All landscape architecture projects will simultaneously:

Restore ecosystems and protect, conserve, and enhance biodiversity

Photo Credit: Hargreaves Jones

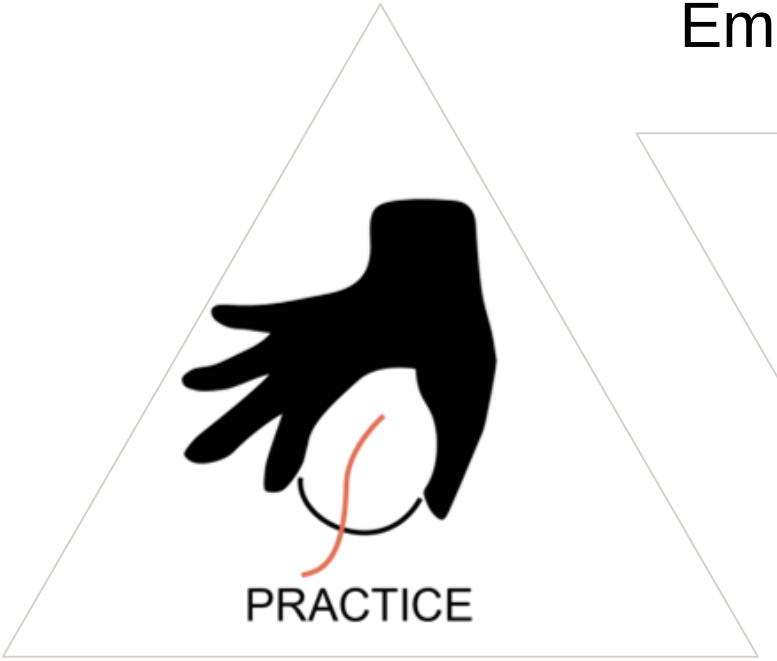
FRAMEWORK

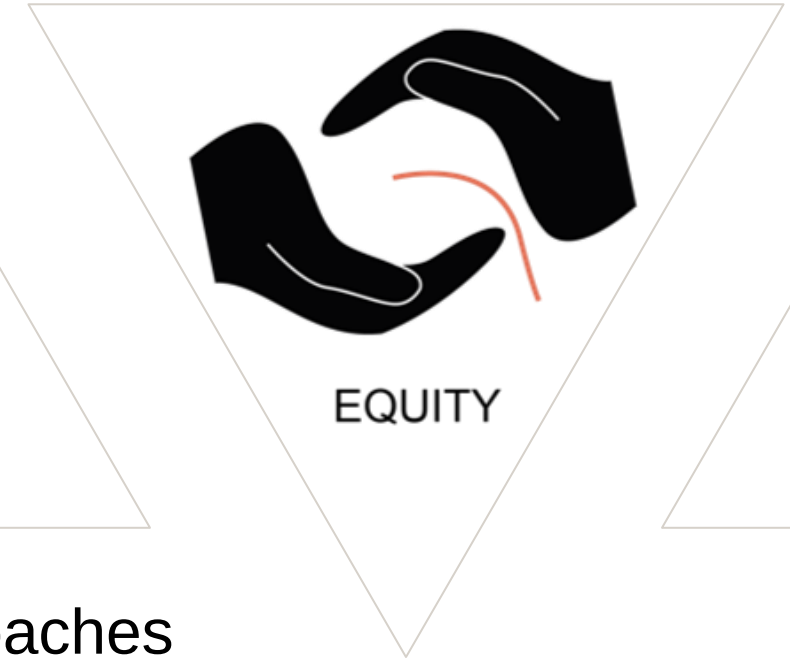


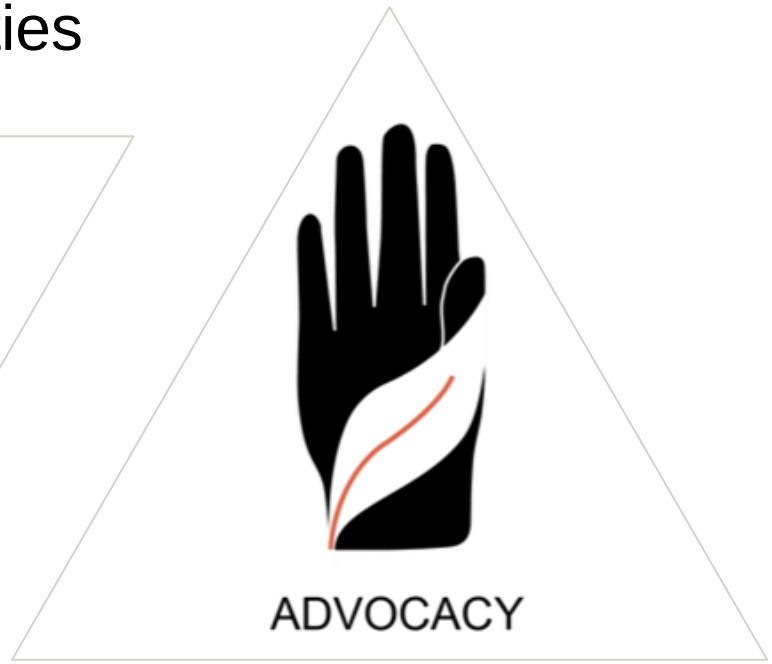
asla.org/climate

GOALS

Empower Communities







Climate Positive Approaches

Build Coalitions

GOALS

Practice, Equity, + Advocacy

INITIATIVES

2 Initiatives / Goal =
6 Total

OBJECTIVES

7 Objectives / Goal =
21 Total

ACTIONS

Endless!

CAP OBJECTIVES + ACTIONS

We commit to zero emissions and doubling sequestration by 2040

Carbon Drawdown

We commit to zero emissions and doubling sequestration by 2040

ASLA 2020 Professional Research Honor Award. Climate Positive Design. Pamela Conrad/ CMG Landscape Architecture

01 Provide curated resources to inform, guide, and support members' Climate and Biodiversity Positive Design and planning practices

Develop a Climate Action Member Field Guide that addresses climate and biodiversity positive project design and business operations practices

Improve and maintain the ASLA website and newsletters with climate crisis news and curated resources on how to address the climate and biodiversity crises

Develop a searchable database of case studies of exemplary projects. Case Studies to be coordinated with allied landscape architecture organizations and universities and incorporate the LAF case studies and Green New Deal SuperStudio projects

Develop a searchable database of member climate experts for media, organized by state, region, and expertise area. Database will include leadership profiles of ASLA members on climate action

Support the development of the economic case for a low- and zero-emission product supply chain, including Environmental Product Declarations (EPDs) by landscape architecture product manufacturers and their inclusion in existing sustainability product databases along with an expanded Landscape Architecture Magazine / ASLA product directory

Evaluate demand for new and existing resources through member surveys and feedback

02 Provide support on meeting the Climate Positive Design Challenge and using the Pathfinder tool

Working with ASLA and other landscape architecture organizations, **launch Climate Positive Commitment** to support members measuring the impacts of their work. Such work will align with and go beyond the IFLA Climate Action Commitment /COP26 Communique targets of projects and business operations achieving 50-65% emissions reduction operations by 2030 and zero CO2 emissions by 2040. It will also include the commitment to improve additional environmental, social, cultural and economic co-benefits such as increased biodiversity.

Investigate and provide guidance and support on elevating the means of calculating carbon, equity, and biodiversity impacts
ASLA members and associated firms and organizations take the Climate Positive Design (CPD) Challenge and meet its targets:

By end of year 2023: 50% firm/organization participation in CPD Challenge
By end of year 2025: 100% landscape projects logged in Pathfinder
By 2030: logged projects achieve 50-65% emission reductions and double sequestration
By 2040: logged projects achieve 100% emission reductions and double sequestration

Support collaboration, development of tools, guidance and resources, and outreach with the Climate Positive Design initiative, including funding for future growth and updates. Expand education and climate action guidance for members to reach beyond carbon calculating and measure other co-benefits such as biodiversity, water management, resilience, green jobs, equity etc.

03 Communicate and ensure we are held to account on these commitments

Promote this action plan to our members and wider stakeholders as a statement of intent

Report against carbon reduction targets and sustainability publicly. Begin with calculating baseline budgets and improving upon it, both for the ASLA organization and firms

Support sustainability champions among the ASLA Professional Team and chapter volunteers at a local level with resources and to advance goals and document progress

Annual report out at conferences both for ASLA and firms/other LA organizations

Develop broader Sustainability Action Plan for ASLA and work towards triple-bottom-line accounting

04 Leverage ASLA's own commitment to achieve zero emission in all of its business operations by 2040

Hire a sustainability consulting firm to conduct a sustainability audit of the 2022 ASLA Conference on Landscape Architecture in San Francisco **and ASLA 2022 business operations** to establish a baseline for meeting long-term goals

Once a baseline has been established, **develop an organization-wide emission reduction plan** to realize reductions in our carbon footprint of 20% by 2024

Partner with sustainability consultants to provide educational sessions and training at the ASLA Conference on Landscape Architecture and online to share best practices learned from ASLA's experience and support goals of achieving zero emissions by 2040 among the landscape architecture profession

Publicly share results of a sustainability audit routinely in a transparent manner, including all data collected and analyzed, through an emissions report, with members and partners

Commit to continuous learning and knowledge sharing with association and events planning organizations in order to further advance best practices to reduce carbon emissions in business operations

Purchase high-quality, verified carbon offsets in underserved communities of ASLA Conference host cities to mitigate climate impact of the Conference while emissions are reduced according to established goals

ASLA 2019 Professional Honor Award. Chulalongkorn University Centenary Park. Bangkok, Thailand. LANDPROCESS/ Panoramic Studio

ASLA: PLAN IMPLENTATION

Research

EVIDENCE FOR LANDSCAPE ARCHITECTURE SOLUTIONS TO THE CLIMATE AND BIODIVERSITY CRISES

ASLA 2021 Professional General Design Honor Award. Duke University Water Reclamation Pond. Durham, North Carolina. Nelson Byrd Woltz Landscape Architects >

National Competitive Research Grants from The ASLA Fund

Vice President Harris Makes the Case for Nature-based Solutions

04/25/2023 | Jared Green

Vice President Kamala Harris at the University of Miami's Rosenstiel School of Marine, Atmospheric, and Earth Science in Key Biscayne, FL / AP Photo/Rebecca Blackwell

ASLA: PLAN IMPLENTATION

COP28
in Dubai

ASLA: BASELINE EMISSIONS

American Society of Landscape Architects

ASLA 2022 Conference on Landscape Architecture

Sustainable Event Impact Assessment

Opportunities for Future Sustainability

HONEYCOMB STRATEGIES

Waste Impacts

19.33 tons

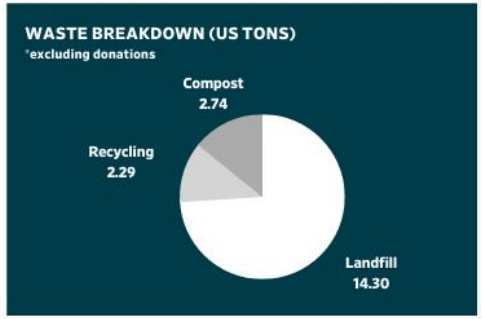
Total event waste*

26%

Waste diversion rate*

49,500 tons

Estimated donated materials
(see page 12 for details)



Not all consumption is created equal, but all consumption can be planned, monitored, and reduced. Developing a waste management plan and working with stakeholders early helps increase the waste diversion rate. With intentional procurement goals, exhibitor sustainability pledges and purpose driven operations, negative environmental impacts can be minimized on the communities where future conferences are held.

6.29 lbs

Waste generated per participant*

4.65 lbs

Landfill waste per participant

*excluding donations

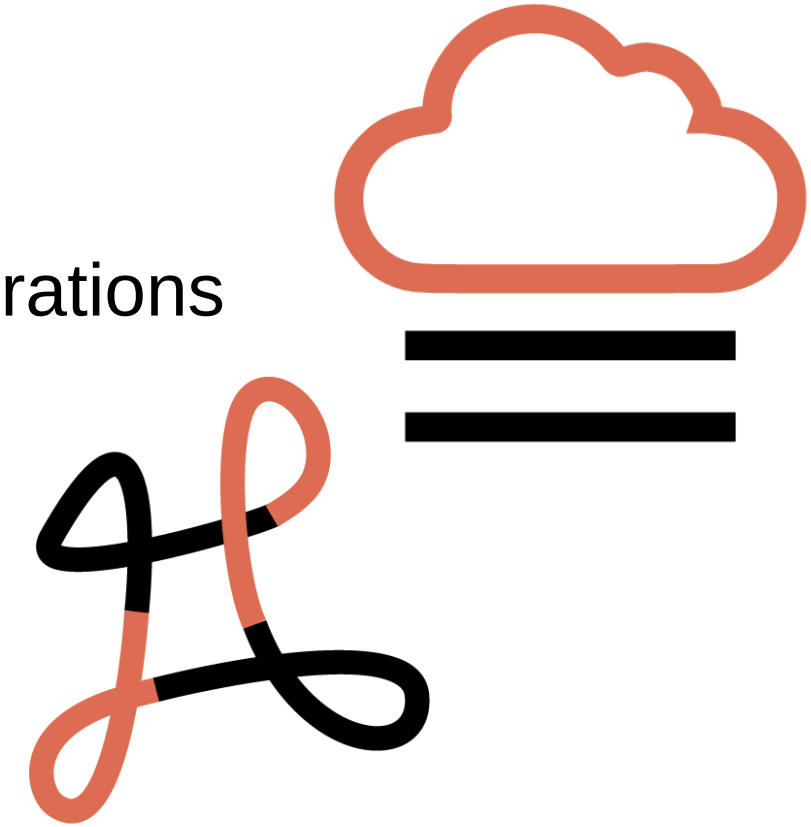
ASLA 2022 Conference SKETCH Lounge. Image credit: ASLA/Korey Davis Photography

BEST PRACTICES AND OPPORTUNITIES FOR IMPROVEMENT

ASLA 2022 Conference Alameda Field Session. Image credit: ASLA/Korey Davis Photography

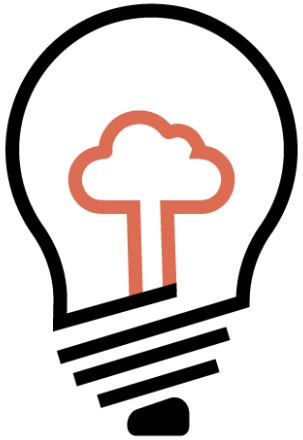
CLIMATE AGENCY AND COMMUNITY RESILIENCE

- Climate action partnership strategy
- Community engagement guidelines
- Equity principles for projects and operations



CLIMATE LEADERSHIP AND COMMUNICATIONS

- Climate Action Network
- Field Guide presentation templates
- Collaboration between practitioners and academia through CELA
- Research grant development
- Sounding board for ASLA communications team



Carbon Drawdown

Achieve zero emissions and double sequestration by 2040

Practice

ASLA Actions

Provide curated guidance resources

Provide support on meeting Climate Positive Design Challenge

Communicate to ensure accountability

Achieve zero emissions by 2040 as an organization

Photo Credit: Design Workshop, Inc. / D.A. Horchner

American Society of Landscape Architects

ASLA Fund

Collaborating with Industry Partners on Climate Action and Biodiversity

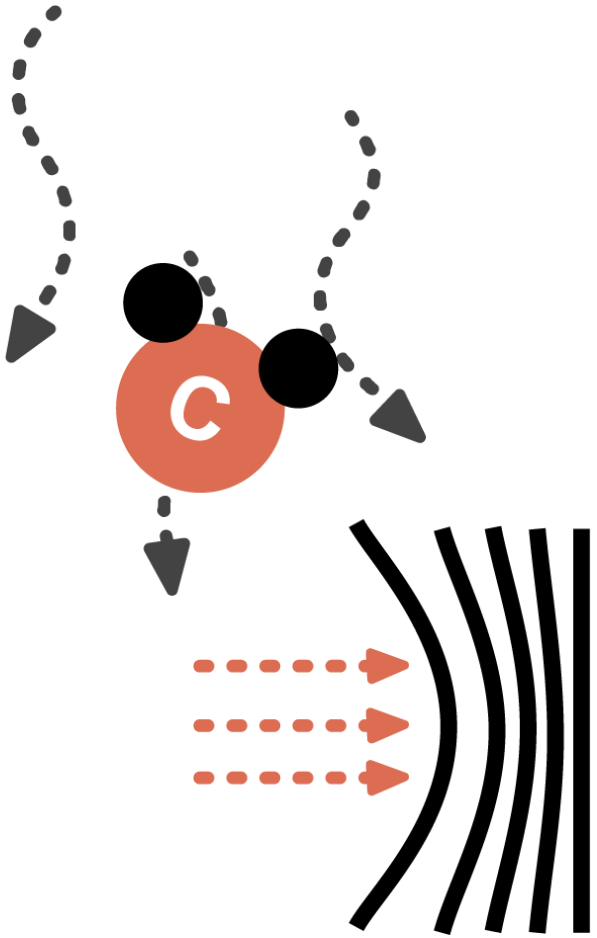
A Guide to Conversations Among Landscape Architects, Vendors, and Product Manufacturers

American Society of Landscape Architects

ASLA Fund

Towards Zero Emission Business Operations

A Landscape Architect's Guide to Reducing the Climate Impacts of Offices



ASLA Survey: Landscape Architects Call for Greater Collaboration with Product Manufacturers to Reduce Climate and Biodiversity Impacts

08/21/2023 | Jared Green

ASLA 2021 Professional General Design Honor Award. Ferrous Foundry Park, Lawrence, Massachusetts. STIMSON / Ngoc Doan

Survey Data

- 24% of landscape architects state that clients are setting greenhouse gas emission budgets for one or more of their projects
- 56% of landscape architects ask for third–party verified environmental product data, at some stage in the design process
- **Biggest challenge in decarbonization?**
  - Lack of client support – 37%
  - Lack of clear ways to measure and understand how to reduce projects' emissions - 28%
  - In comments: lack of policy, lack of interest, increased cost no certain benefit, lack of understanding of ROI, we just don't have the budgets
- **To move forward, landscape architects called for:**
  - Additional education
  - Creation of a shared, curated product data library
  - Best practices for landscape architects, product manufacturers, and the construction communities.
  - Creation of a shared, curated carbon factor dataset for materials

Source: The DIRT, ASLA.org

2024 Webinar Series

BIODIVERSITY AND CLIMATE ACTION 101 FOR LANDSCAPE ARCHITECTS

A free webinar series from the ASLA Biodiversity and Climate Action Committee

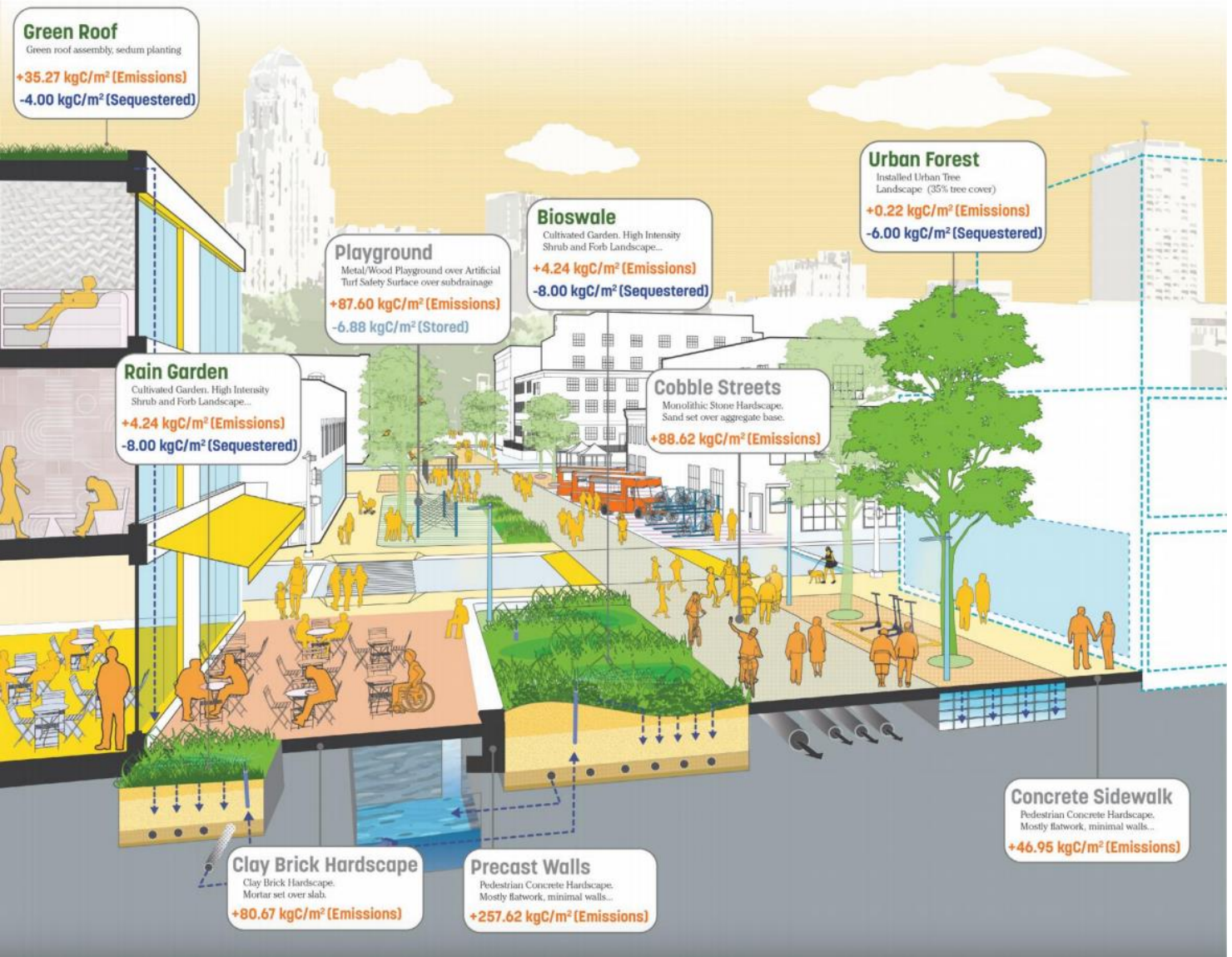
February	Introduction to Carbon in the Built & Living Environments
March	Decarbonizing Design: Best Practices and Strategies by Design Phase
April	Material Selection for Low Carbon Design
May	Reimagining Our Industrial Ecology: Process, Certifications & Verification
June	Towards Zero Emission Business Operations: How to Reduce the Climate Impacts of Offices
July	Climate Equity and Justice
August	Influencing Federal, State, and City Policies: Success Stories and New Opportunities
September	Urban Ecology (Carbon + Biodiversity)
October	Biodiversity Metrics

ASLA

Underwritten by

landscapeforms

Accounting for Carbon



- Measures embodied carbon, carbon storage, and sequestration of the materials used in each design
- Carbon factors can be evaluated alongside aesthetic, economic, and programmatic considerations
- Pathfinder uses Cost-Estimate level of detail, optimal for Design Development and later stages
- Carbon Conscience is optimal for concept and planning stages

path finder

Carbon Conscience BETA

tally®

Now:

Towards a Sustainable

Industry Transformation

A Few Things:

It’s Defined
It’s Framed Up
We’ve Got Paths
It’s Underway

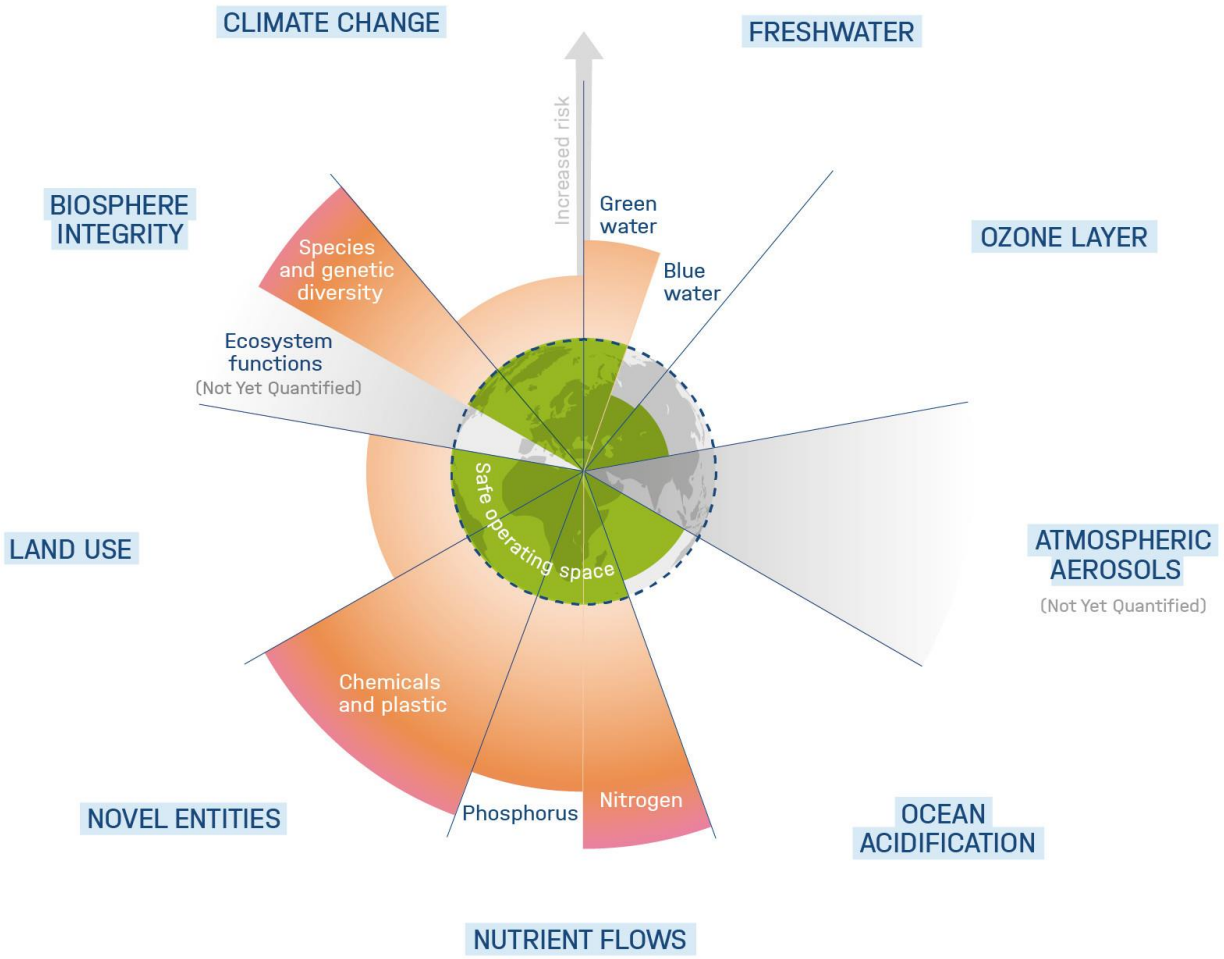
Sustainability defined:

Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Etymology: Sustainability was originally derived from the term “sustained yield”, used referring to forestry practices from the 12th -16th centuries throughout Europe.

Definition via the United Nations Brundtland Commission, 1987
Source: International Institute for Sustainable Development

PLANETARY BOUNDARIES

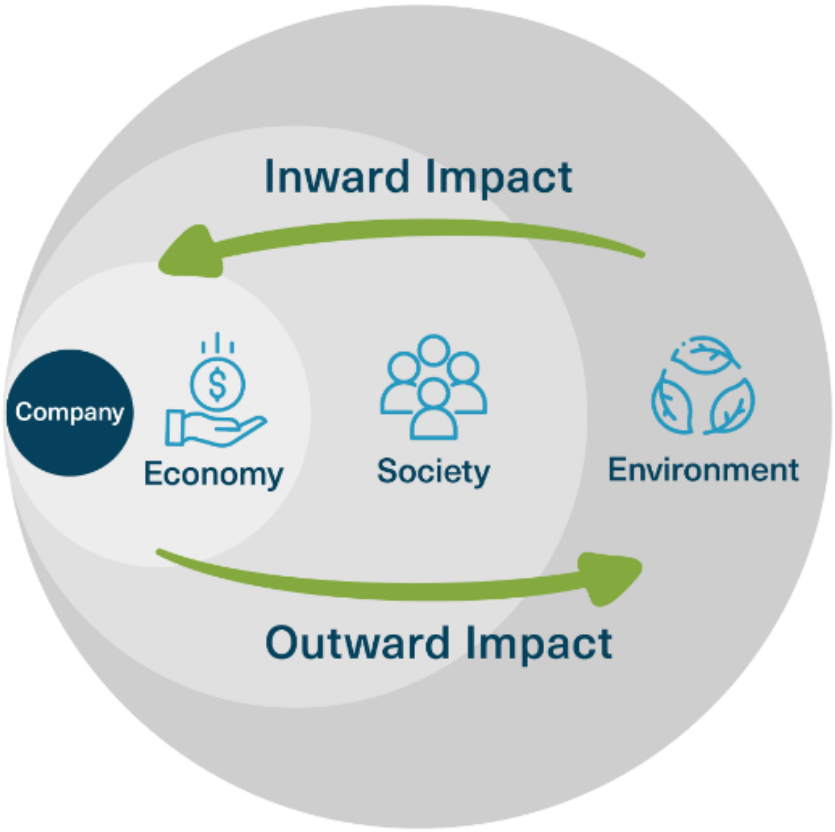


Adapted figure originally produced by Azote for Stockholm Resilience Centre, based on analysis in Wang-Erlandsson et al., 2022, Persson et al 2022 and Steffen et al 2015.

Safe operating space Planetary boundary exceeded

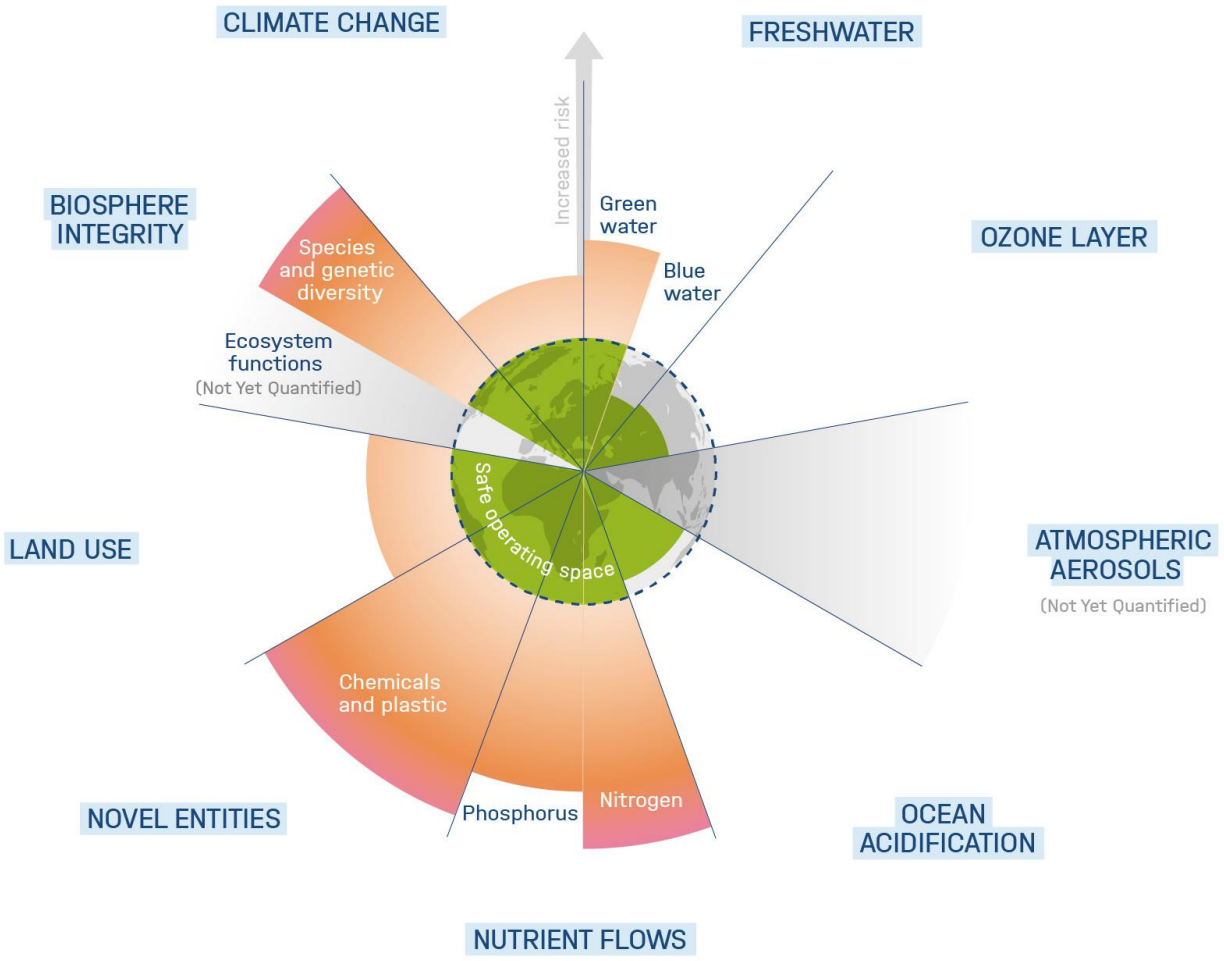
Planetary Boundaries
Source: Stockholm Resilience Institute

Double Materiality



Double Materiality per SASB/GRI in ESRS Type Integration
Source: SCS Consulting Services

PLANETARY BOUNDARIES



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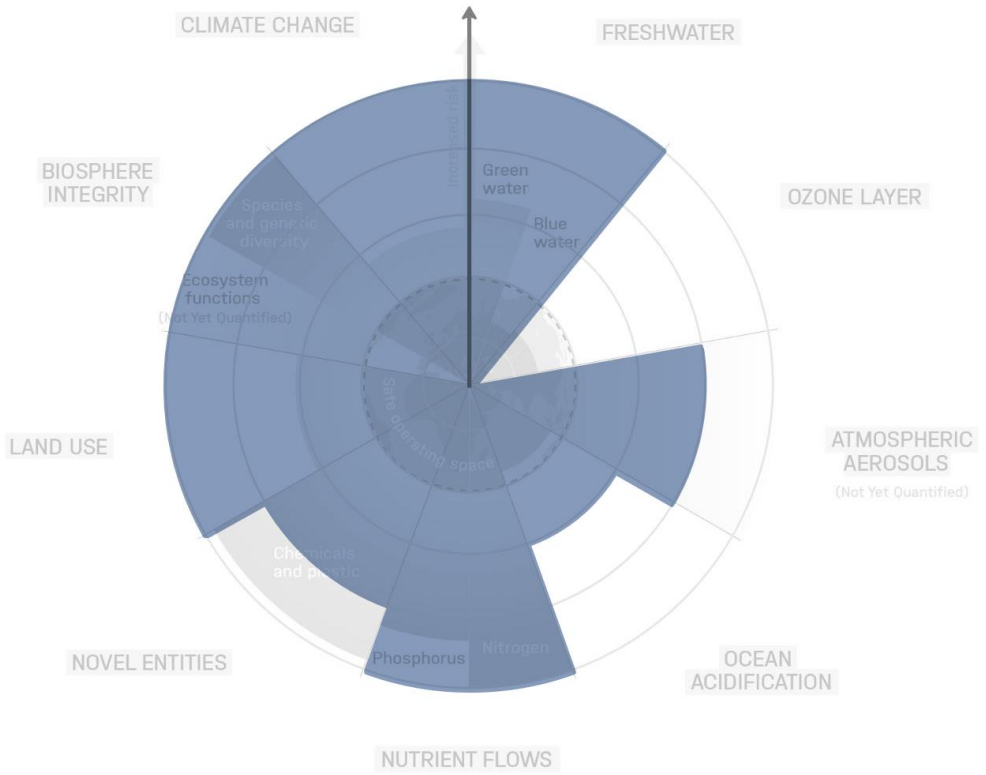
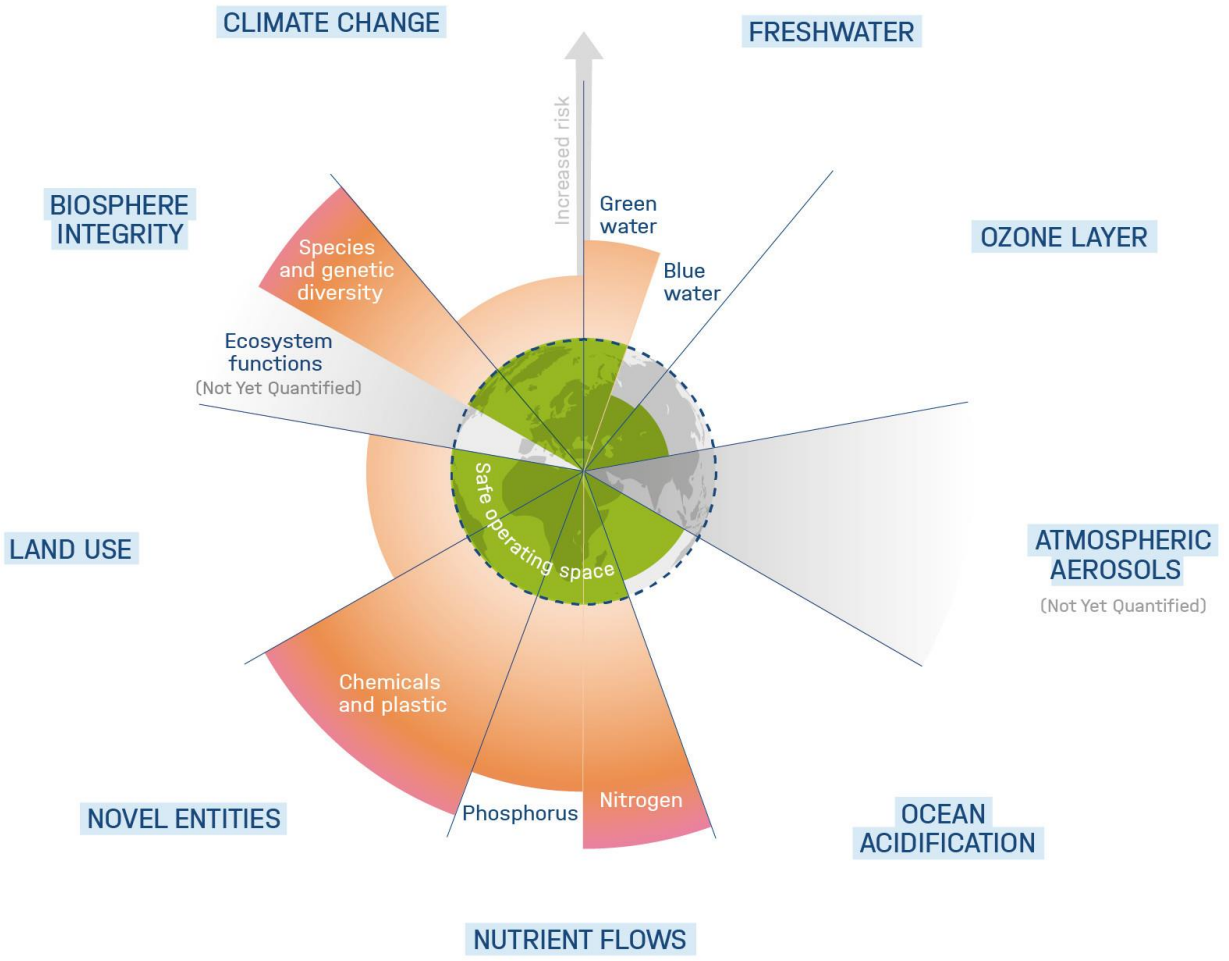
Safe operating space Planetary boundary exceeded

Scope of Influence | Landscape Architects



Business Scope of Influence mapped per scoring matrix,
0 pts = no influence, 5 pts = strong influence in Scope 1, 2 and 3

PLANETARY BOUNDARIES



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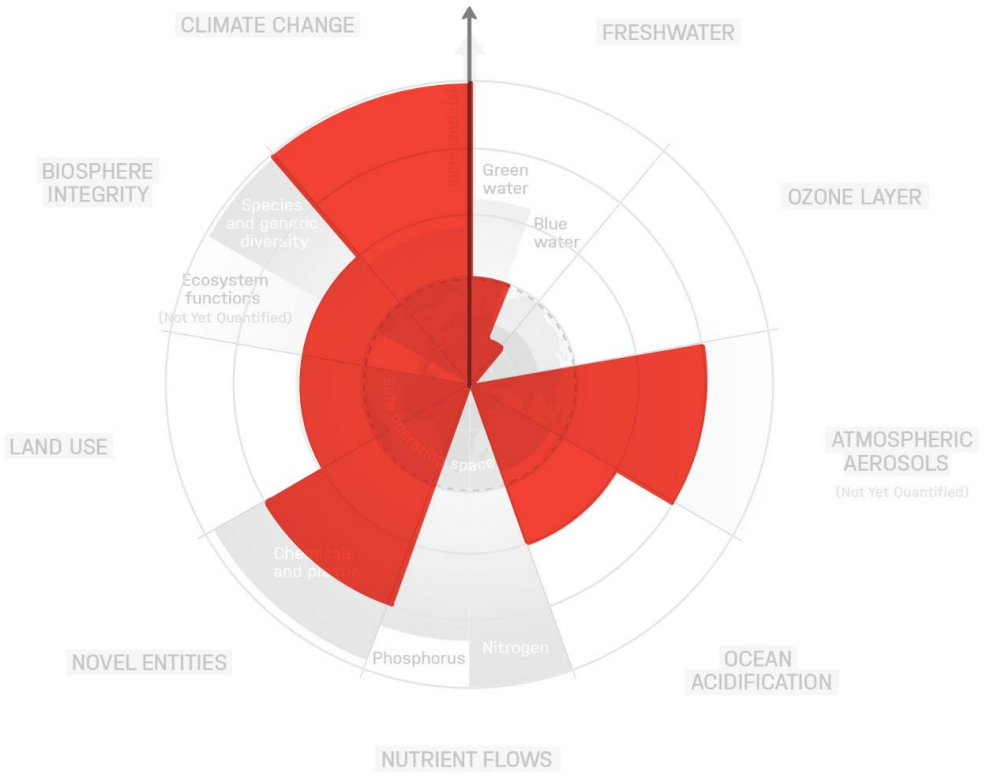
Safe operating space

Planetary boundary exceeded

Scope of Influence | Landscape Forms

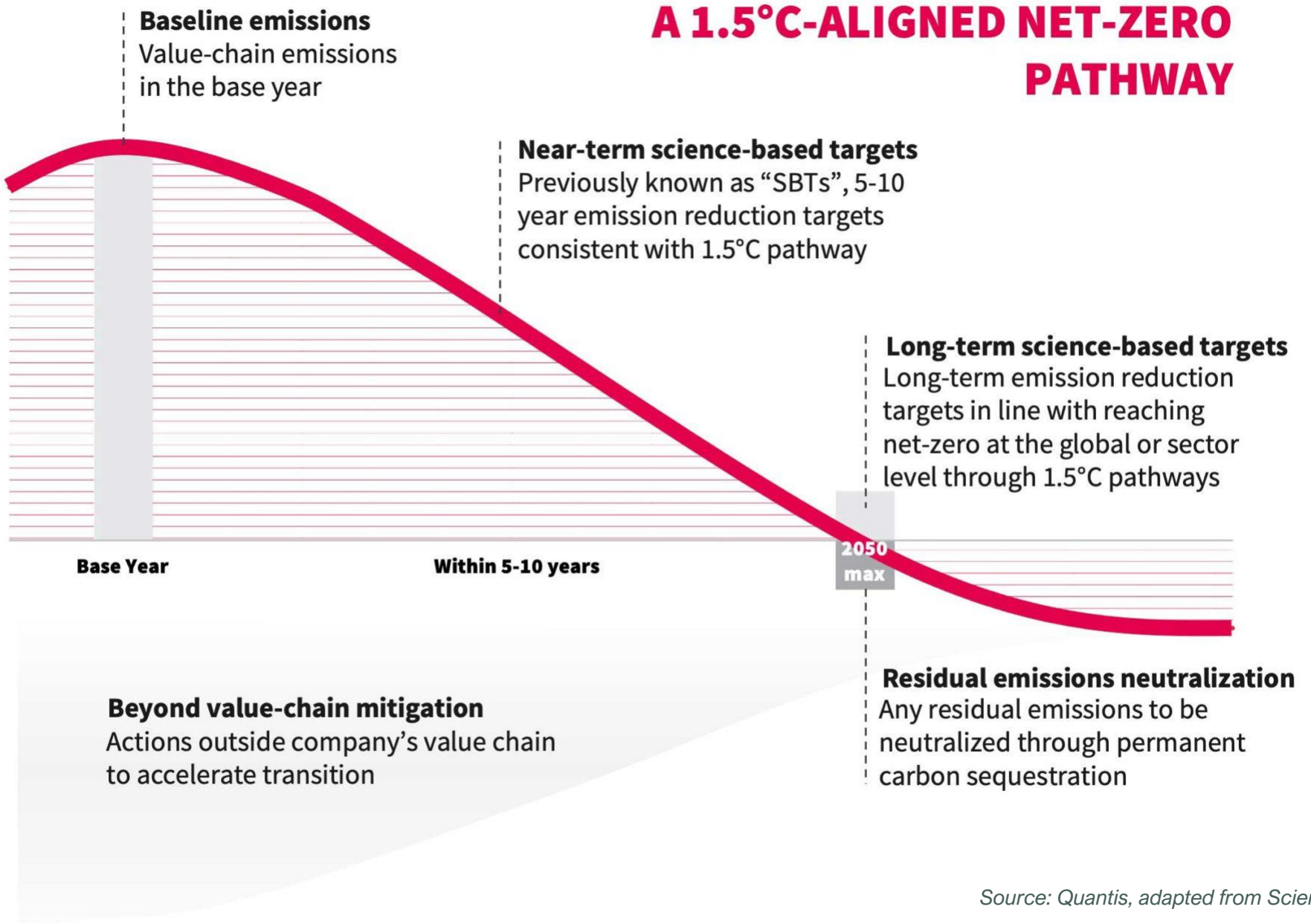


Business Scope of Influence mapped per scoring matrix,
0 pts = no influence, 5 pts = strong influence in Scope 1, 2 and 3

Dominant Challenges	Known Solutions
Climate Change	Reduce GHG Emissions, Decarbonization, Sequestration
Biodiversity Loss	Conservation of Land and Water, Ecological Restoration
Novel Entities	Safe Chemistry, Circular Economy

Source:
MIT Professional Programs Sustainability: Opportunities and Strategies for Industry

A 1.5°C-ALIGNED NET-ZERO PATHWAY



Source: Quantis, adapted from Science Based Targets Institute

STEP BY STEP PROCESS TO SET SBTS

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

1. Compile the inventory

GP, **as the reporting entity**, consolidates its GHG emissions from its scope 1 and 2, and scope 3, category 15 from portfolio companies in all managed funds.

2. Determine scope 1 and 2 target ambition

Scope 1 Direct

Scope 2 Indirect

3. Determine if scope 3 categories 1-14 targets will be set

Scope 3 Category 1-14

E.g. optional targets on business travel?

4. Identify all relevant and required asset classes where scope 3 category 15 targets must be set.

Scope 3 Category 15: PCs in all managed funds

5. Develop asset class level targets using relevant methods

Required: PE direct investments (buyout, growth, and venture capital)	SBT portfolio coverage/ temperature rating
Required: PE direct investments in real estate and electricity generation	Sectoral Decarbonization Approach
Optional: Credit/Private debt, Fund of Funds, Secondaries	Optional temperature rating targets/ recommended actions

6. Develop public target language and action summary

After target approval

7. Announce, report, track, and re-calculate

8. Achieve portfolio SBTs

Source: Science Based Targets Institute

INDUSTRIAL DECARBONIZATION IN 2030 BY THE NUMBERS

MISSION POSSIBLE PARTNERSHIP
WE MEAN BUSINESS COALITION
Energy Transitions Commission
RMI
WORLD ECONOMIC FORUM

AVIATION

300
SAF plants

40
Mt of SAF (for 10-15% of SAF in aviation supply globally)

TRUCKING

7
million zero emissions trucks by 2030

1.6
million overnight depot chargers

600K
public high speed chargers for battery electric trucks

SHIPPING

200
ships using zero emission fuel

5%
zero emission fuel in international shipping

STEEL

70
(near) zero emission steel plants

170
Mt of near-zero-emissions primary steel produced

ALUMINIUM

40
new low-carbon smelting and refinery plants

43%
of aluminium production to come from recycling by 2030

CONCRETE

20+
commercial-scale carbon capture, usage and storage plants

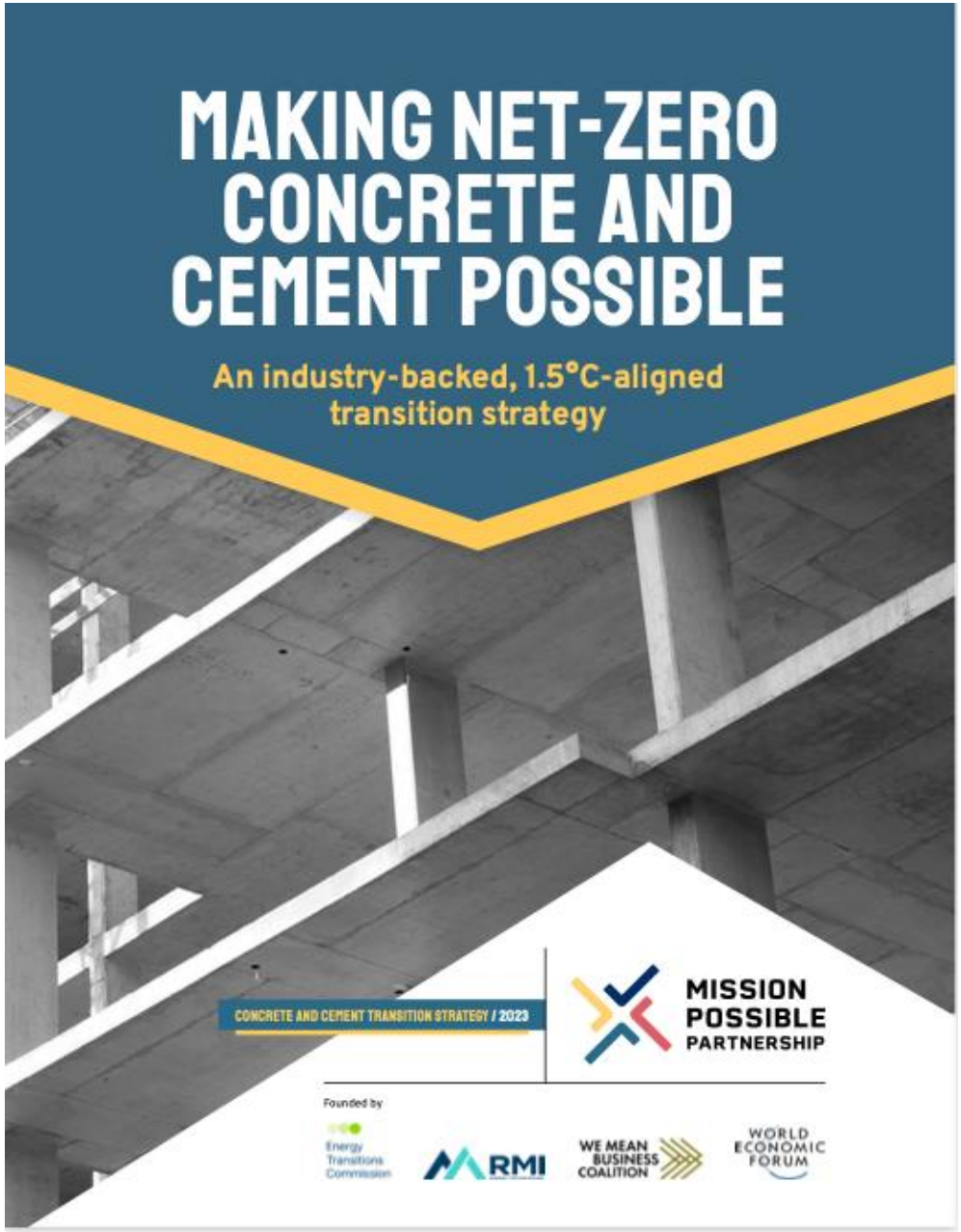
These would need to deliver

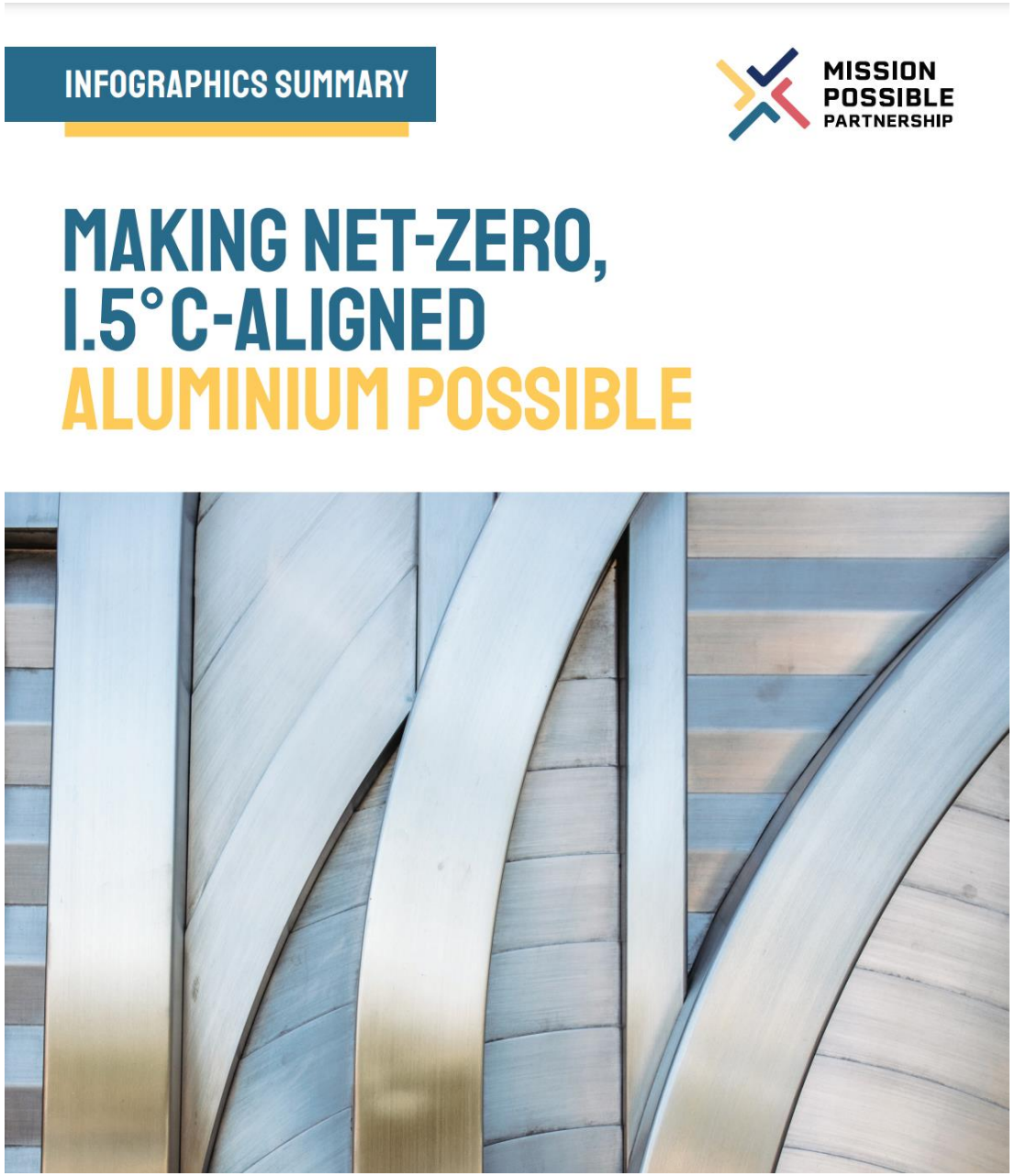
160
million m^3 concrete

CHEMICALS

60
green and blue ammonia plants

50
Mt of near zero emissions ammonia produced





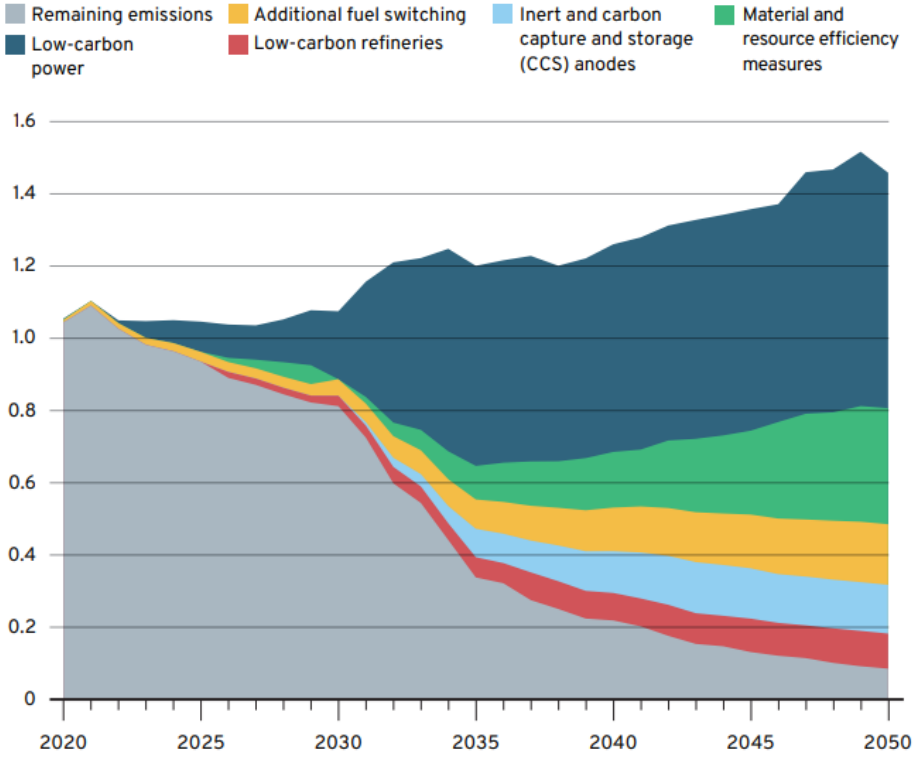
Source: Mission Possible Partnership

MAKING NET-ZERO, 1.5°C-ALIGNED ALUMINIUM POSSIBLE

MISSION POSSIBLE PARTNERSHIP

1 The solution: Low carbon power is vital

Emissions pathways, Gt CO_2e/y



% of cumulative reduction, 2022–50

55%–60% — **Low-carbon power**
- High usage of CCS or new grid connections
- Introduction of nuclear small modular reactors (SMRs)
- Grid decarbonisation

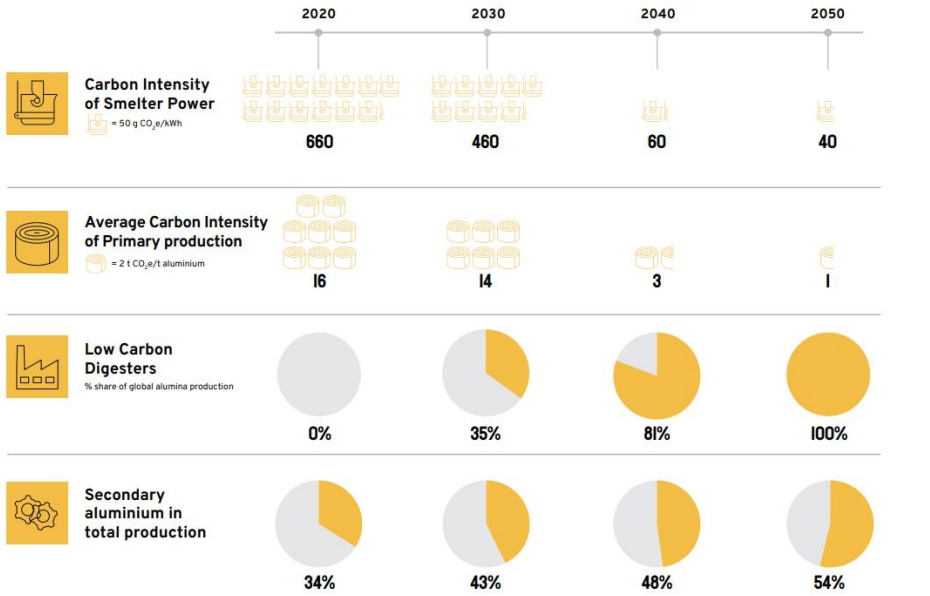
15%–20% — **Material and resource efficiency**
- Improved recycling rates
- Higher design efficiency

10%–15% — **Additional fuel switching**
- Fuel switching for mining, casting, recycling and processing
- Decarbonisation of electricity use across value chain

10% — **Low carbon anodes**
- Develop low-carbon anode production technology, including inert anodes and CCS retrofits

5%–10% — **Low-carbon refineries**
- Deployment of low-carbon boilers (electric and hydrogen) and heat recovery systems
- Develop low-carbon calciners (electric and hydrogen)

3 Key milestones



4 Priorities for this decade

INDUSTRY ACTION TO BOOST SUPPLY
- **Invest in RD&D** for low-TRL technologies in refineries and anodes starting their roll out by the end of the decade
- Develop **site-specific decarbonisation of power**, particularly focusing on decarbonisation power over the next decade

ALUMINIUM DEMAND
- Key users of aluminium to commit to **buying low-carbon products** with a green premium
- Work with government and secondary producers to increase efficient aluminium use and recycling

FINANCE ACTION
- Mobilise capital across the electricity and aluminium sector in integrated projects
- Establish **climate-aligned investment principles** for near-zero emissions aluminium production

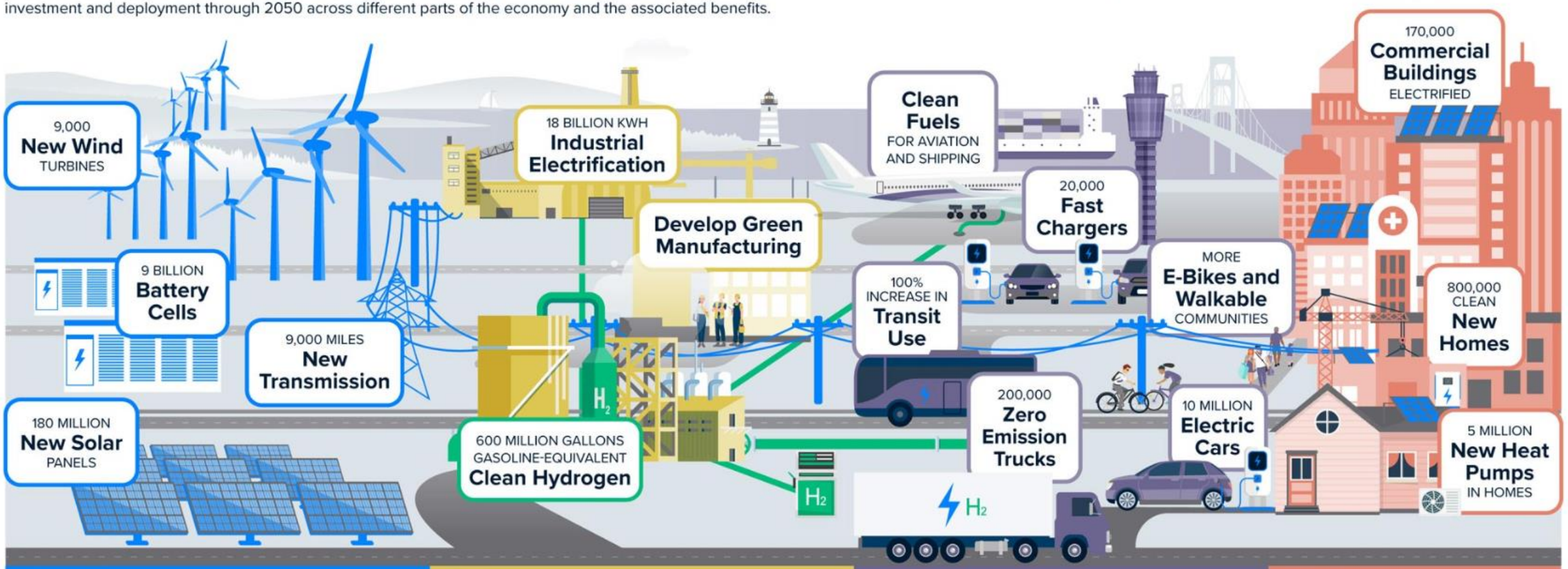
GOVERNMENT ACTION
- Reduce cost differential between low-carbon and fossil-based-aluminium, e.g., by carbon pricing
- Use **government procurement** levers to support the development of a market for low carbon aluminium
- Work with producers and regulators to integrate aluminium smelters into electricity, CCS, and hydrogen grids

Source: Mission Possible Partnership

Clean Energy Economy Opportunity

MICHIGAN

This chart depicts the economic opportunity of the energy transition by showing estimated clean technology investment and deployment through 2050 across different parts of the economy and the associated benefits.



Electricity 49 | **Industry** 49 | **Transportation** 48 | **Buildings** 31

Size of bars based on current annual greenhouse gas emissions (million metric tons CO_2e)

HUMAN IMPACT

80,000 New Clean Economy **JOBS**

$7 Billion per year saved from AVOIDED DEATHS

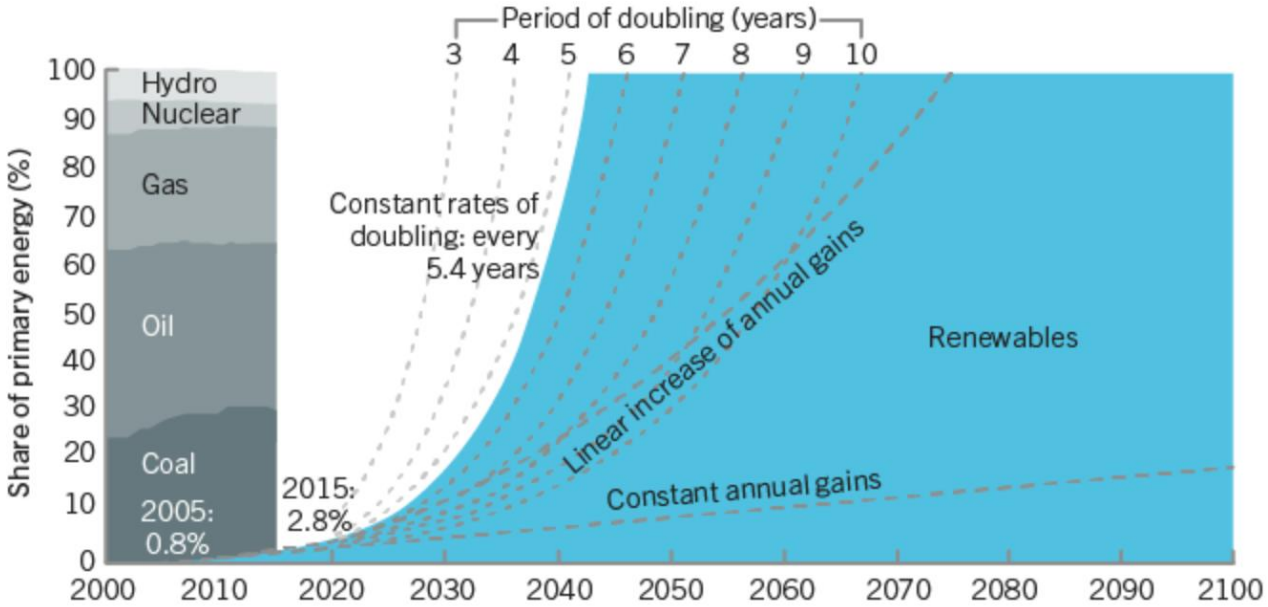
10,000 FEWER YEARLY **Asthma Attacks**

$30 Billion Potential Federal Investment from IRA

This data came from the Net-Zero America project and the Energy Policy Simulator and may not align with other state-specific modelling. Additional information at: rmi.org/state-graphics

Good News in Renewables

- Major cost declines expected to continue, halving price by 2030
- Fossil fuel demand has likely peaked in the electricity sector
- By 2030, solar and wind to supply over 1/3rd of electricity globally



Green > Green News

'The more you install, the cheaper it gets': Wind and solar to produce 33% of global power by 2030

By Euronews Green with Reuters

Published on 15/07/2023 - 08:00 • Updated 02/08/2023 - 17:44

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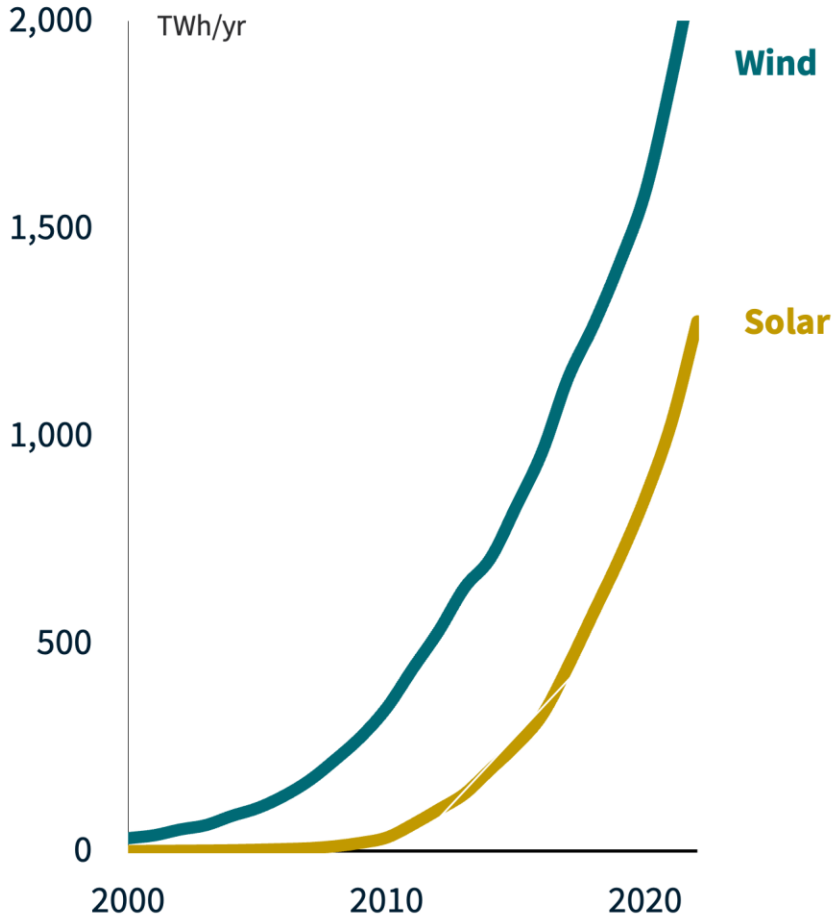
Energy prices will drop as wind and solar production increases

Source: Adapted from Rockström et al., 2017

Adoption and Cost of Renewables
Source: Rocky Mountain Institute

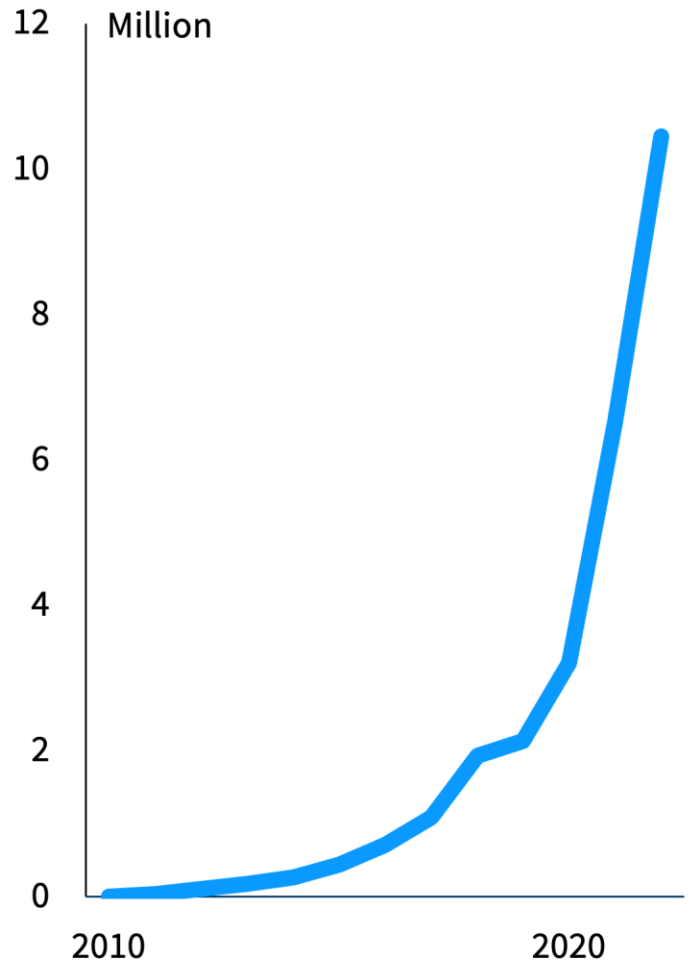
Exponential Energy Change Is All around Us

Annual solar & wind generation



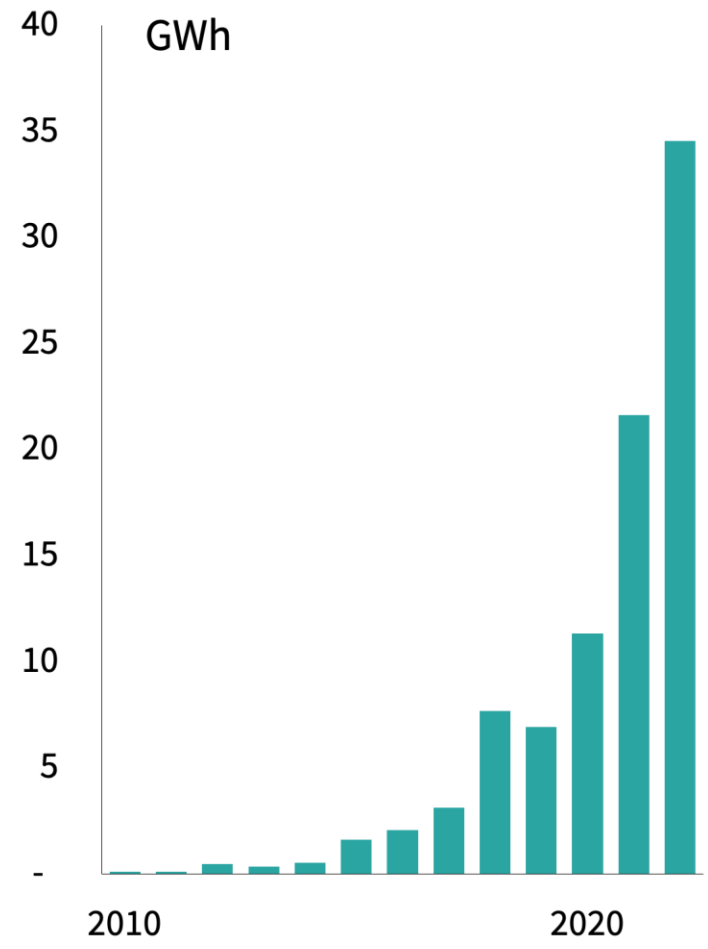
CAGR 15% 29%

Annual EV sales



58%

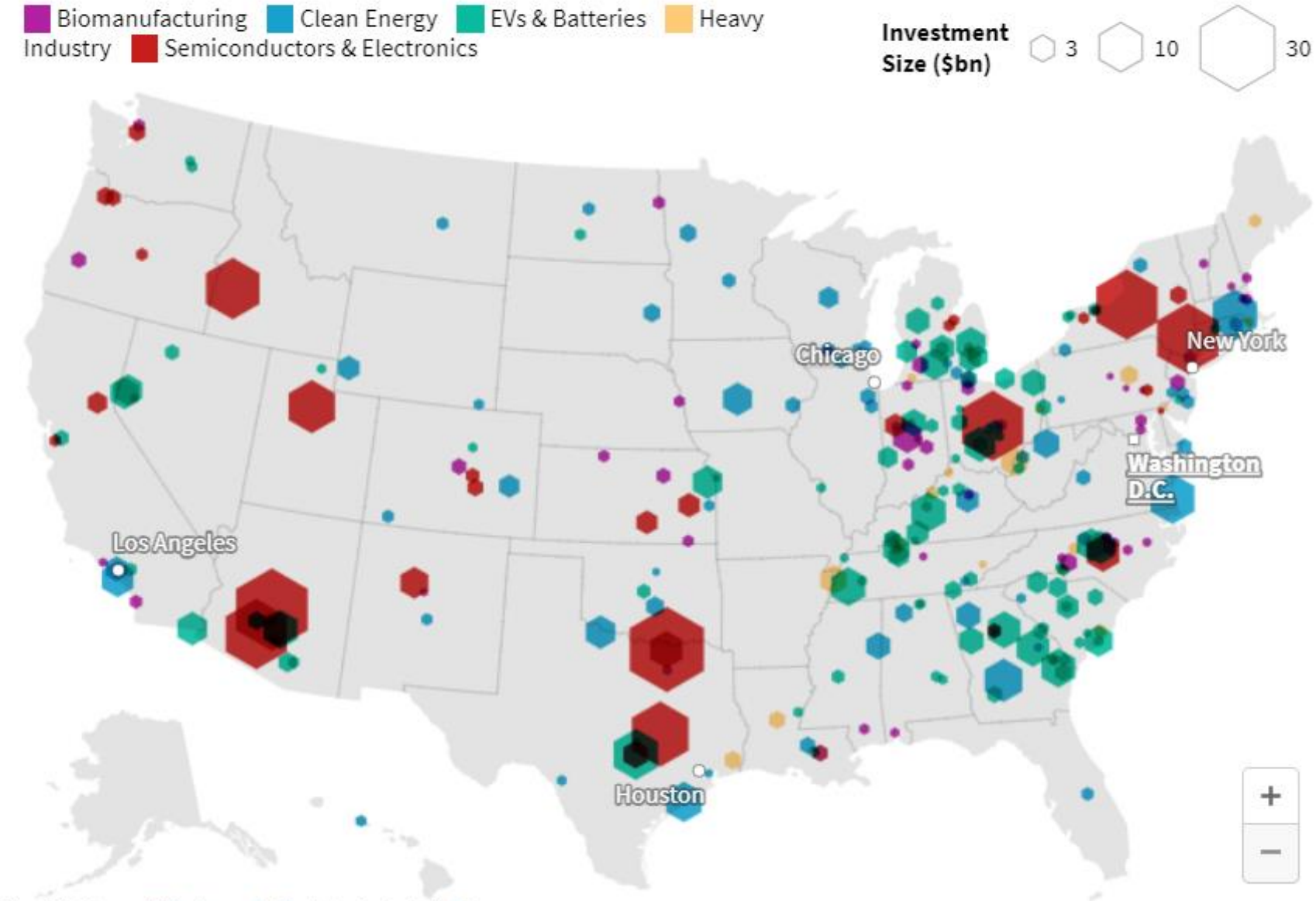
Annual battery storage sales



54%

Source: BNEF, BP, Ember; Note: CAGR is the compound annual growth rate between 2012-2022

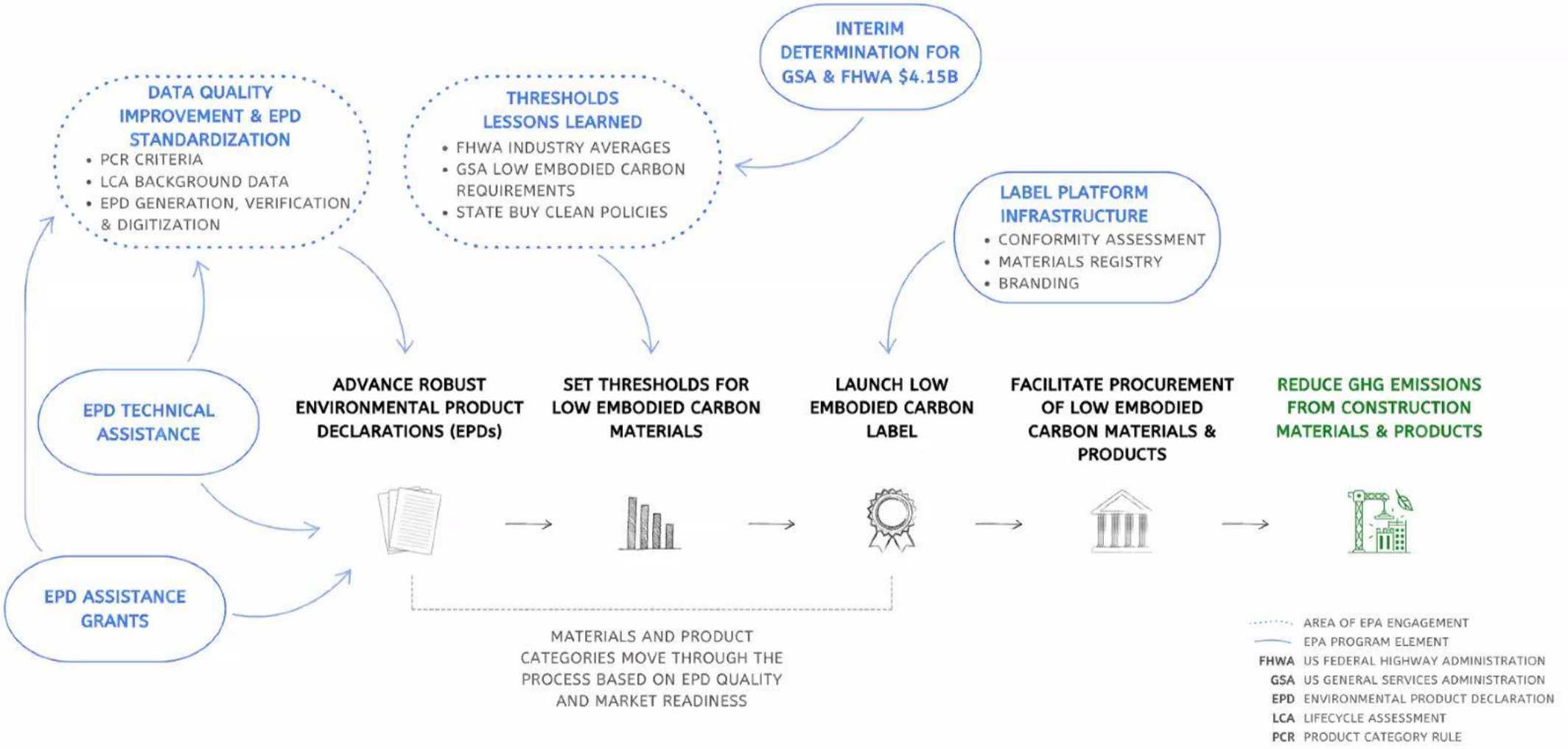
The US has seen an unprecedented wave of clean energy & EV investment announcements since 2021



Map: RMI • **Source:** White House • Get the data • Created with Datawrapper

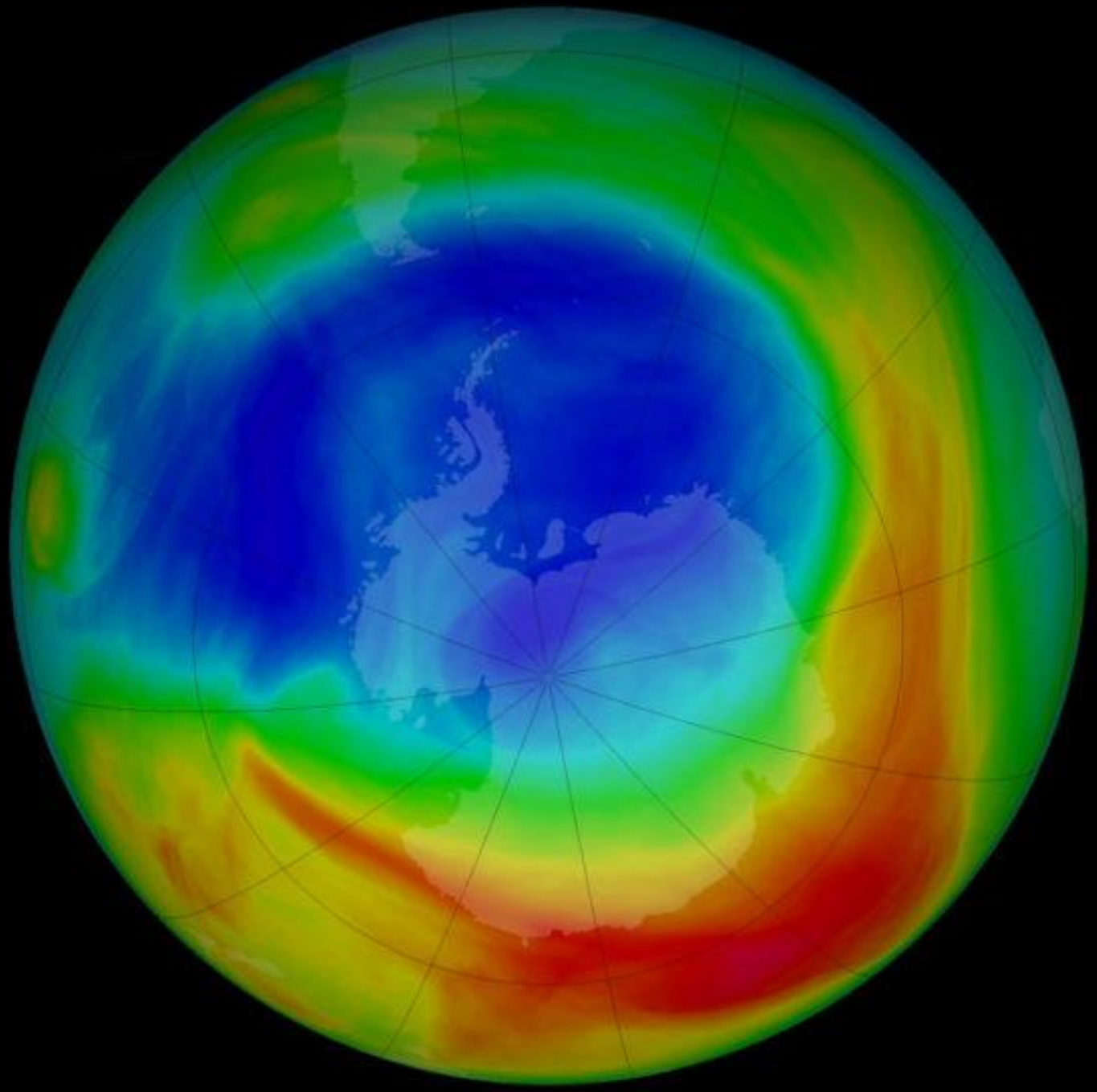
EPA's Low Embodied Carbon Construction Materials Program Approach

Key elements to facilitating procurement of lower embodied carbon construction materials and products



Source: EPA Webinar for Proposed Rule, Low Embodied Carbon Construction Materials

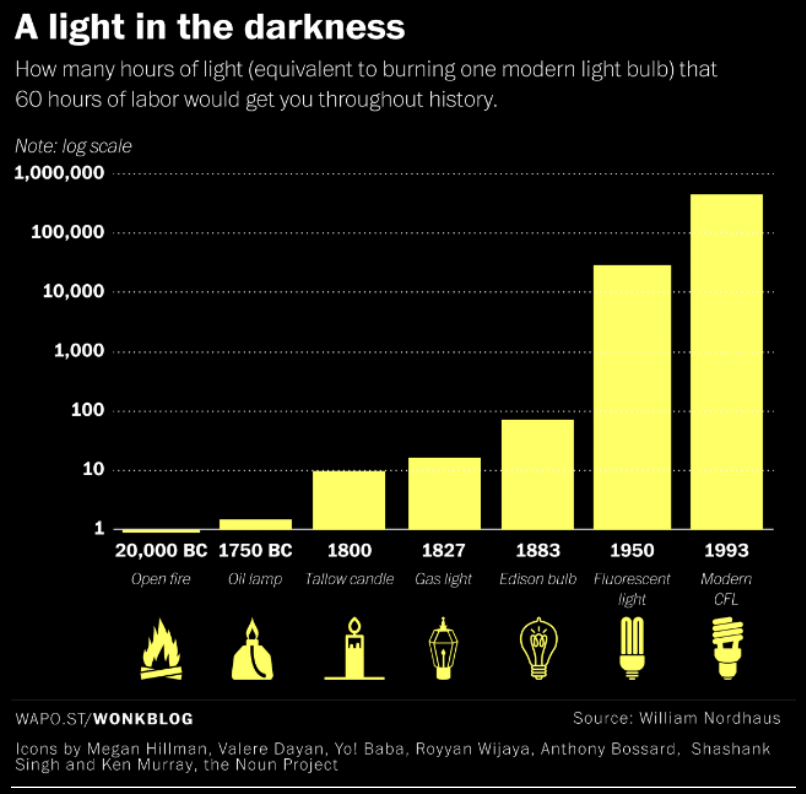
We Can Make Big Change



Source: NPR via UN Research Report

"The amount of work that once bought an hour of light now buys 51 years of it."

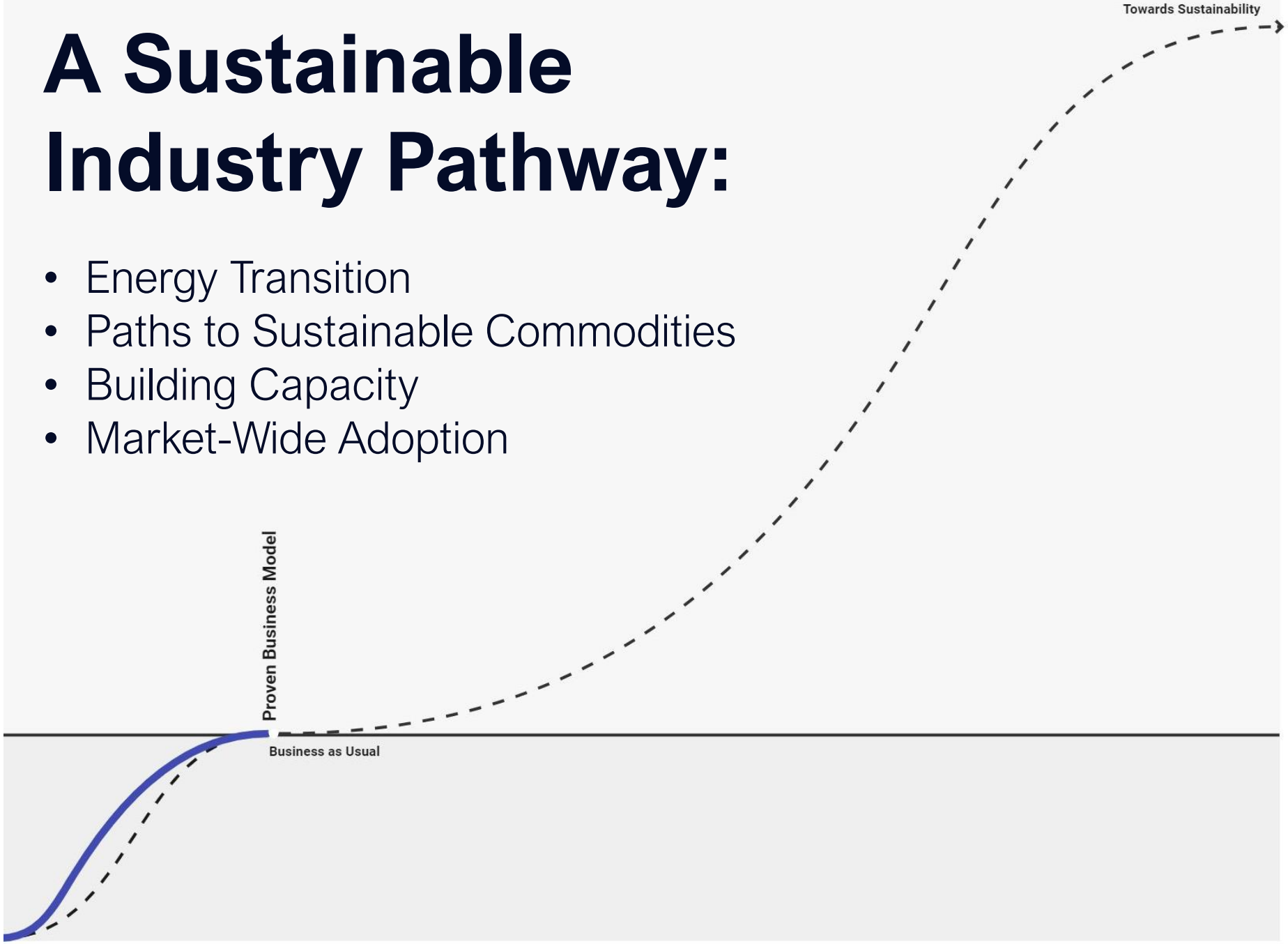
– *Washington Post*



Light per Work Hours: comparing standards of living across time periods, Yale Economist William Nordhaus, 1994 *Via: Washington Post*
Black Marble Photograph Showing crest of Sunrise on Earth, 2012 *Source: NASA*

A Sustainable Industry Pathway:

- Energy Transition
- Paths to Sustainable Commodities
- Building Capacity
- Market-Wide Adoption

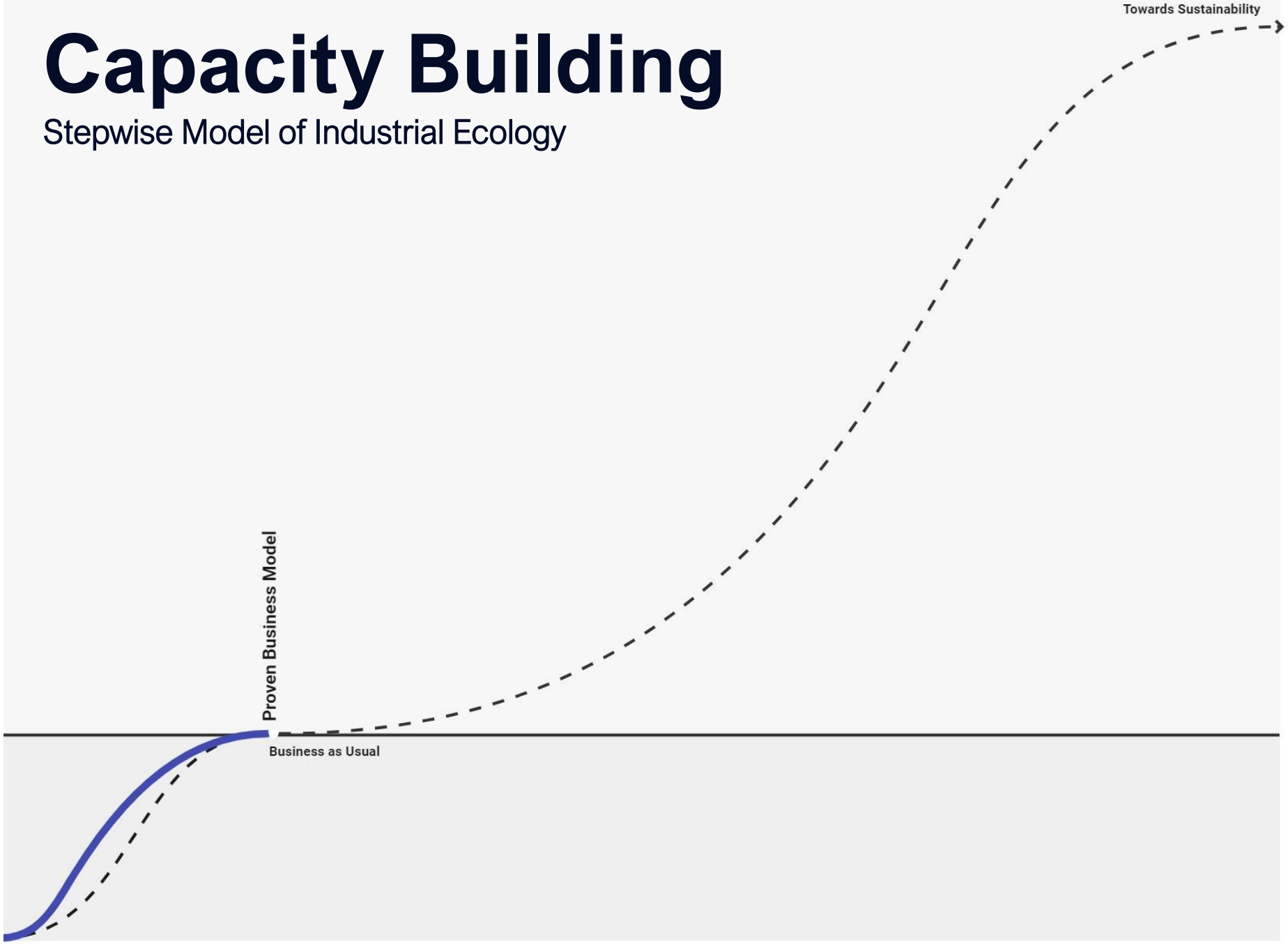


Proven Business Model

- **Market Competition**
- **Regulation and Policy**
- **Maximizing Profit**
- **Technology**
- **Dematerialization**

Capacity Building

Stepwise Model of Industrial Ecology



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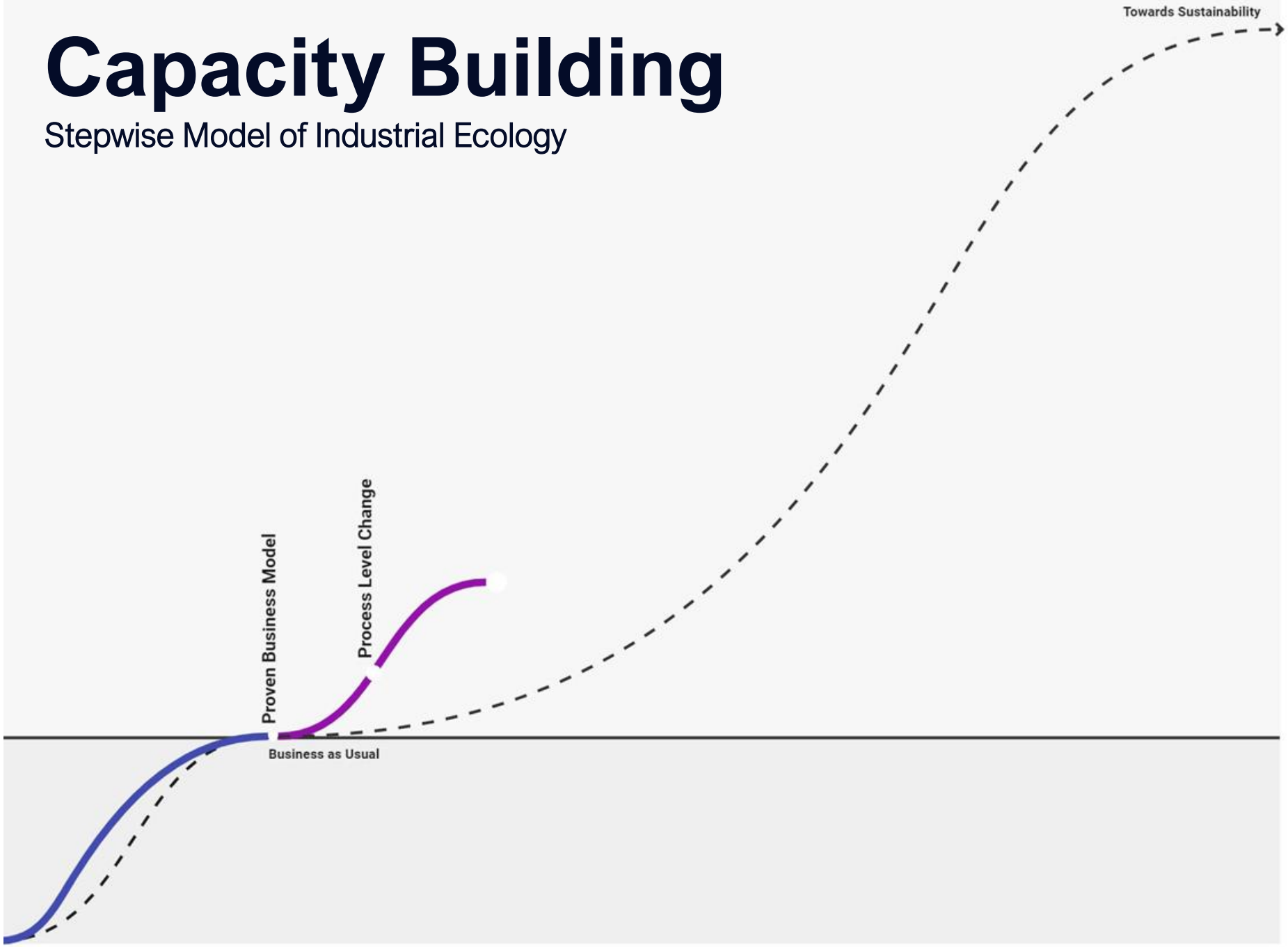

Process Level Change

- **Input-Output Analysis**
- **Material Flow Analysis**
- **Cleaner Production**

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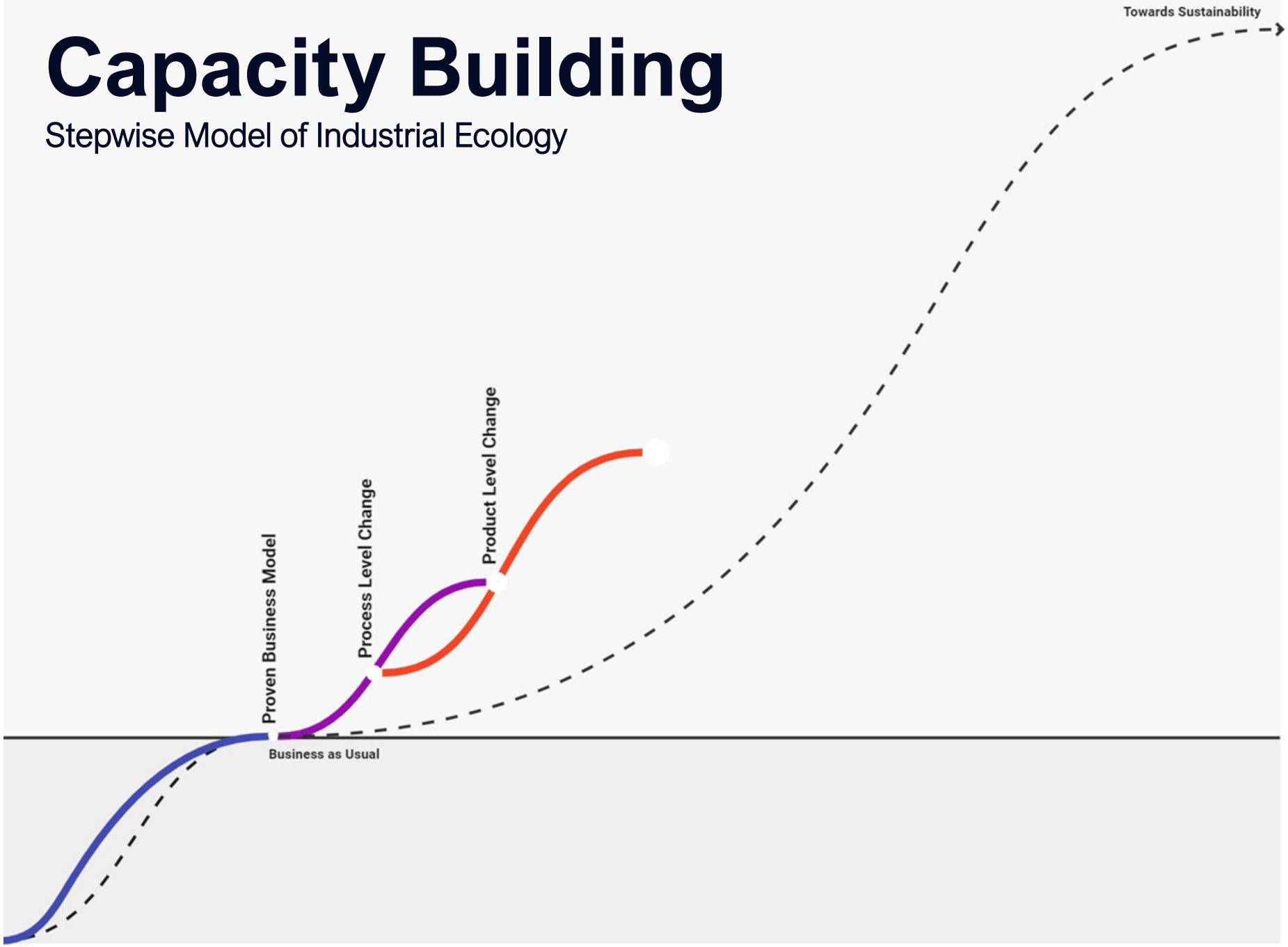

Product Level Change

- **Life Cycle Assessment**
- **Supply Chain Management**
- **Carbon Footprints of the Product**
- **Environmental Product Declarations**
- **Design for Environment**

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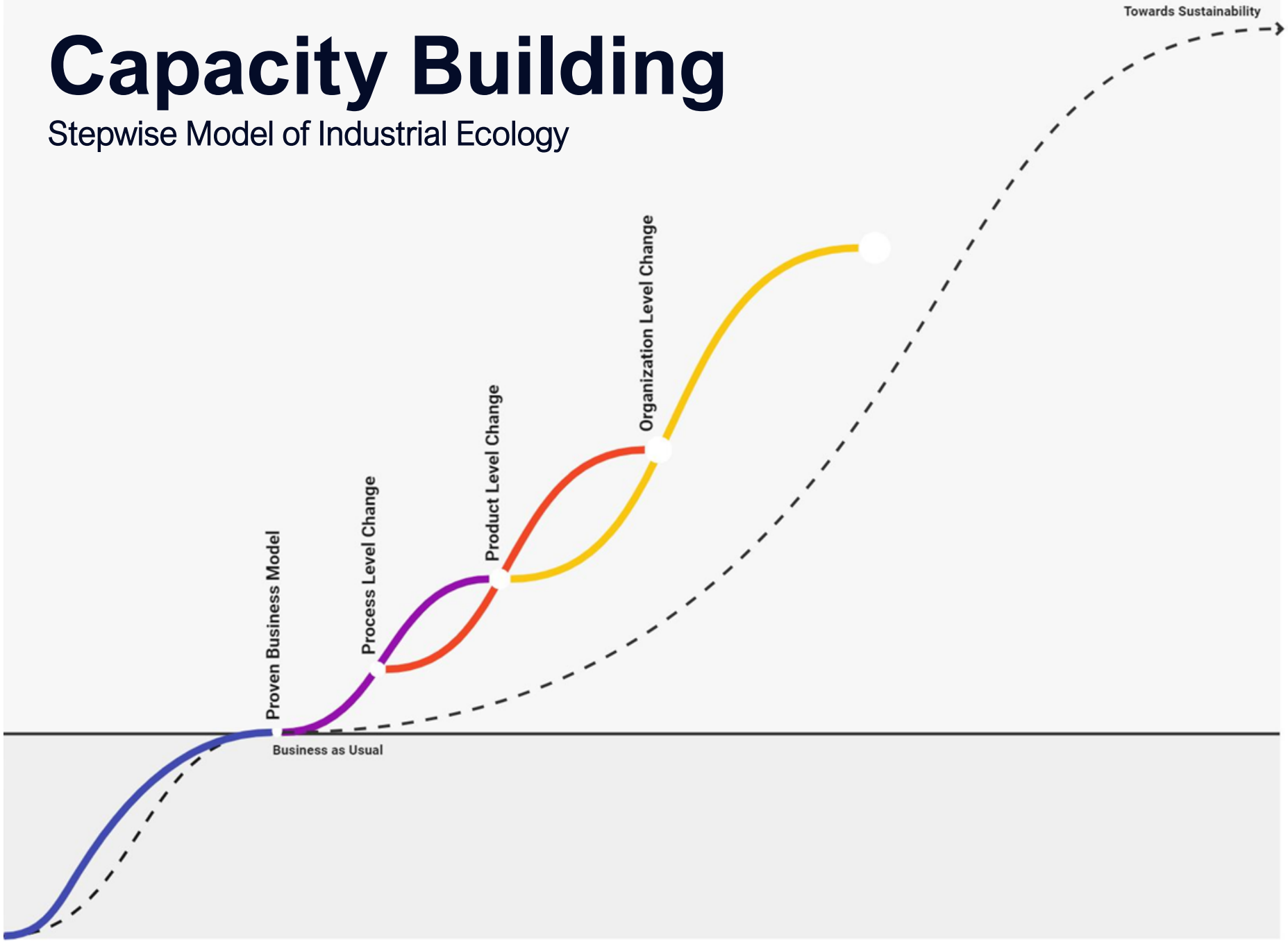

Organizational Level Change

- **Environmental Management System**
- **Environmental Performance Evaluation**
- **Key Performance Indicator**
- **Global Reporting Initiative**
- **Life Cycle Management**
- **Sustainable Business Models**

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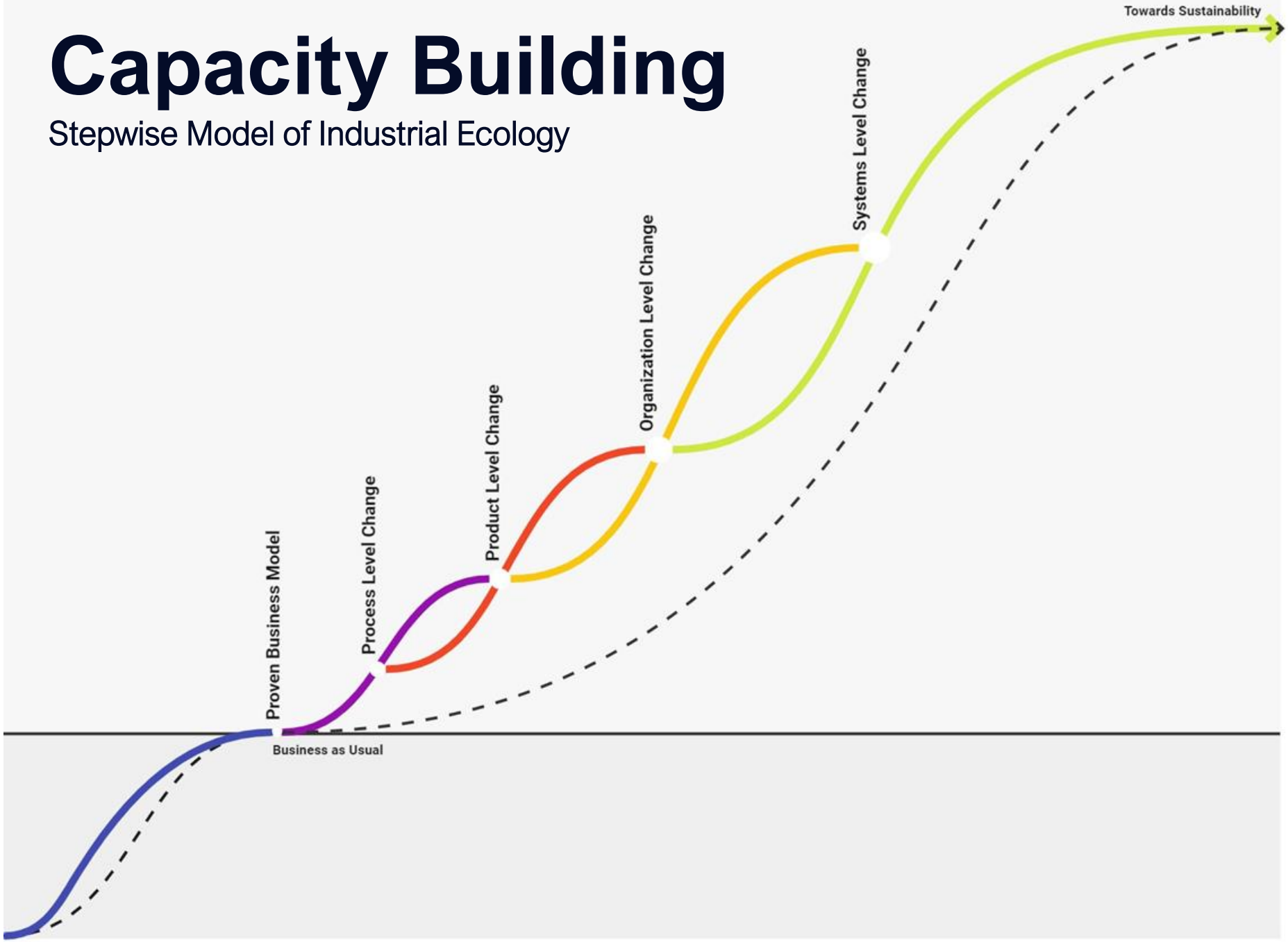

Systems Level Change
- **Industrial Ecology**
- **Corporate Social Responsibility**
- **Systems Engineering**

***** External Factors:***
- ***Policy***
- ***Regulation***

Organizational Level Change
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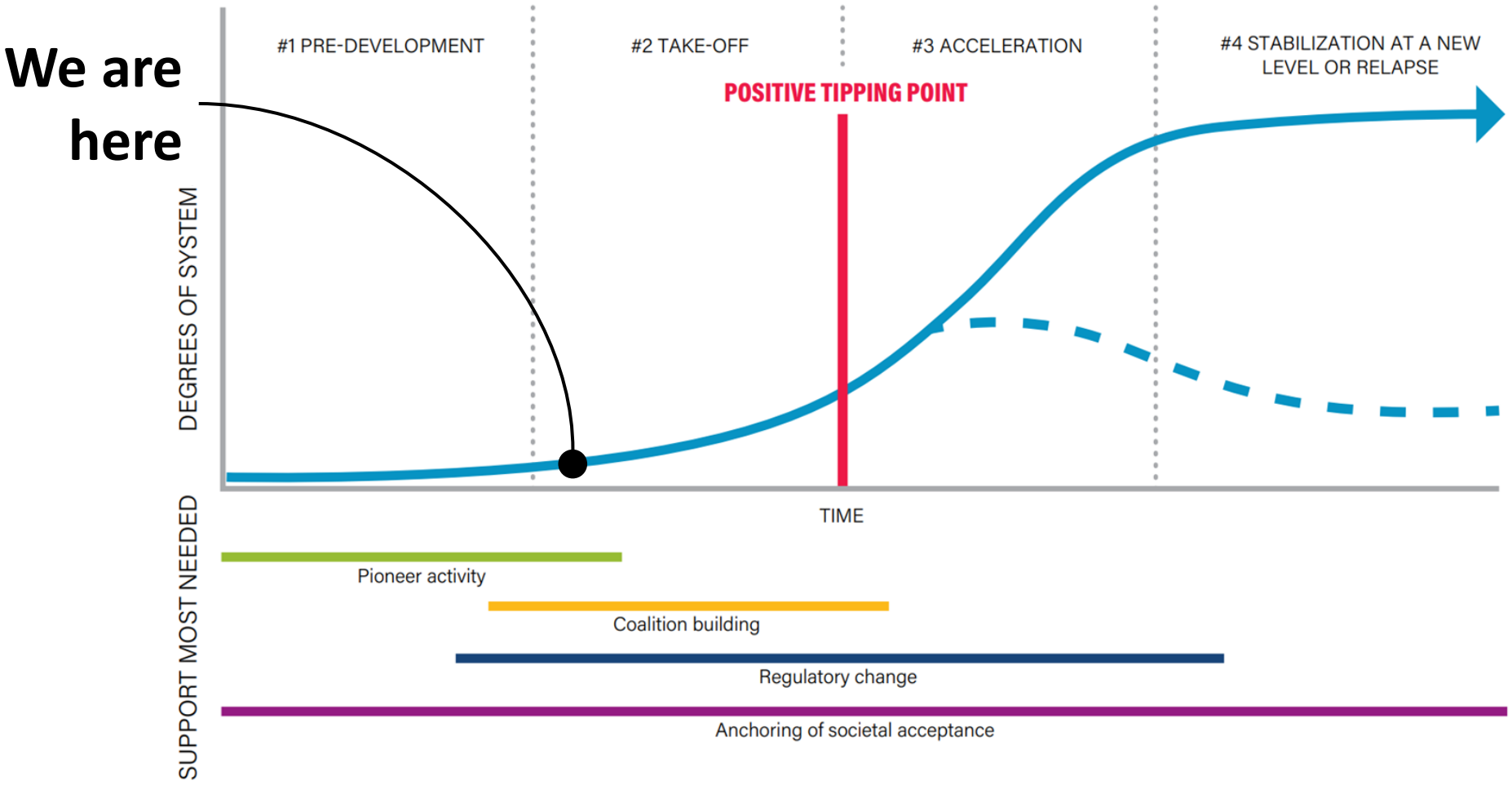
Figure 1 | Phases of Systems Change



Source: Adapted from ICAT 2020.

https://climatewayfinder.org/transformation-toolkit/how-transitions-work/

Accelerating Transition

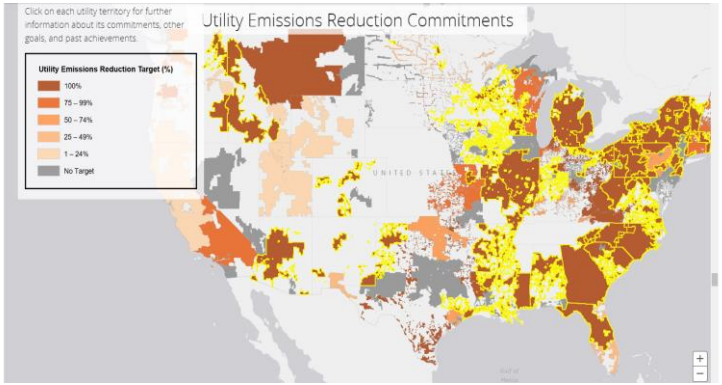
- In context of the wider building industry, coalitions to accelerate the learning curve
- ECHO coalition to standardize reporting definitions and scopes for embodied carbon in buildings, landscapes and infrastructure (it's coming)
- Embodied Carbon reporting in procurement policies: GSA, California, Oregon, Washington State, Minnesota and Colorado
- We have to know where we are to know where we're going
- Renewables transition commitments from federal gov't, State governments, Cities, Utility Providers, and Individual Businesses
- Moguls achieving targets: Apple, Amazon, Ford, BlackRock, Pfizer, IKEA, Microsoft, AstraZeneca

Environmental Product Declaration Requirements in Procurement Policies

An analysis of EPD definitions in Buy Clean and other North American procurement policies

REPORT | JULY 2021

CLF Carbon Leadership Forum



Consumers Energy Pledge is Net Zero by 2040
Source: https://www.nrdc.org/resources/race-100-clean

ECHO Project Tackles Embodied Carbon in the Built Environment

09/26/2023 | The Dirt Contributor

Trees and plants sequester carbon and provide multiple co-benefits. ASLA 2023 Professional General Design Honor Award. The University of Texas at El Paso Transformation. El Paso, Texas. Ten Eyck Landscape Architects, Inc / Adam Barbe

A group of built environment industry groups and movement leaders has shared a new collaborative project to rapidly reduce embodied carbon in the built environment. The goal of the project is to ensure all embodied carbon reporting at the whole building and whole project scale in the U.S. — including landscapes and infrastructure — follow the same clear definitions and scopes of included impacts.

This coalition was convened jointly by five leading non-profit organizations:

- Architecture 2030
- Building Transparency
- The Carbon Leadership Forum
- The International Living Future Institute
- The U.S. Green Building Council

It is comprised of representatives from:

- The American Society of Landscape Architects (ASLA)
- Climate Positive Design Challenge
- A&D Materials Pledge & 2030 Commitment (The American Institute of Architects)
- Contractors Commitment (Sustainable Construction Leaders)
- Infrastructure2050 (American Society of Civil Engineers)
- MEP 2040 Commitment

Sources: The DIRT, ASLA.org; CLF.org; NRDC.org