





OpenMinds' Mission & Identity



WHAT MAKES US UNIQUE



Energy AND climate



Cross-functional expert team



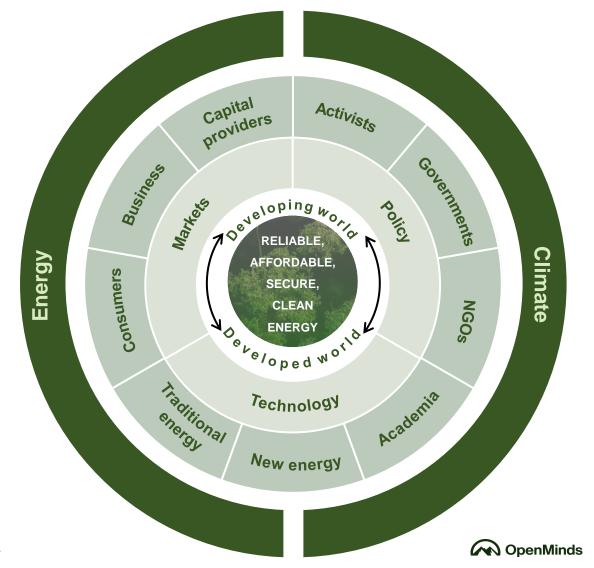
Detailed solutions framework



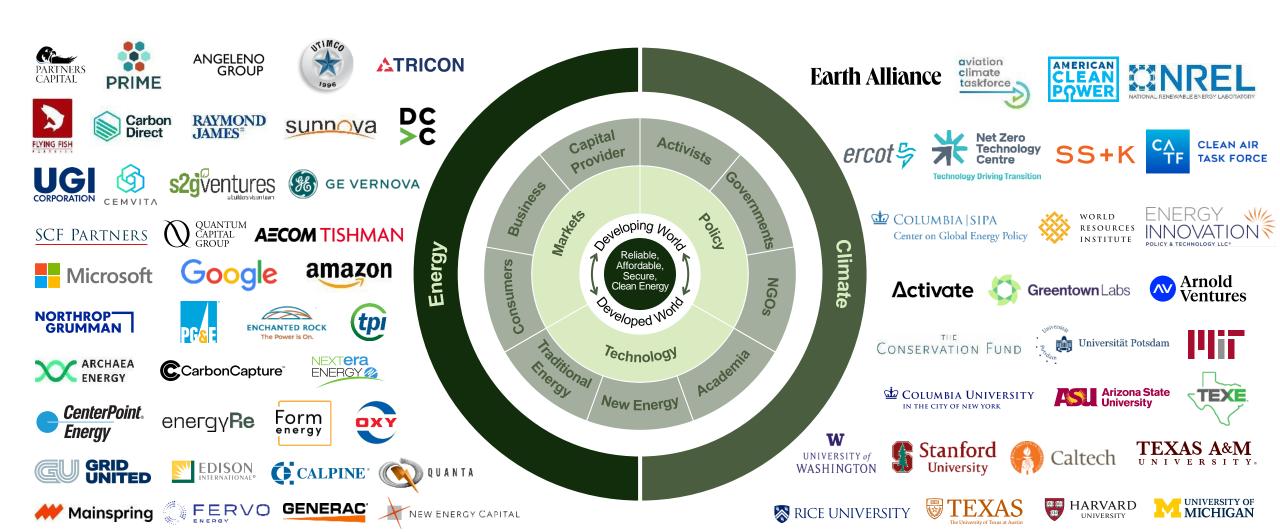
Impact progress by 203X

OpenMinds' Solution Approach

We believe that addressing the Dual Challenge requires us to work together in a **non-partisan** manner across **diverse** fields, industries, and geographies



The OpenMinds Team... Energy AND Climate Experts



The OpenMinds Team

Industry	Role and company									
Ms. Bridgitt Arnold	VP of Communications, Google									
Mr. John Arnold	Founder & CEO. Arnold Ventures									
Mr. John Berger	Founder & CEO, Sunnova Energy International									
Mr. Scott Brown	Founder and Chairman, New Energy Capital									
Dr. Barbara J. Burger	Corporate Graduate, Energy Director, Advisor and Innovator									
Mr. Adrian Corless	CEO, Carbon Capture									
Mr. Ted Craver	Former Chair, President, & CEO, Edison International									
Mr. Michael DeBock	Vice President of Origination, NextEra Energy									
Ms. Jayshree Desai Ms. Keila Diamond	CFO, Quanta Services, Inc. Managing Director and Head of ESG, Quantum Energy Partners									
Mr. Bob Flexon										
	Chairman, PG&E									
Mr. Jason Glickman	EVP Engineering, Planning & Strategy, PG&E									
Mr. Jon Goldberg Mr. Thad Hill	Founder and CEO, Carbon Direct									
Ms. Vicki Hollub	CEO, Calpine									
IVIS. VICKI HOIIUD	President & CEO, Oxy CCS Development Planner EvvenMebil Law Carbon									
Ms. Phoebe Ho-Stone	CCS Development Planner, ExxonMobil Low Carbon Solutions									
Mr. Aaron Jagdfeld	CEO, Generac Power Systems									
Mr. Mateo Jamarillo	Co-Founder & CEO, Form Energy Inc									
Mr. Sanjeev Krishnan	Chief Investment Officer and Senior Managing Director, S2G									
Mr. Tim Latimer	Co-Founder & CEO, Fervo Energy									
Mr. Steve Lockard	Chairman, TPI Composites									
Mr. Thomas McAndrew	Founder & CEO, Enchanted Rock									
Dr. Shannon Miller	Founder & CEO, Main Spring Energy									
Mr. Jeff McDermott	McDermott Capital									
Mr. Stan Miranda	Founder & Chairman, Partners Capital									
Mr. Nate Nickerson	Comms and Public Affairs Partner, DCVC									
Ms. Lara Poloni	President, AECOM									
Ms. Rachael Porter	CMO, Oxy									
Mr. Miguel Prado	CEO, energyRE									
Ms. Heather Redman	Co-Founder & Managing Partner, Flying Fish Partners									
Ms. Starlee Sykes	CEO, Archaea Energy at BP									
Mr. Dan Tishman	Chairman & Principal, Tishman Realty & Construction									
Mr. Ignacio (Nacho) Torras	President & CEO, Tricon									
Ms. Jessica Uhl	President, GE Vernova									
Mr. Al Vickers	COO, Grid United									
Mr. Andy Waite	Managing Partner - SCF Partners									
Mr. Daniel Weiss	Co-Founder and Managing Partner, Angeleno Group									
Mr. Jason Wells	President & CEO, CenterPoint Energy									

Industry	Role and company							
	porate VP of Energy & Resources Industry,							
	Microsoft VP & Chief Sustainability Officer, Northrop Grumman							
Academia	Role and Company							
Dr. Steven Barrett	Regius Professor of Engineering, Cambridge University							
Dr. Naomi Boness	Managing Director, Stanford Natural Gas Initiative and Stanford Hydrogen Initiative							
Dr. Neil Fromer	Executive Director of Programs, Resnick Sustainability Institute							
Mr. Sam Hall	MBA Candidate, MIT Sloan School of Management							
Mr. Britt Harris	Former CEO & CIO, UTIMCO							
Mr. Ira Joseph	Global Fellow CGEP, Columbia University							
Ms. Daniela Marin	PhD Candidate, Stanford University							
Dr. Kenneth Medlock	Senior Director, Center for Energy Studies at Rice University's Baker Institute							
Dr. Dava Newman	Director, MIT Media Lab							
Dr. Jonas Peters	Director, Resnick Sustainability Institute							
Dr. Minoo Rathnasabapathy	Research Lead, Future Worlds, MIT Media Lab							
Mr. Dan Reicher	Senior Research Scholar, Stanford Woods Institute for the Environment							
Dr. Peter Schlosser	Vice President - Global Futures Initiative Vice Provost - Arizona State University							
Mr. Ben Soltoff	Ecosystem-Builder/Entrepreneur in Residence, MIT's Martin Trust for MIT Entrepreneurship							
Dr. Scott Tinker	Director, Bureau of Economic Geology at the University of Texas							
Dr. Maya Tolstoy	Dean of the College of the Environment, University of Washington							
Policy / Influence	Role and Company							
Mr. Jason Bordoff	Professor & Founding Director, Center on Global Energy Policy, Columbia University							
Mr. David Crane	Under Secretary for infrastructure, United States Department of Energy							
Dr. Reginald DesRoches	President, Rice University							
Mr. Hal Harvey	Founder, Energy Innovation							
Mr. Mac Heller	Documentary Film Producer							
Mr. John Hickenloope	Former Governor and Current US Senator, State of Colorado							

Policy / Influence	Role and Company
Mr. Joe Kennedy III	President, Citizens Energy
Mr. Robert Johnston	Executive Director, Columbia Center on Global Energy Policy Former President,
Ms. Janet Napolitano	University of California System
Mr. Rob Shepardson	Co-Founder, SS+K
Mr. Lenny Stern	Co-Founder, SS+K
NGO	Role and Company
Dr. Doug Arent	Executive Director, Strategic Public Private Partnerships, NREL
Mr. Armond Cohen	Executive Director, Clean Air Task Force
Ms. Karlynn Cory	Group Manager - Community Energy Transitions, NREL
Ms. Myrtle Dawes	CEO, Net Zero Technology Centre
Mr. Jason Grumet	CEO, American Clean Power Association (ACP)
Ms. Jennifer Layke	Global Director – Energy, World Resources Institute
Mr. Tom Light	President & CEO, Aviation Climate Taskforce
Dr. Lara Pierpoint	Director of Early Climate Infrastructure, Prime Coalition
Mr. David Pruner	Executive Director, TEX-E
Mr. Larry Selzer	President & CEO, The Conservation Fund
Dr. Cyrus Wadia	CEO, Activate
Mr. Brady Walkinshaw	Founder & Publisher, Noisy Creek
Mr. Kurt Waltzer	Former CEO, Clean Air Task Force
Mr. Pablo Vegas	CEO, ERCOT

Hosts	Role and Company
Mr. David Baldwin	OpenMinds Co-Founder Partner, SCF Partners
Mr. Jeff Katz	OpenMinds Co-Founder Founding Chairman & CEO, Orbitz / Journera
Ms. Maire Baldwin	Board Director, Permian Resources
Ms. Mara Abbott	Chief of Staff, OpenMinds
Mr. James Baird	Associate Partner, Bain & Company
Mr. Jason Corzine	President & CEO, Telluride Foundation
Mr. Julian Critchlow	Advisory Partner, Bain & Company
Mr. Grant Dougans	Partner, Bain & Company
Ms. Emily Emmett	Partner, Bain & Company
Mr. Peter Guarraia	Partner, Bain & Company
Mr. Preston Henske	Partner, Bain & Company
Ms. Cate Hight	Partner, Bain & Company
Mr. Fred Kittler	Co-Founder and Managing Director, Firelake Capital Mgmt.
Ms. Dianne Ledingham	Advisory Partner, Bain & Company
Mr. Paul Major	Board Member & Manager, Paradox Community Trust
Mr. Joseph Scalise	Partner, Head of Global Energy & Natural Resources Practice, Bain & Company
Mr. Crosby Scofield	Partner, Vinson and Elkins
Ms. Erika Serow	Partner and CMO, Bain & Company
Mr. Michael Short	Partner, Bain & Company

... and many more



Partnership with Complementary Strengths

OpenMinds has a diverse, nonpartisan network of climate & energy leaders and a focus on impact by 203X...







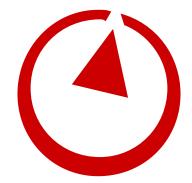
Overview of Bain's Energy Transition Capabilities



Uniquely collaborative culture – Bain works alongside clients as one team, caring about the client's business as if it were their own



Integrated innovation – Bain's tailored, integrated expertise is complemented by a vibrant ecosystem of digital innovators to deliver better, faster, and more enduring outcomes, including 17 innovators focused on climate and sustainability





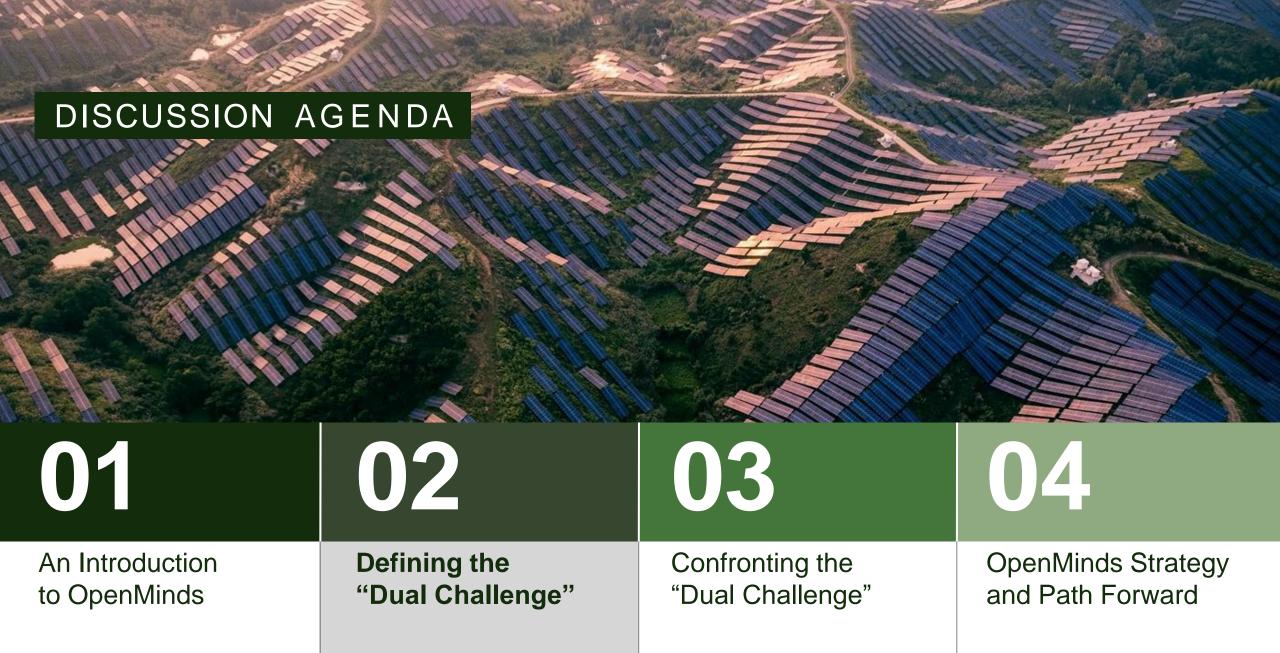
Transformative change – Bain's proprietary Results Delivery® approach improves clients' capacity for change and delivers sustained results



Deep expertise – Bain's global network includes 1,400+ experts with sustainability experience



Proven results – Bain has successfully driven 700+ energy transition projects across industries, driving financial and social impact across regions



The Dual Challenge: An Overview







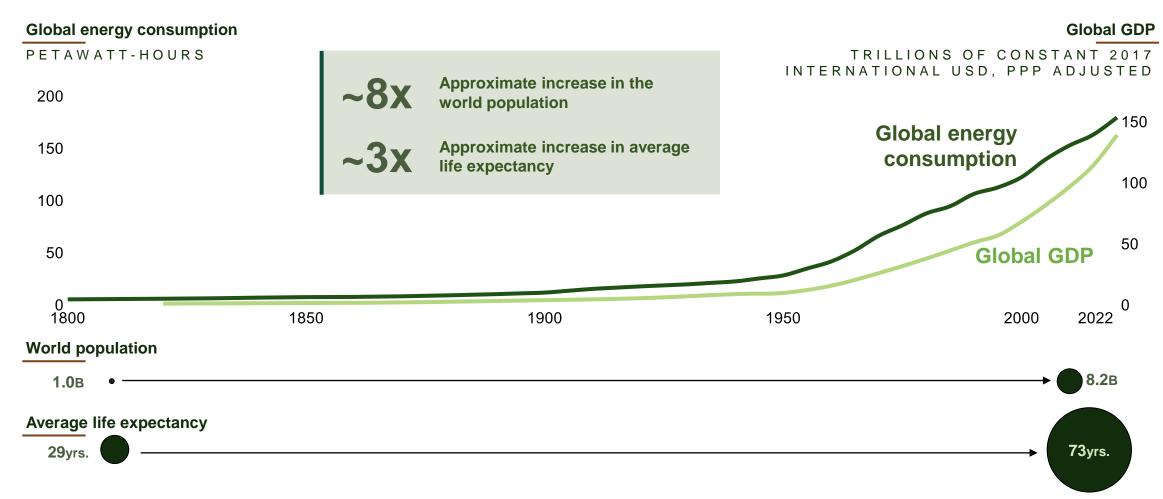


Energy is fundamental to human wellbeing and flourishing...

... but our primary energy sources, fossil fuels, are also the principal source of human greenhouse gas emissions, which cause global warming The tension between energy supply and climate change presents the **Dual Challenge**

This is a global problem of enormous scale and complexity, and addressing it will require us to balance competing priorities

Energy Drives Human Well Being and Longevity

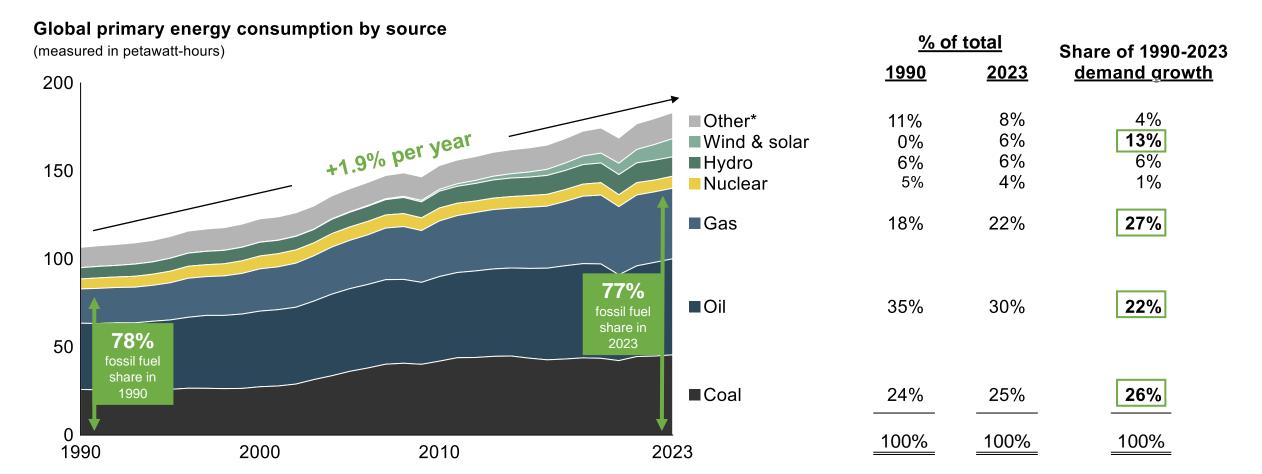


Note: GDP is adjusted for purchasing power parity. Sources: BP Statistical Review of World Energy 2021; Vaclav Smil, *Energy Transitions: Global and National Perspectives*, 2017; Maddison Project Database, version 2020. Bolt, Jutta and Jan Luiten van Zanden (2020), "Maddison style estimates of the evolution of the world economy. A new 2020 update"; World Bank; Our World in Data https://openminds203x.org/

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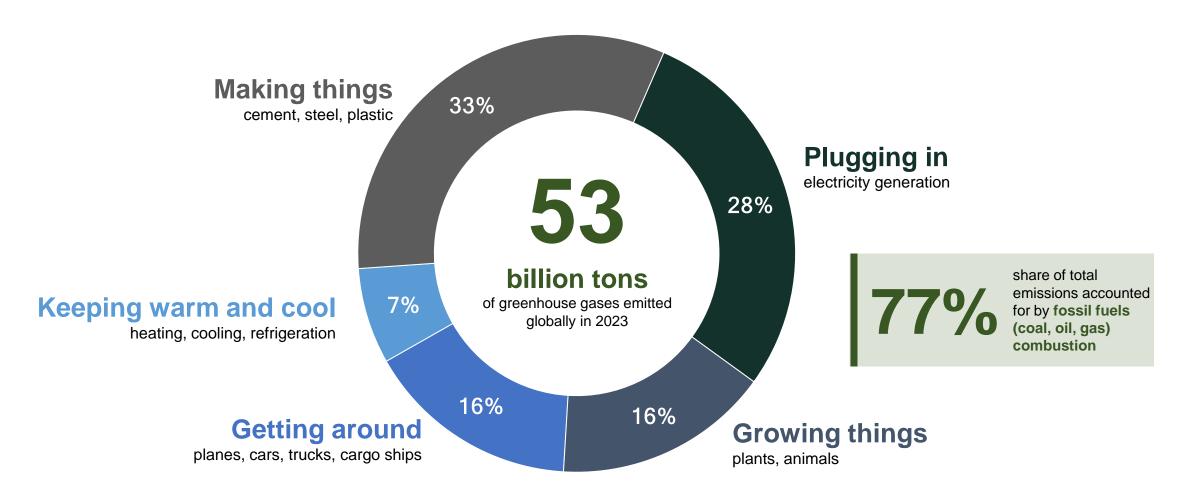


Growth in Energy Consumption



Note: * Other includes traditional biomass, biofuels, and other renewables Source: Our World in Data *Energy Mix*

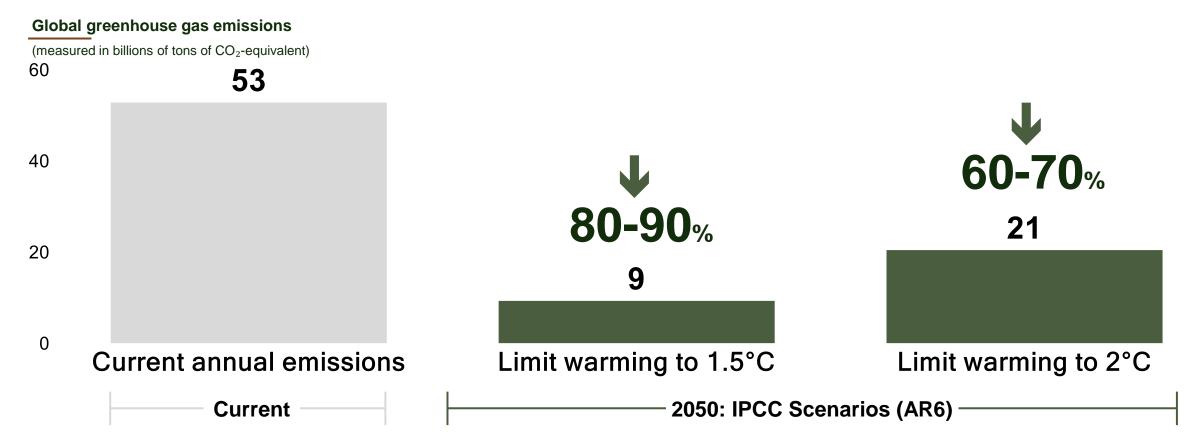
Human Activities Driving Greenhouse Effect



Note: Emissions measured in tons of CO₂-equivalent and include carbon dioxide, methane, nitrous oxide, and f-gases Source: Bill Gates, *How to Avoid a Climate Disaster* (2021); EDGAR *GHG emissions of all world countries, 2024 report*



Required Emissions Reduction

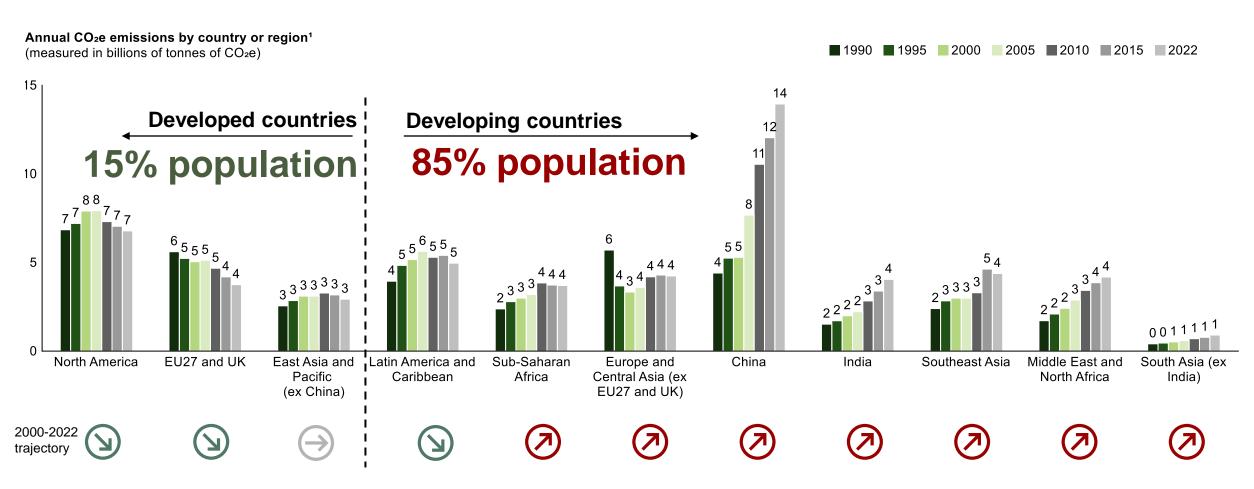


Note: 1.5°C scenario refers to "Limit warming to 1.5 °C (>50%) with no or limited overshoot" scenario in IPCC; 2 °C scenario refers to "Limit warming to 2 °C (>67%)" scenario. ">50%" and ">67%" refer to probability of reaching scenario should emissions reduction targets be reached

Source: IPCC, Sixth Assessment Report (AR6), Climate Change 2022: Mitigation of Climate Change – Summary for Policymakers, Table SPM.1 (2022); EDGAR GHG emissions of all world countries, 2024 report



A Two-Track World on Emissions



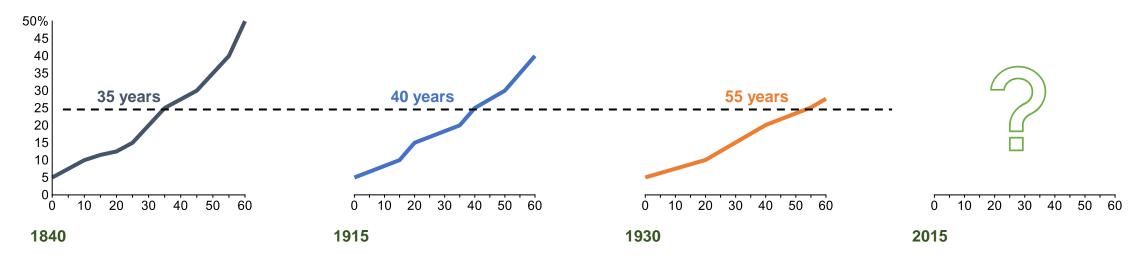
Note: (1) Emissions include carbon dioxide, methane, and nitrous oxide from all sources, including land-use change Source: Our World in Data



Transitions Take Decades

Years until supplying 25% of global primary energy supply

(share of global primary energy supply)





Coal



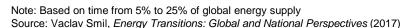
Crude oil



Natural gas



Vind & solar

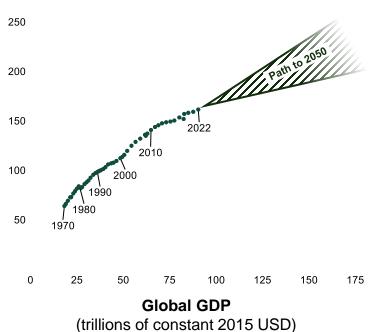




The Core of the Dual Challenge

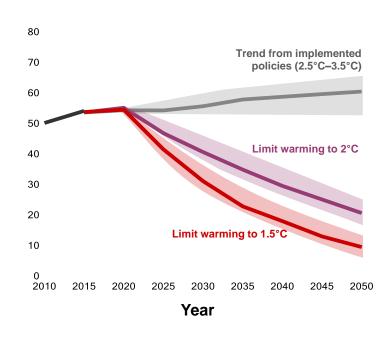
Energy Will Grow

Global primary energy demand (petawatt-hours)



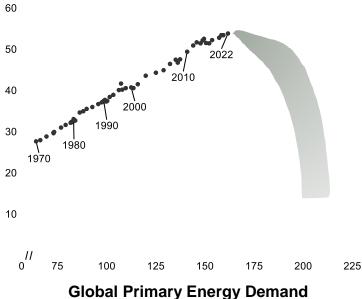
Emissions Must Decline

Global annual greenhouse gas emissions (gigatons of CO₂-equivalent)



The Dual Challenge

Global CO₂e emissions (gigatons of CO₂e)



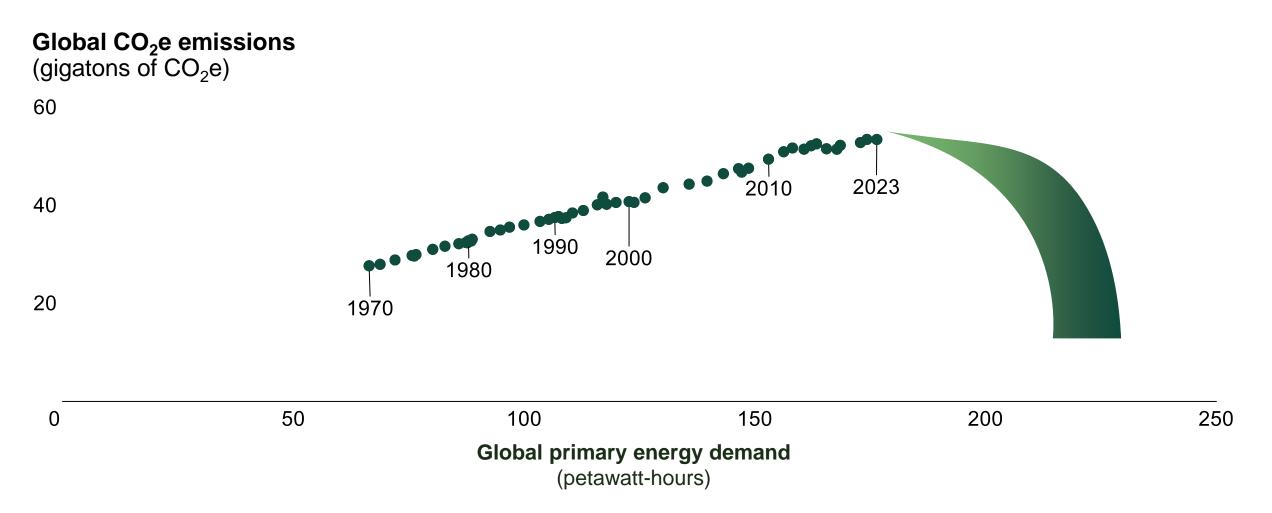
Global Primary Energy Demand (petawatt-hours)

Note: Warming figures in middle-side emissions chart are relative to the preindustrial period and reflect projected warming level by 2100 in each scenario; bold lines in emissions chart represent median estimate, and shaded regions reflect a range from the 25th to 75th percentile. Emissions in right-side chart reflect global CO₂ emissions inclusive of land use change.

Sources: IPCC, Sixth Assessment Report; World Bank; Our World in Data



Our Task: Change the Trajectory of Emissions





Our Solutions Approach



What are the tradeoffs of each solution?

Identify and systematically evaluate a long list of potential technical solutions

What is the most efficient pathway?

Identify the solutions with the highest potential for impact through 203X

How do we drive impact globally?

Assess solution feasibility at a country-level, based on varying resources and priorities, to calibrate deployment rates

Accelerate progress against the Dual Challenge by 203X

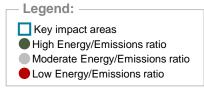
Analysis of Emissions and Energy Consumption

Energy and Emissions

By end	Industry Iron/steel, (petro)chemical, machinery, construction, etc.		Transport Road, aviation rail and pipeline		Buildings Residencial and commercial buildings			Agriculture Agriculture and fishing			Other Non-specified and non-energy sources			Total			
By use source																	
Source	Energy	Emission	En/Em	Energy	Emission	En/Em	Energy	Emission	En/Em	Energy	Emission	En/Em	Energy	Emission Er	n/Em	Energy	Emission
E N E R G Y																	
Electricity/heat	18%	12%	-	<1%	0%	-	20%	12%	-	1%	1%	-	2% ¹	7 %²	- (42%	32%
Coal	8%	8%		<1%	0%		9%	8%		<1%	<1%		<1%	5%	• 4	18%	21%
Oil products and oil	<1%	<1%		-	-	-	<1%	<1%		-	-	-	-	-	-	<1%	1%
Natural gas	4%	3%		-	-	-	5%	3%		-	-	-	<1%	1%		10%	7%
Bio/waste ⁶	<1%	<1%		-	-	-	1%	<1%		-	-	-	-	-	-	2%	2%
Nuclear	3%	<1%		-	-	-	3%	<1%		-	-	-	-	-	-	6%	<1%
Renewables ⁷	2%	<1%		-	-	-	2%	<1%		-	-	-	<1%	<1%		5%	<1%
Direct combustion	14%	13%	-	22%	17%	-	14%	6%	-	<1%	<1%	-	8%³	7%4	-	58%	44%
Coal	6%	6%	• (B)	-	-	1%	<1%		-	-	-	<1%	1%		7%	7%
Oil products and oil	2%	2%		20%	16%		2%	1%		<1%	<1%		6%	5%		31%	24%
Natural gas	5%	3%		<1%	<1%		5%	2%		-	-	-	1%	1%		12%	6%
Bio/waste	1%	2%		<1%	1%		6%	3%		-	-	-	-	-	-	8%	6%
NON-ENERGY	<u>ر</u>																
Industrial processes	-	6%	N/A	-	-	N/A	-	-	N/A	-	-	N/A	-	-	N/A	N/A	6%
Agriculture	-	-	N/A	-	-	N/A	-	-	N/A	-	12%	N/A	-	-	N/A	N/A	12%
Other	-	-	N/A	-	-	N/A	<u>. </u>	-	N/A	-	-	N/A	-	7 % ⁵	N/A	N/A	7%
Total	32%	31%		22%	17%		34%	18%		2%	13%		10%	21%		100%	100%

/ DIRECTIONAL Key impact areas

- A Electricity generation from fossil fuels
- B Oil and oil products for transportation
- © Energy usage in buildings
- D Fugitive emissions
- **E** Industrial processes
- F Energy supply needs to expand in a lower carbon manner to support economic growth in the developing world



Note: Data reflected above is for 2019. Energy data reflects primary energy and emissions data reflects greenhouse gas emissions in terms of CO₂ equivalent. 1: Electricity/heat going to non-specified and non-energy uses, 2: Unallocated fuel combustion for electricity, 3: Energy going to non-specified and non-energy uses, 4: Emissions from energy production and fugitive emissions, 5: Emissions from LUCF and food waste (6%), 6: Includes traditional biomass and animal materials/waste 7: Includes geothermal, solar/tide/wind, and hydro, CO₂ equivalent includes methane and nitrous oxide emissions. **Figures are directional.**Sources: IEA, WRI, Climate Watch, German Environment Agency; EIA

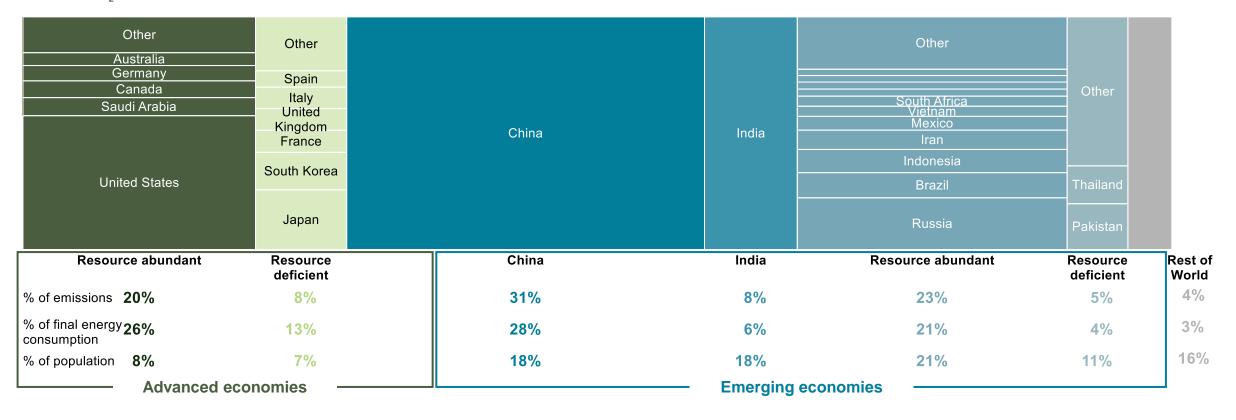


Emissions and Energy Consumption by Country Archetype

PRELIMINARY

Total emissions by archetype

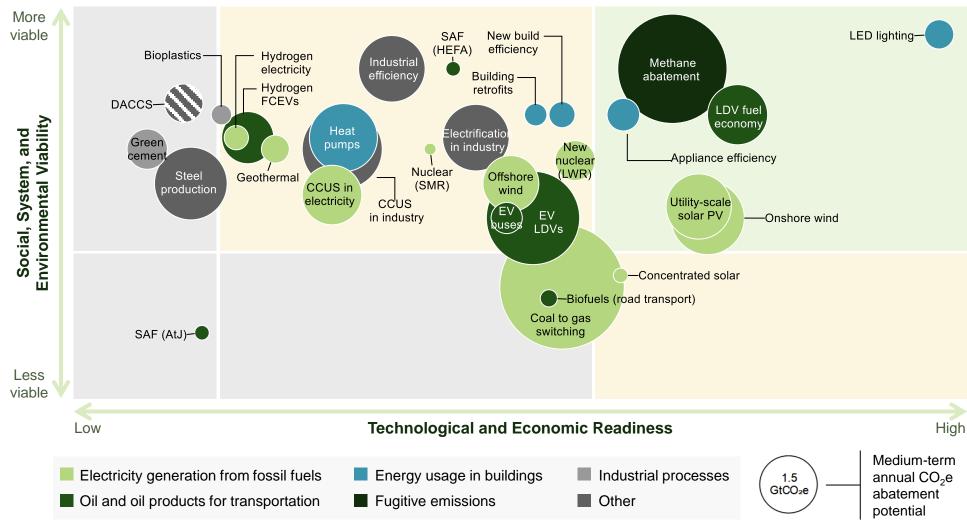
Percent of CO₂e emissions – 2023



Note: Countries are grouped into archetypes by level of development and resource abundance. CO₂ emissions includes land use, land use change, and forestry Source: EDGAR *GHG emissions of all world countries, 2024 report;* Our World in Data



Prioritization of Potential Solutions

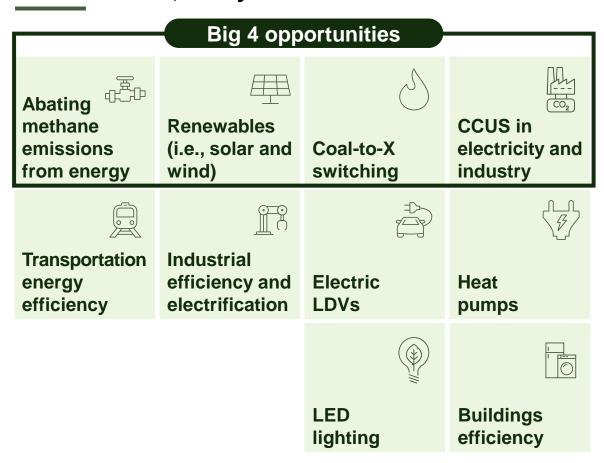


Prioritized by:

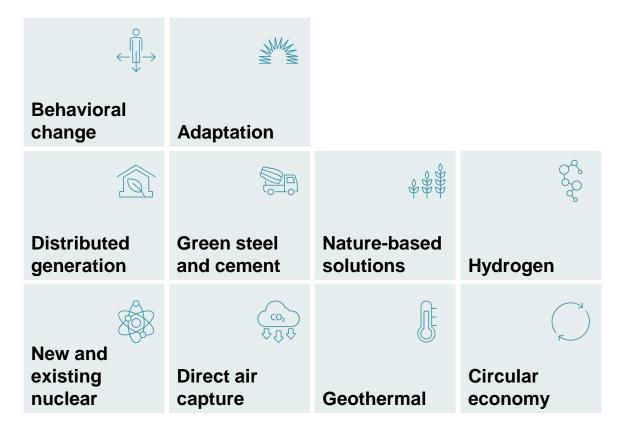
- Low cost
- Deployment speed
- Abatement potential

OpenMinds' Top 10 Solutions

Cost effective, ready now



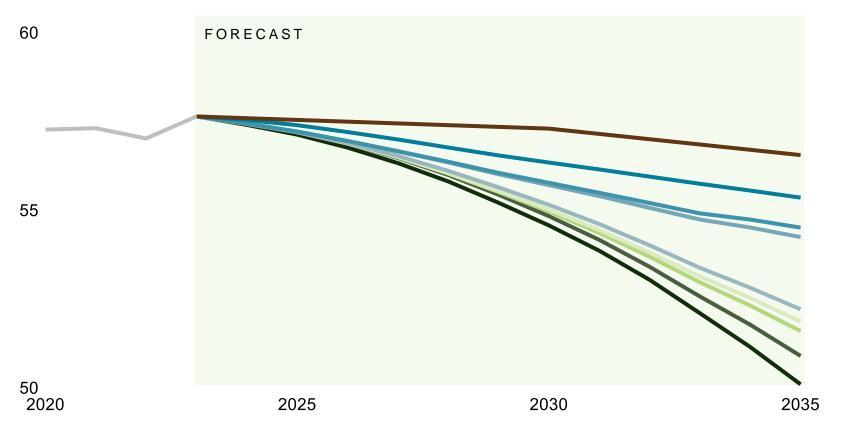
Longer timeline to full potential

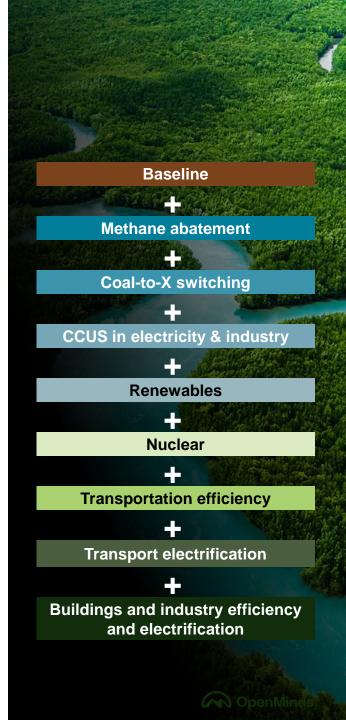


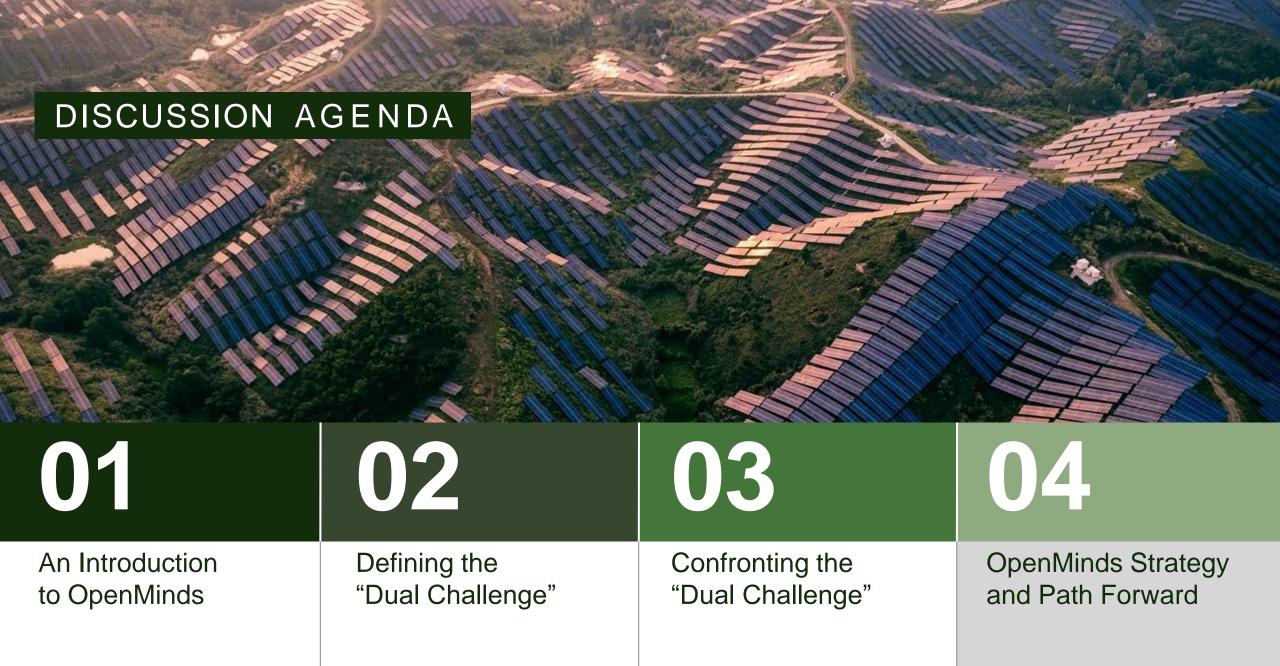
Impact of Implementing Key Solutions

Projected emissions impact

GIGATONS OF CO₂E PER YEAR









OpenMinds' Impact Strategy

More energy. Less emissions. By 203X.

Break the emissions growth trend and accelerate decline.

Phase 1 (2024-2026)

Phase 2 (2026-2030)

Long-term (2030+)

EU / UK

Asia

OpenMinds: Transitioning to Impact in 2024+



2022 - Define

More energy. Less emissions. By 203X. 2023 - Solve

Data-driven.
Solutions pathway.
Cost, speed, scale.

2024 - Impact

8 projects. Removing bottlenecks. 2025 plus - Scale

Additional projects. Global reach.

OpenMinds + Bain = Differentiated Impact



Energy and Climate



125+ Experts Across Key Energy and Climate Sectors



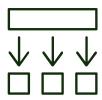
Bain Partnership



Data-Driven

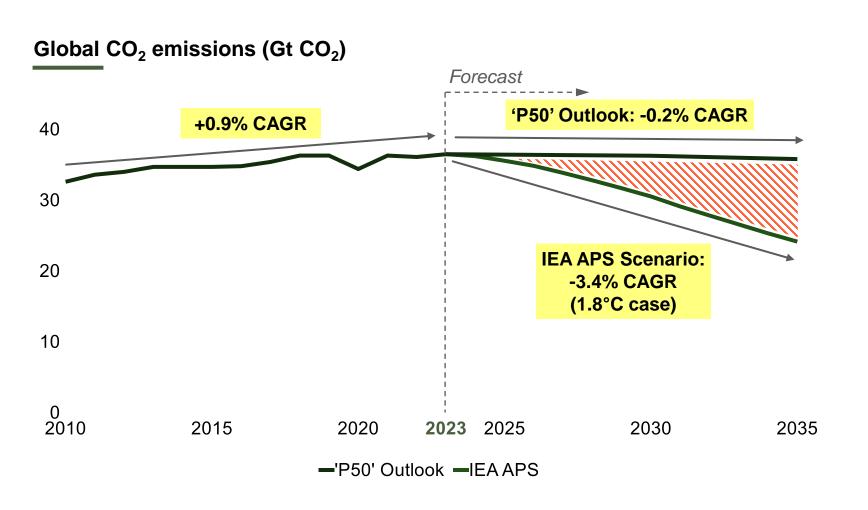


Practical Solutions
Framework and 10-Year
Horizon



Impact Projects Targeting Key Bottlenecks

We're Bending the Emissions Curve, Yet Face a Big Gap



The gap through 2035

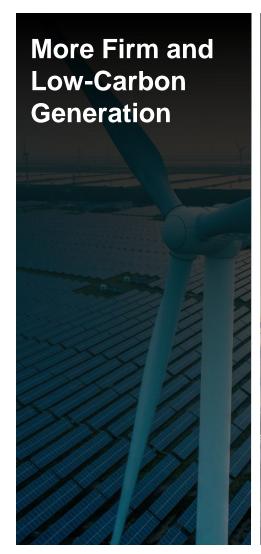
~66Gt

Total global CO₂ emissions gap between the 'P50' Outlook and 1.8°C scenario

-14%

Total global CO₂ emissions reduction needed to stay on track from '23-'35

What's Needed to Close the Gap in the US











OpenMinds' Impact Projects – Removing Key Bottlenecks

More Firm and Low-Carbon Generation

Meet AI Demand with Renewables

Create the Market for Multi-Day Storage

Segment Direct Air Capture Customers

Cleaner Fossil Fuel Power

Quantify CCUS Economics

Prove and Catalyze CCS

Incentivize Methane Abatement

Evaluate Coal-to-X
Switching Full Potential

Expanded Transmission

Accelerate
Transmission Permitting
Reform

Catalyze Transmission Investment

Improve Community
Benefits of
Transmission

Energy
Efficiency and
Electrification

To be determined

New Generation of Leaders

Launch NextGen Program

Scale the NextGen Community









Trusted Source of Information and Progress

OpenMinds Impact Project Leadership

Decarbonizing Generation



Steve Lockard Chairman **TPI Composites**



CEO Net Zero Technology



Form Energy



Resnick Sustainability Institute, Caltech



Bain Lead

Preston Henske Partner **Bain & Company**



Dr. Doug Arent Executive Director, Strategic PPPs



Adrian Corless CEO **Carbon Capture**



Thad Hill CEO



Stan Miranda Founder & Chairman **Partners Capital**





Michael DeBock

VP of Origination

Thomas McAndrew

NextEra Energy

Founder & CEO

Enchanted Rock

Heather Redman

Co-Founder and

Managing Partner

Flying Fish Partners



Jon Goldberg Founder & CEO **Carbon Direct**







Jason Wells CenterPoint Energy

Developing NextGen Leaders



Dr. Naomi Boness Managing Director Stanford Natural Gas & Hydrogen Initiatives







Dr. Mike Witt Chief Sustainability Northrop Grumman



Dr. Minoo R. Research Eng. & Program Lead, Future Worlds MIT Media Lab

Phoebe Ho-Stone

Planner, ExxonMobil

Low Carbon Solutions

CCS Development

Ben Soltoff

Residence

Center for Entrepreneurship

Entrepreneur in

MIT's Martin Trust



Dr. Robert Johnston **Executive Director**

Ira Joseph

University

CEO

Activate

Global Fellow

CGEP. Columbia

Dr. Cyrus Wadia



Keila Diamond Managing Director and Quantum Energy Partners



Dr. Shannon Miller Founder & CEO Mainspring Energy



Bain Lead

Dianne Ledingham Advisory Partner Bain & Company



Daniela Marin PhD Candidate Stanford University

Connecting America



Larry Selzer President & CEO The Conservation Fund

Ted Craver

Vicki Hollub

Al Vickers

Grid United

COO

President and CEO

Board & advisory roles

Duke Energy, Bain &

Co., Wells Fargo, etc.



Scott Brown Chairman **New Energy Capital** Partners

Jayshree Desai

CEO

EnergyRe

Daniel Weiss

Co-Founder &

Managing Partner

Angeleno Group

Quanta Services, Inc.



Bob Flexon Chair, PG&E Director, ERCO1

John Arnold

Co-Founder.

Arnold Ventures

Board Member, Meta



Jason Glickman EVP Engineering, Planning and Strategy PG&E

Armond Cohen

Executive Director

Clean Air Task Force



Dan Reicher Senior Research Scholar **Stanford Woods Institute** for the Environment



Dan Tishman Chairman & Principal Tishman Realty & Construction



Cate Hight Partner **Bain & Company**



Michael Short Partner **Bain & Company**

Communicating to Accelerate Impact



Jeff Katz Co-Founder



Rachael Porter CMO



Rob Shepardson Founding Partner

Dr. Maya Tolsoy

the Environment

Dean of UW College of



Bridgitt Arnold Vice President, Communications

Noisy Creek

Brady Walkinshaw

Founder & Publisher



Nate Nickerson Comms and Public Affairs



Erika Serow Partner and CMO **Bain & Company**

2024 NextGen Cohort



Frank Agwuncha

Colombia University Masters - Sustainability Management



David Brown

MIT MBA - Entrepreneurship



Tam Kemabonta

Arizona State University PhD - Sustainable Energy



Hannah Mae Merten

Harvard University MBA/Masters - Public Policy



Ovindamola Pedro

MIT MBA - Sustainable **Fuels**



Cameron Andrews

University of Texas MPA - Policy



Dennis Cha

Harvard University MBA - Energy Transport



Vivek Kesireddy

Texas A&M PhD – Petroleum Engineering



Hannah Murdoch

Stanford University MBA/MS - Environment & Resources



Kimberly Sinclair

University of Washington PhD - Earth and Space Sciences & Astrobiology



Edward Apraku

Stanford University PhD - Environmental Engineering



Anita Chandrahas

Harvard University Post-Doctoral Fellowship Biomedical Science



César Lasalde-Ramírez

Caltech PhD - Energy Storage



Kristina Nabayan

Colombia University PhD - Materials Science & Engineering



Amanda Studebaker

Stanford University MBA/MS - Environment & Resources



Ainee Athar

Stanford University MBA/MSc -**Environmental Resources**



Debjyoti Chatterjee

UT Austin PhD - Electrical & Computer Engineering



Daniela Marin

Stanford PhD - Chemical Engineering



Ian Naccarella

Harvard University MBA - Electric Vehicles



Andrew van Baal

University of Michigan MS – Sustainable Systems



Victor Awosiji

Stanford University PhD - Earth & Planetary Sciences



Isabelle Dunning

Colombia University MS - Sustainability Management



Karina Masalkovaite

Stanford University PhD - Materials Science & Engineering



Bianca Derya Neumann

University of Potsdam MA - Political Science, **Environmental Policy**



Yingxiao Zhang

University of Michigan PhD - Climate Sciences & Engineering



Ines Azoy-Parravano

University of Michigan Bachelors - Computer Science



Sam Hall

MIT MBA - Energy & Climate Technology



Hillary McKenzie

University of Michigan MBA/MS - Sustainability



Yogi Nishanth

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