

# **BUILDINGENERGY BOSTON**

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## **A Framework for Action: What's Our Role?**

**Crystal Chissell (Project Drawdown)**

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**Northeast Sustainable Energy Association (NESEA)**

**March 1, 2022**

# PROJECT DRAWDOWN

**A FRAMEWORK FOR ACTION: WHAT'S OUR ROLE?**

**Crystal Chissell, JD, MS, MBA**  
**Senior Director**  
**Drawdown Communities**

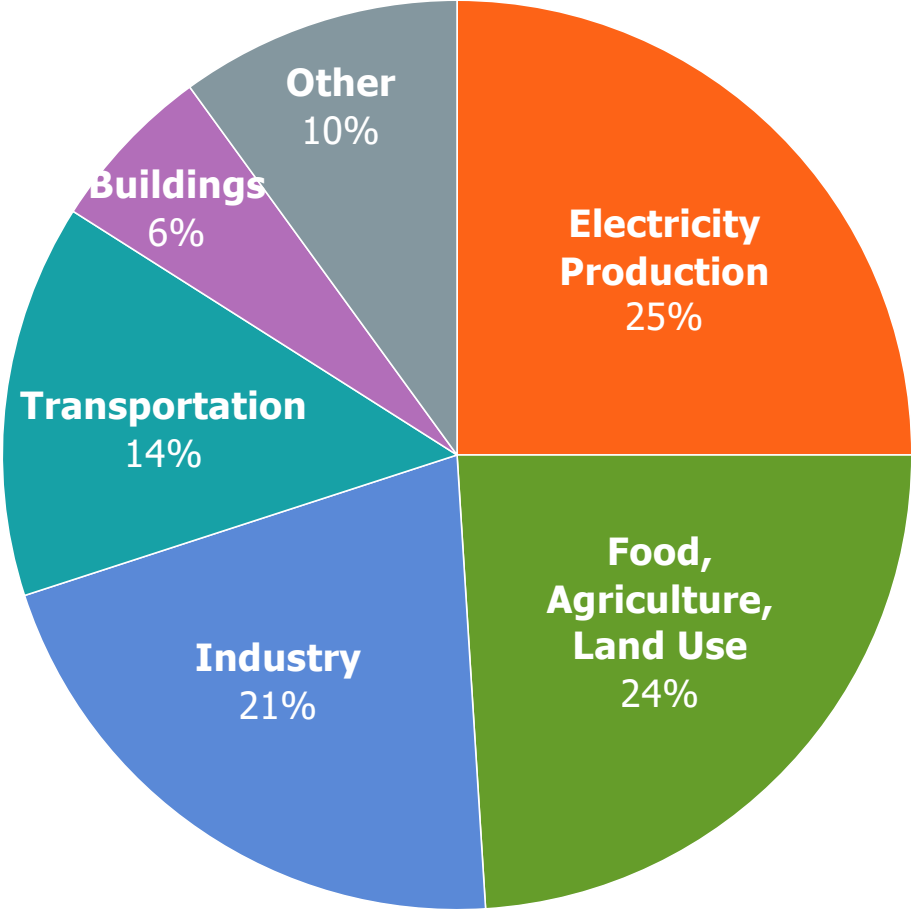


*Image Credit: NASA*

**GREENHOUSE GASES TRAP HEAT IN EARTH'S  
ATMOSPHERE, CAUSING AVERAGE GLOBAL  
TEMPERATURES TO RISE.**

- **CARBON DIOXIDE**
- **METHANE**
- **NITROUS OXIDE**
- **REFRIGERANT GASES**

# GREENHOUSE GAS SOURCES

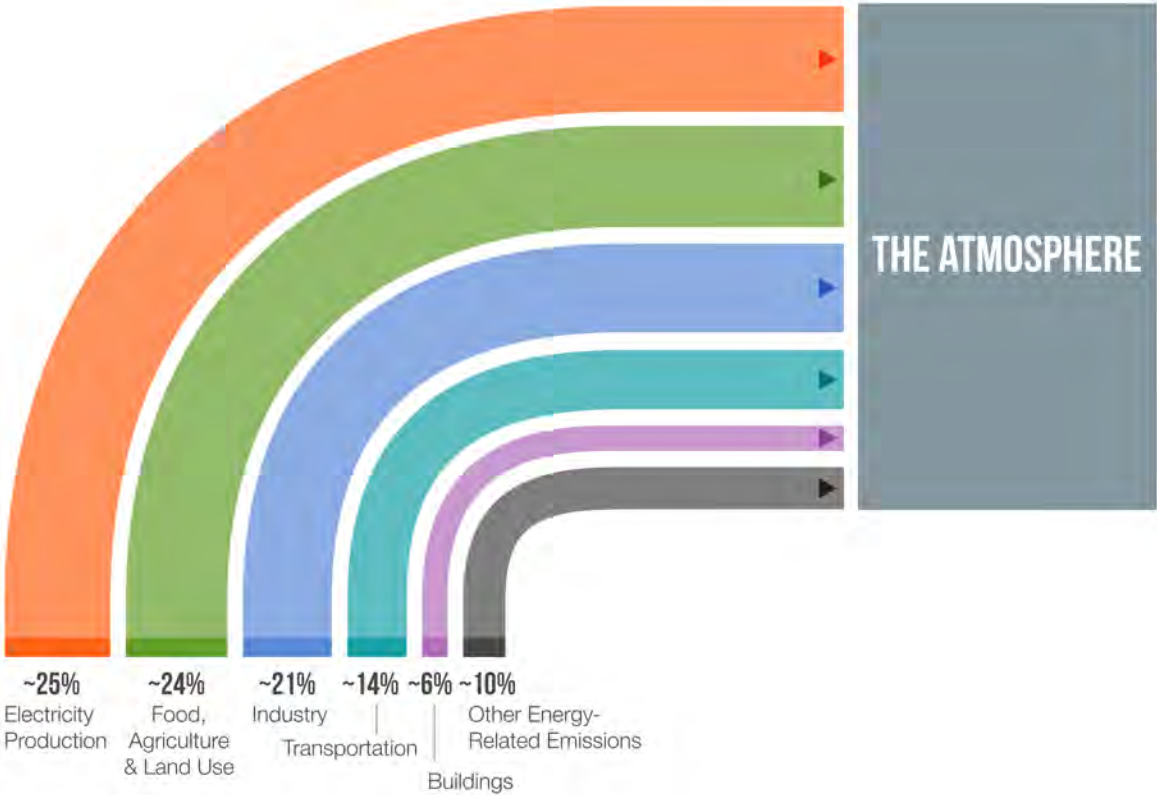


Source: IPCC WG3 AR5

# EMISSIONS SOURCES & NATURAL SINKS

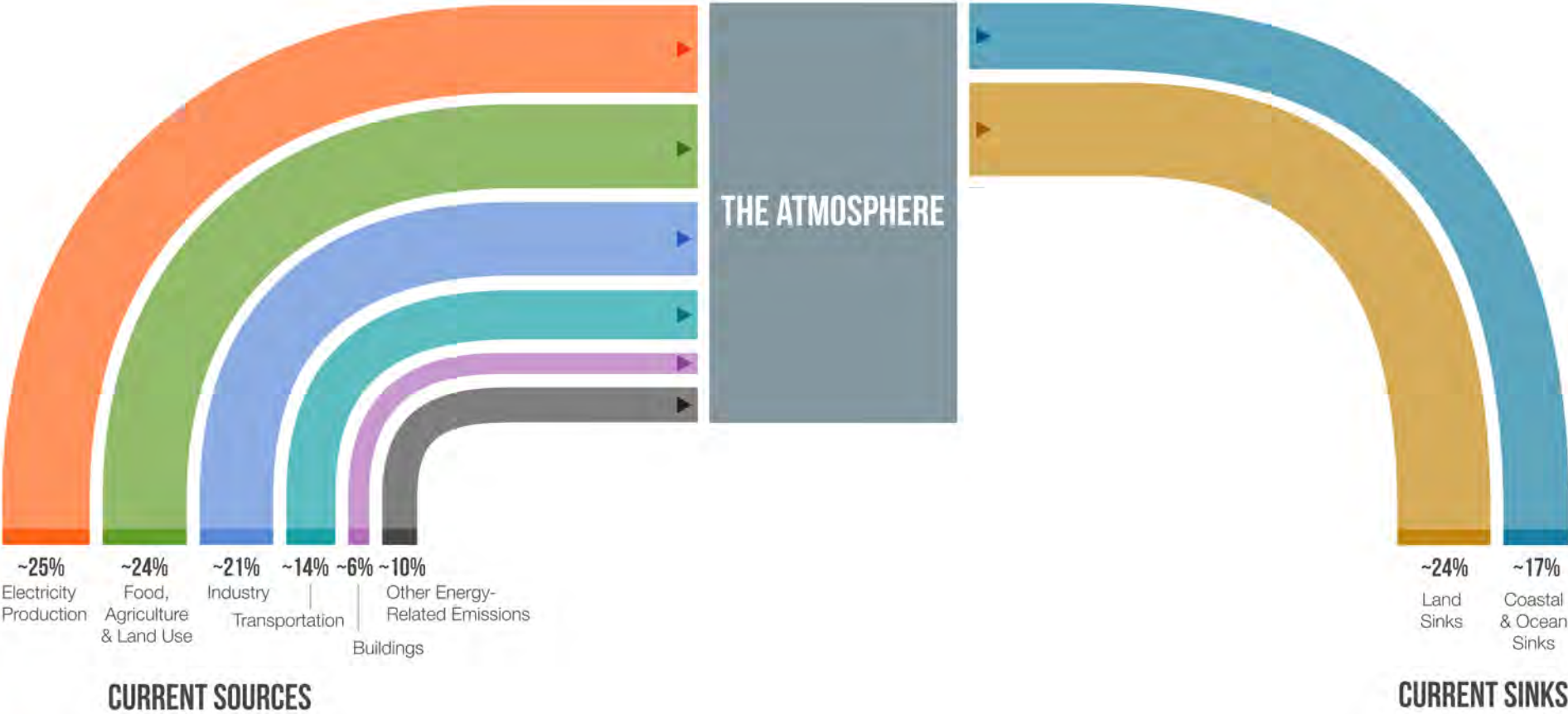


# EMISSIONS SOURCES & NATURAL SINKS



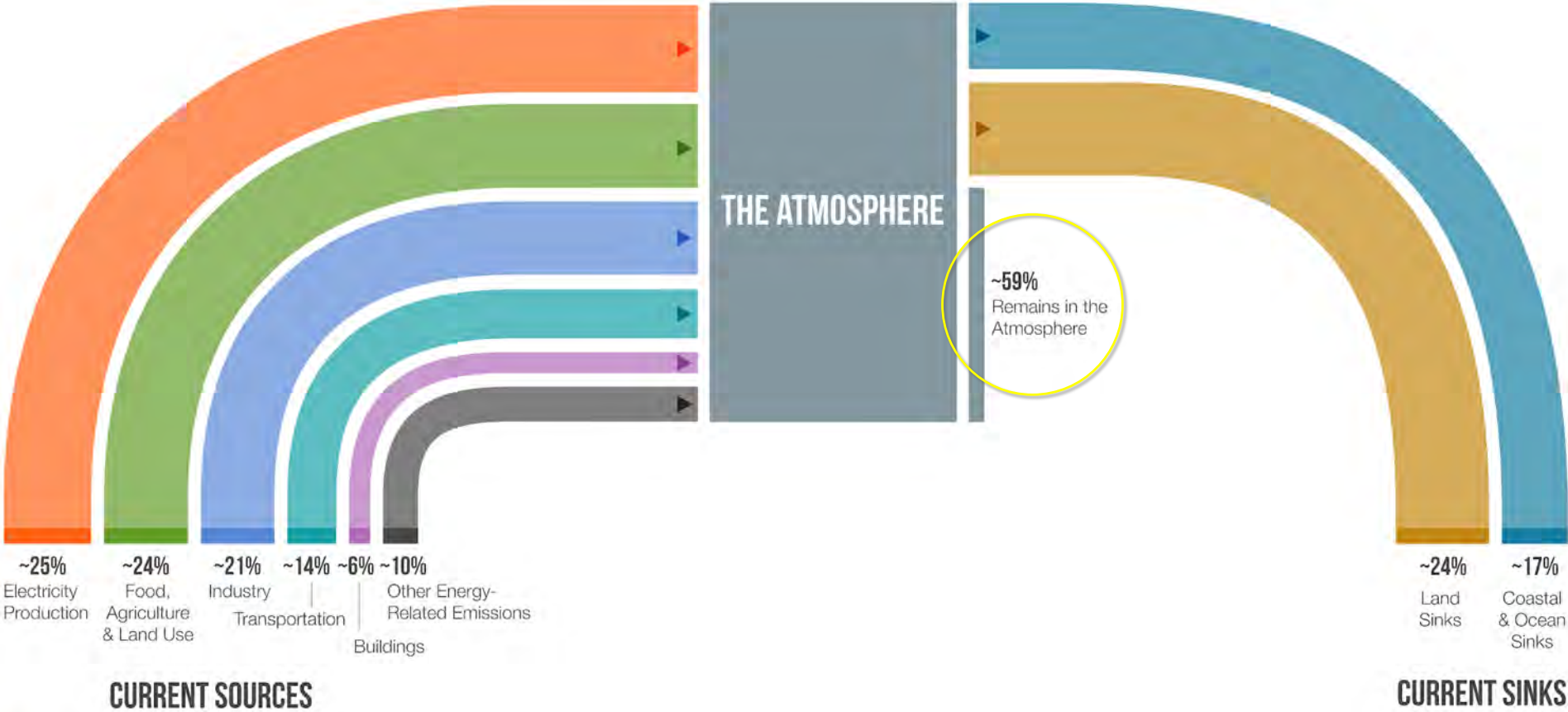
## CURRENT SOURCES

# EMISSIONS SOURCES & NATURAL SINKS





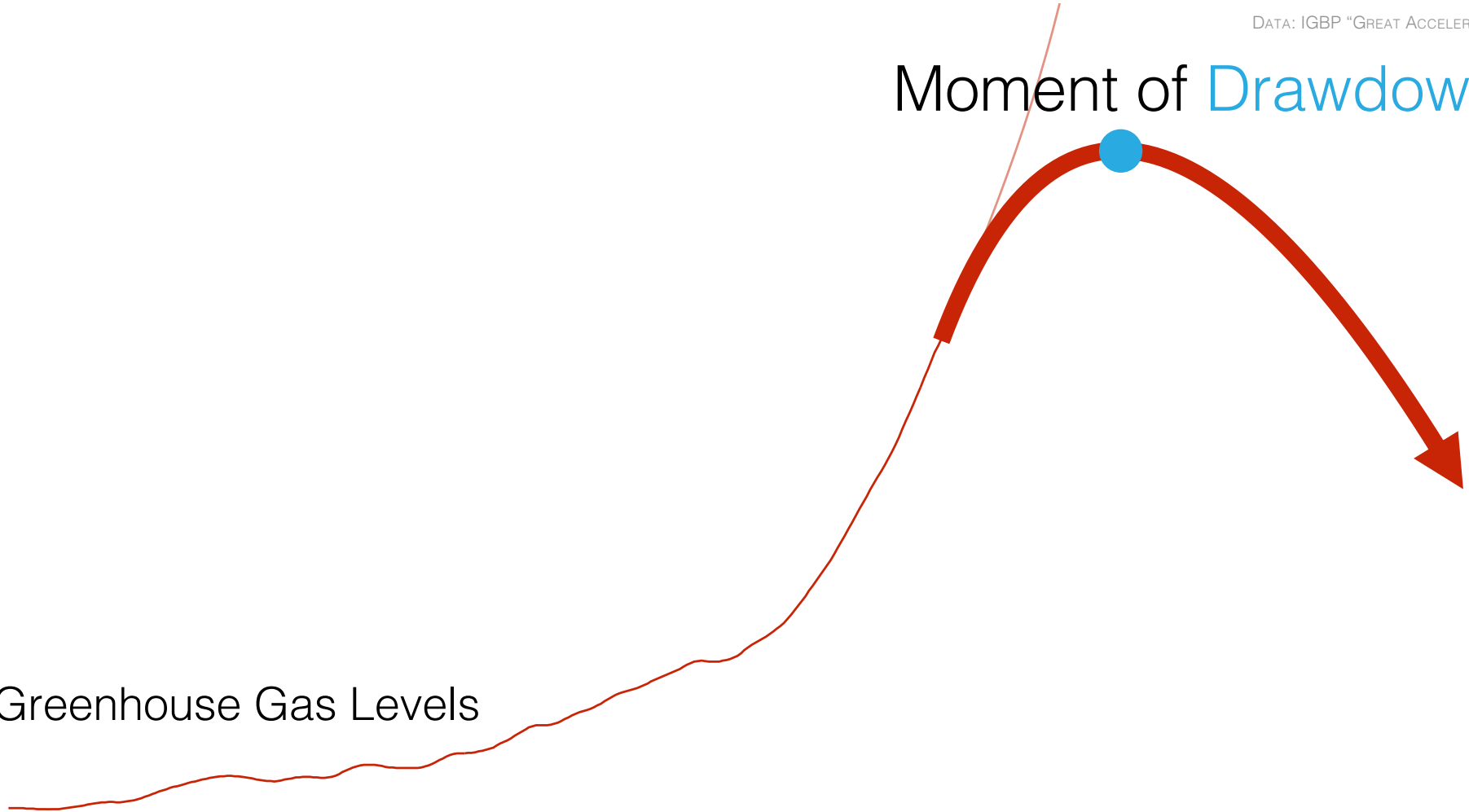
# EMISSIONS SOURCES & NATURAL SINKS



**WHAT IS DRAWDOWN?**

# Moment of Drawdown

Greenhouse Gas Levels



# **Drawdown solutions are technologies and practices that reduce greenhouse gas levels in the atmosphere**

**Currently available + Financially viable + Proven potential to reduce GHGs + Sufficient data available to model**

# DRAWDOWN FRAMEWORK FOR CLIMATE SOLUTIONS

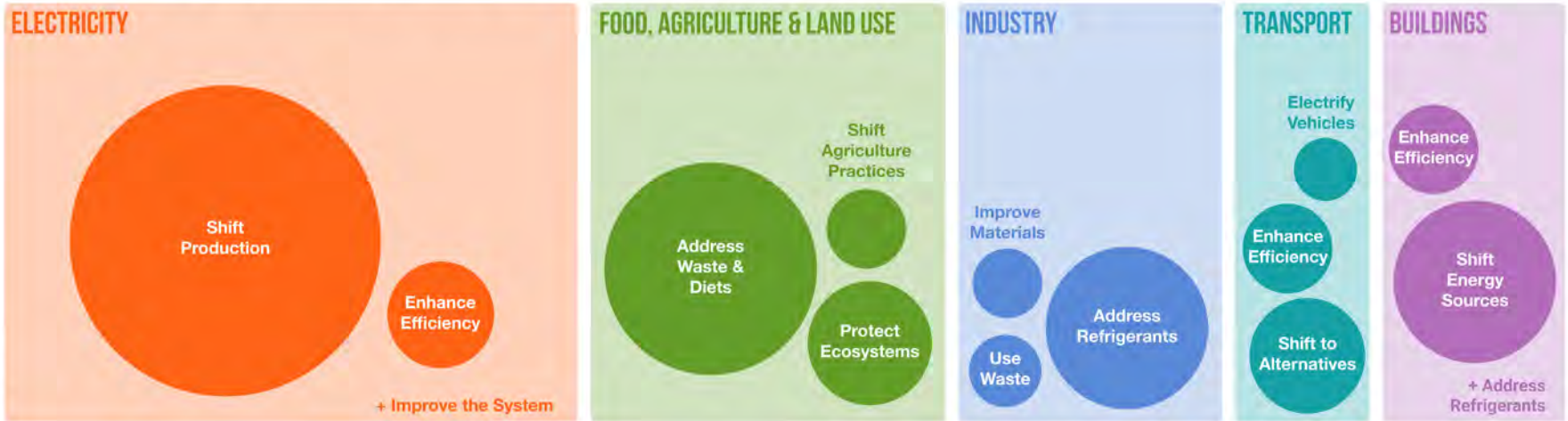
## How to Read It

Size represents maximum potential emissions reductions (CO<sub>2</sub>-eq (Gt)) 2020-2050

## SECTOR



## 1. REDUCE SOURCES

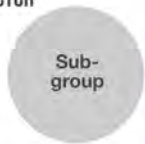


# DRAWDOWN FRAMEWORK FOR CLIMATE SOLUTIONS

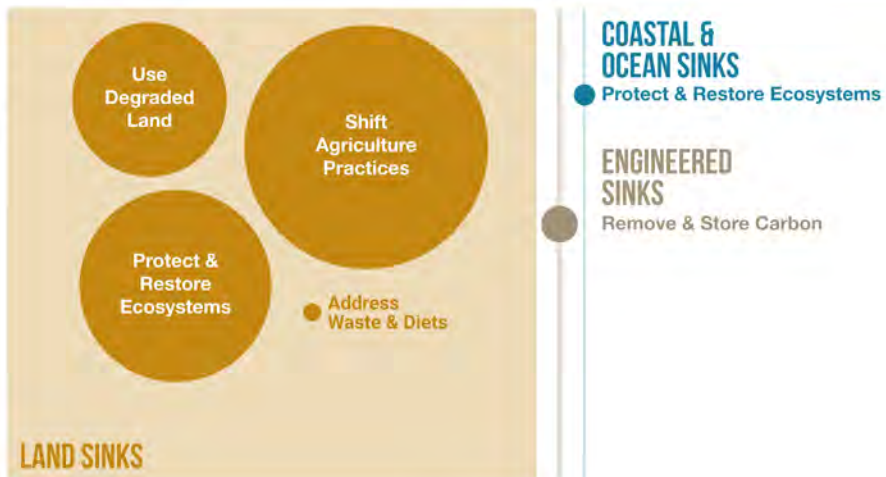
## How to Read It

Size represents maximum potential emissions reductions (CO<sub>2</sub>-eq (Gt)) 2020-2050

### SECTOR



## 2. SUPPORT SINKS



# DRAWDOWN FRAMEWORK FOR CLIMATE SOLUTIONS

## How to Read It

Size represents maximum potential emissions reductions (CO<sub>2</sub>-eq (Gt)) 2020-2050

### SECTOR



## 3. IMPROVE SOCIETY

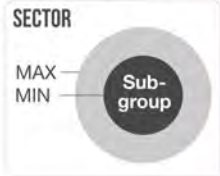
Health & Education

HEALTH & EDUCATION

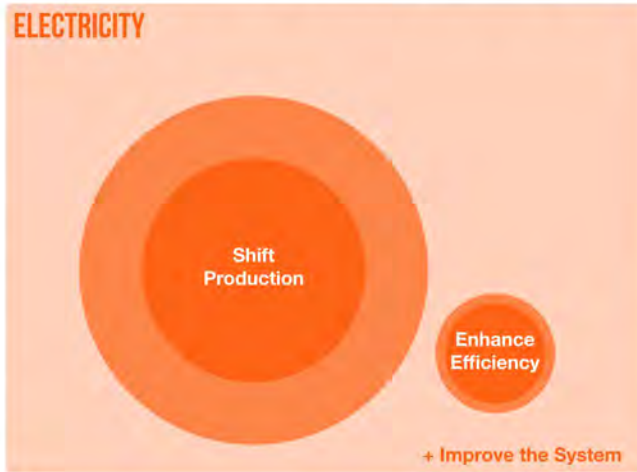
# DRAWDOWN FRAMEWORK FOR CLIMATE SOLUTIONS

## How to Read It

Size represents potential emissions reductions (CO<sub>2</sub>-eq (Gt)) 2020-2050



## 1. REDUCE SOURCES



## 2. SUPPORT SINKS



**COASTAL & OCEAN SINKS**  
● Protect & Restore Ecosystems

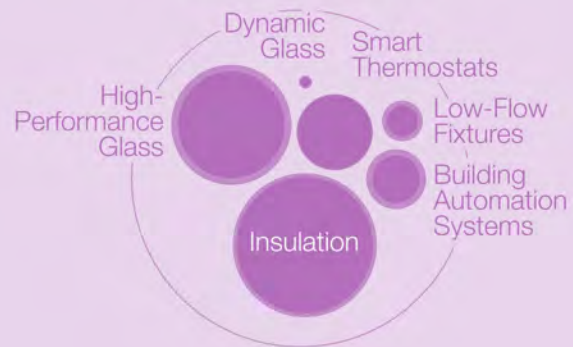
**ENGINEERED SINKS**  
● Remove & Store Carbon

## 3. IMPROVE SOCIETY

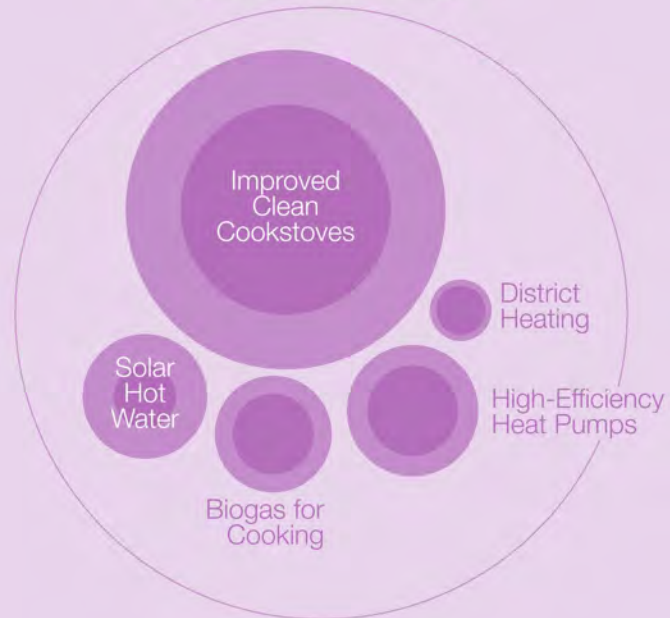




### ENHANCE EFFICIENCY



### SHIFT ENERGY SOURCES



**BUILDINGS**

*& Address Refrigerants*

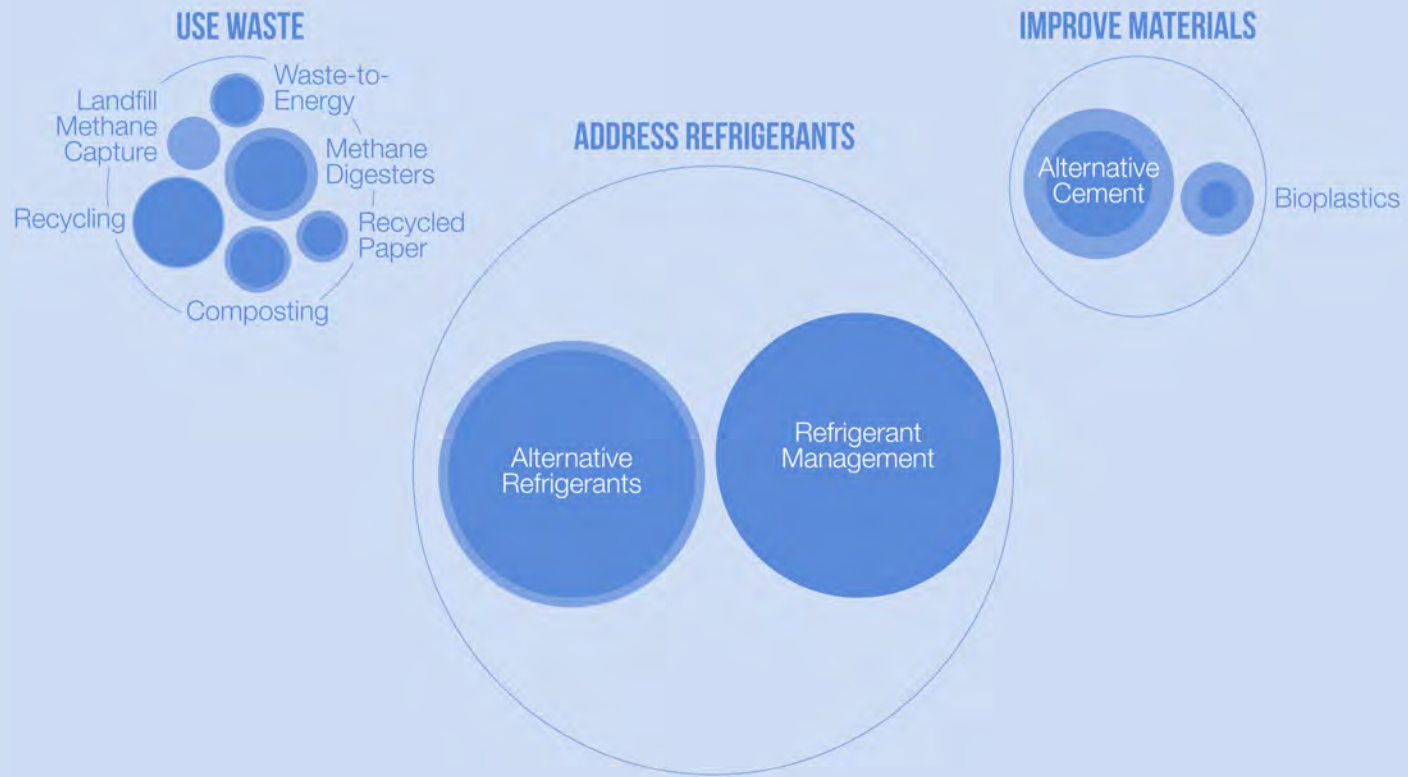


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# IMPROVED CLEAN COOKSTOVES

**31.34 – 72.65** GT

GIGATONS  
CO2 EQUIVALENT  
REDUCED / SEQUESTERED  
(2020-2050)



# INDUSTRY



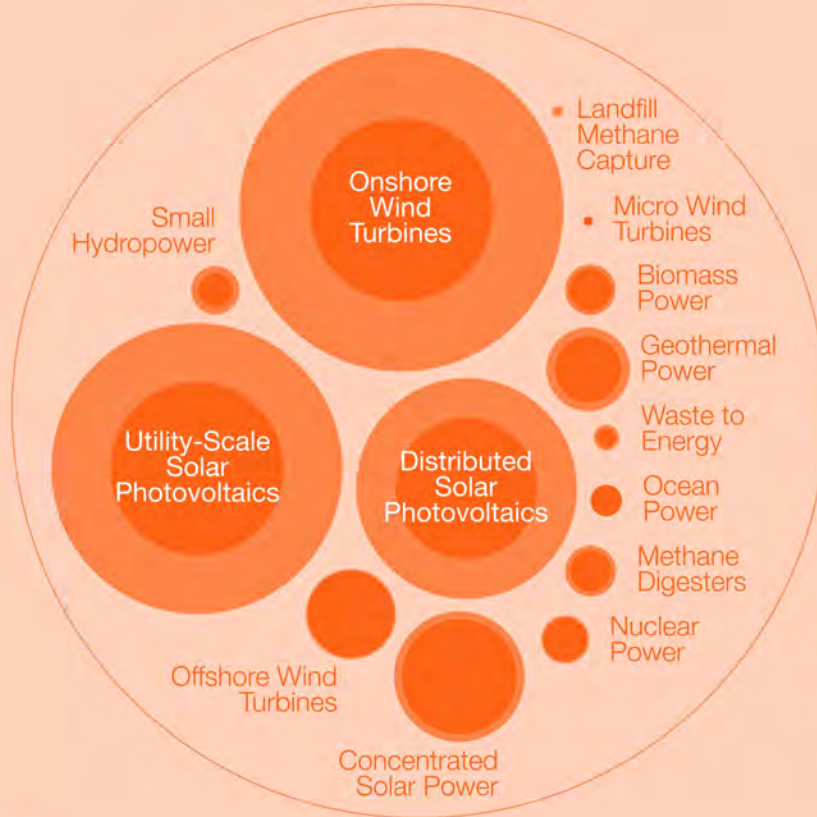
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# REFRIGERANT MANAGEMENT

**57.75** GT

GIGATONS  
CO<sub>2</sub> EQUIVALENT  
REDUCED / SEQUESTERED  
(2020-2050)

## SHIFT PRODUCTION




## ENHANCE EFFICIENCY



**ELECTRICITY**

*& Improve the System*



# DISTRIBUTED SOLAR PHOTOVOLTAICS

27.9 – 68.6 GT

GIGATONS  
CO<sub>2</sub> EQUIVALENT  
REDUCED / SEQUESTERED  
(2020–2050)

The image is a composite. The top half shows a panoramic view of a city, likely Zurich, with a river (the Limmat) flowing through it. The sky is blue with some clouds. The bottom half shows a close-up, high-angle view of a green roof, densely packed with small, rounded green plants. The text is overlaid on the right side of the image.

# GREEN AND COOL ROOFS

0.6 – 1.1 GT

GIGATONS  
CO<sub>2</sub> EQUIVALENT  
REDUCED / SEQUESTERED  
(2020–2050)

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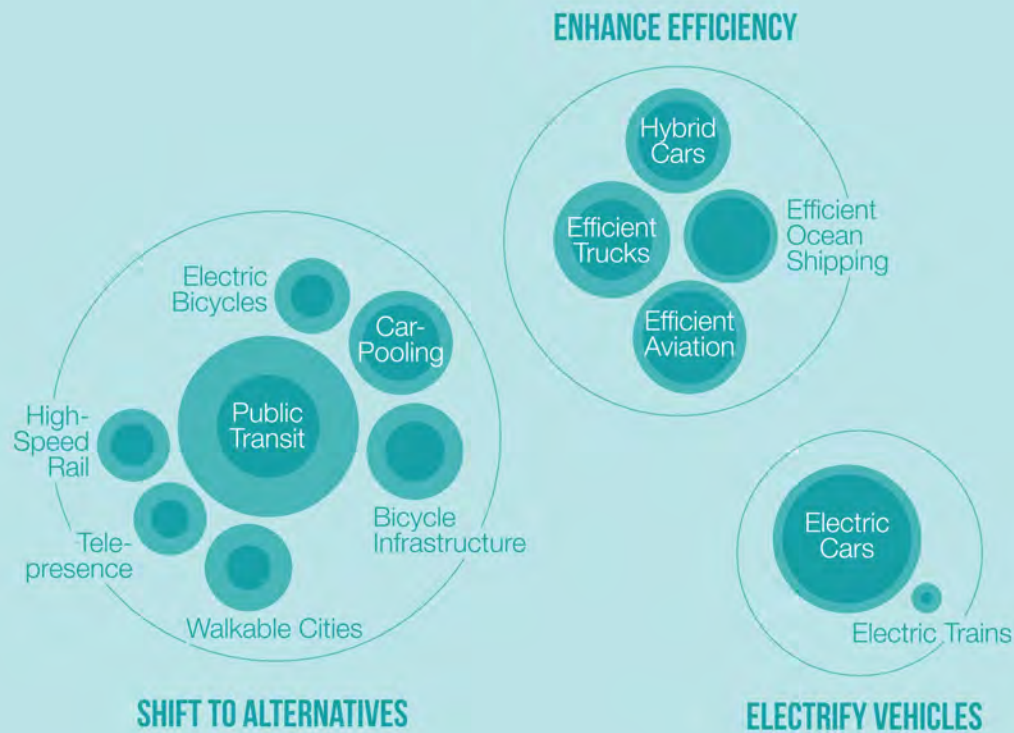
# LOW-FLOW FIXTURES

**0.91 – 1.56** GT

GIGATONS  
CO<sub>2</sub> EQUIVALENT  
REDUCED / SEQUESTERED  
(2020–2050)



# TRANSPORTATION





# ELECTRIC CARS

11.87 –  
15.68 GT

GIGATONS  
CO<sub>2</sub> EQUIVALENT  
REDUCED / SEQUESTERED  
(2020–2050)



# ELECTRIC BIKES

**1.31 – 4.07** GT

GIGATONS  
CO2 EQUIVALENT  
REDUCED / SEQUESTERED  
(2020–2050)

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# TELEPRESENCE

**1.05 – 3.8** GT

GIGATONS  
CO2 EQUIVALENT  
REDUCED / SEQUESTERED  
(2020–2050)



**ADDRESS WASTE & DIETS**



**SHIFT AGRICULTURE PRACTICES**



**PROTECT ECOSYSTEMS**

**FOOD, AGRICULTURE & LAND USE**



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# PLANT-RICH DIET

**65.01–91.72 GT**

**GIGATONS  
CO<sub>2</sub> EQUIVALENT  
REDUCED / SEQUESTERED  
(2020–2050)**



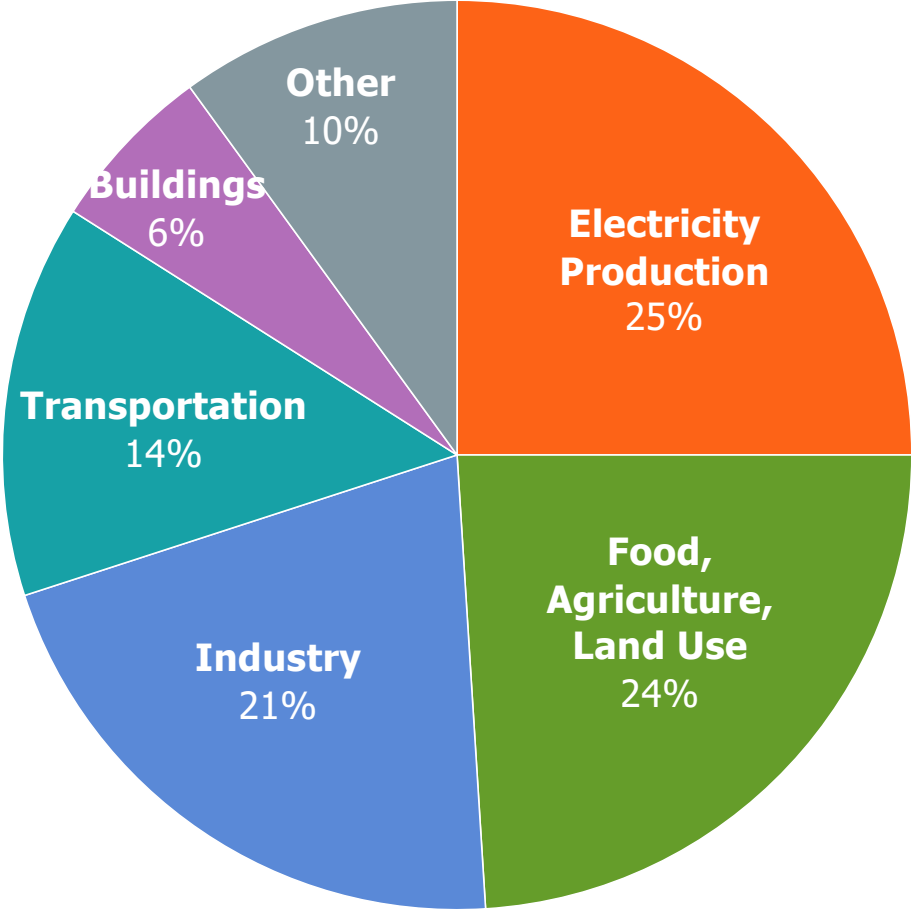
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# REDUCED FOOD WASTE

87.45–94.56 GT

GIGATONS  
CO2 EQUIVALENT  
REDUCED / SEQUESTERED  
(2020–2050)

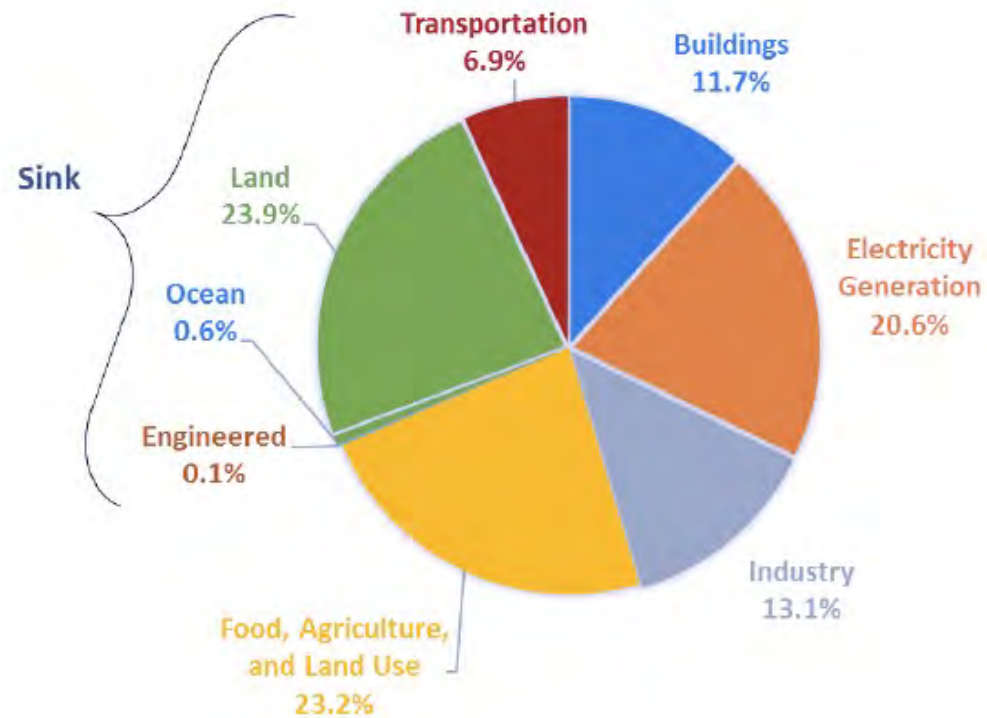
# GREENHOUSE GAS SOURCES



Source: IPCC WG3 AR5



## TOTAL POTENTIAL CO2-EQ REDUCTION, 2020 – 2050, BY SECTOR



Source: Project Drawdown data to be released in 2022



# **Building professionals**

**See potential**

**Make it safe and sound**

**Allow people to be together**

**Make it beautiful**

**Work in teams**

**Make things that last**

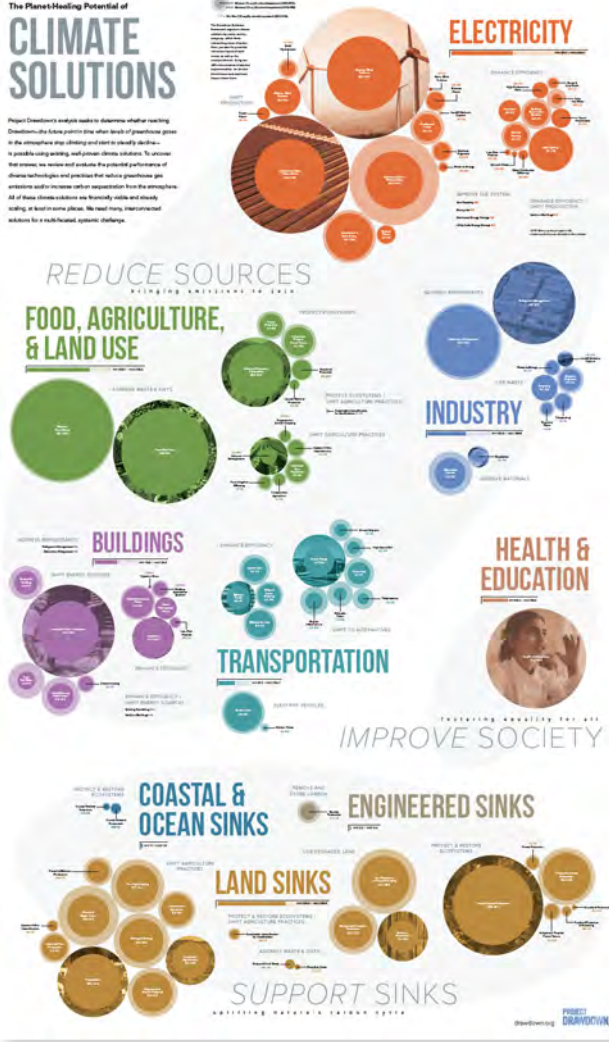
DRAWDOWN

THE LATEST  
**CLIMATE  
SOLUTIONS**  
RESEARCH +  
INSIGHTS



# The Planet-Hedging Potential of CLIMATE SOLUTIONS

Project Drawdown's analysis seeks to determine whether reaching Drawdown—the future point in time after levels of greenhouse gases in the atmosphere are falling and carbon is steadily declining—is possible using existing, and proven, climate solutions. To answer that question, we review and evaluate the potential performance of climate technologies and practices that reduce greenhouse gas emissions and/or increase carbon sequestration from the atmosphere. All of these climate solutions are technologically viable and already existing, or in advanced stages. We need timely, interconnected solutions for a multifaceted systemic challenge.



# SHAPE CULTURE. BUILD POWER. SET GOALS. ALTER RULES & POLICY. SHIFT CAPITAL. CHANGE BEHAVIOR. IMPROVE TECHNOLOGY.

## How to Accelerate Climate Solutions

**“Acceleration”** refers to the conditions for solutions to move forward. Some are easier to roll back than others, while others are not and are more subject to their effects. They interact and affect each other, and the solutions, are dependent on social and political context. What might work well in a given location may not work in another. Accelerators also work at different scales, from individual to larger groups to entire nations. As with solutions, some are uniquely effective, and some need to be all.

**Policy**  
Governmental action that can create a favorable environment for climate solutions to be adopted. This includes laws, regulations, and incentives that can reduce barriers to adoption and create a supportive environment for growth.

**Market**  
The economic system that determines the price of goods and services. Market forces can drive innovation and investment in climate solutions, but they can also create barriers to adoption if not properly managed.

**Capital**  
The financial resources that are available to fund climate solutions. This includes investment, grants, and other forms of financing that can provide the necessary support for growth.

**Behavior**  
The actions and choices that individuals and organizations make that affect their carbon footprint. Changing behavior can be a powerful way to reduce emissions and support climate solutions.

**Technology**  
The tools and techniques that are used to reduce greenhouse gas emissions and increase carbon sequestration. This includes renewable energy, energy efficiency, and carbon capture and storage.

Project Drawdown defines “enablers” as practices and technologies that support the implementation of greenhouse gas-reducing solutions. These inputs are specific and measurable, but solutions do not scale themselves. The real power of enabling practices and technologies is their ability to support the growth of solutions.

Enabler	Impact
Carbon Pricing	Reduces emissions by making carbon-intensive activities more expensive.
Renewable Energy Subsidies	Increases investment in clean energy technologies, reducing costs and increasing adoption.
Energy Efficiency Standards	Reduces energy consumption in buildings and industry, lowering emissions.
Research and Development Funding	Accelerates the development of new climate technologies, bringing them to market faster.
Public-Private Partnerships	Combines resources and expertise from government and industry to scale up solutions.
Carbon Markets	Provides a platform for trading carbon credits, incentivizing emission reductions.
Green Bonds	Raises capital for climate-focused projects, increasing the availability of financing.
Climate Risk Disclosure	Increases transparency about climate-related risks, influencing investment decisions.
Consumer Awareness	Drives demand for climate-friendly products and services, pushing companies to change.
Employee Engagement	Encourages sustainable practices within organizations, leading to operational improvements.
Academic Research	Generates new knowledge about climate solutions, informing policy and practice.
Non-Profit Organizations	Advocates for climate action, provides expertise, and supports grassroots movements.
Media Coverage	Raises public awareness of climate change and solutions, creating a sense of urgency.
Government Leadership	Signals the importance of climate action, inspiring other countries and sectors.
Industry Collaboration	Facilitates knowledge sharing and joint investment in climate technologies.
Local Government Action	Implements climate solutions at the community level, demonstrating their feasibility.
International Cooperation	Addresses global climate challenges through shared resources and best practices.
Climate Justice	Ensures that the benefits of climate solutions are shared equitably and that vulnerable populations are protected.

# PROJECT DRAWDOWN

**Learn more:  
[drawdown.org](https://drawdown.org)**