



2024  
Annual  
Report

# POLICY BUILT TO LAST



For much of the last two decades, we at the Breakthrough Institute have advocated for climate and energy policies that are robust to the election cycle and to the inevitable shifts in party control of the presidency and Congress. The carbon intensity of any economy is determined by the energy technology and infrastructure through which it meets its energy needs. Technological change takes time even when it happens quickly. Energy infrastructure is built to last decades, not years, and is slow to turn over. Any effort to deeply decarbonize the U.S. economy, for these reasons, unavoidably requires climate and energy policies that can be sustained over multiple decades.

The recent election should remind us that, absent one-party control of the executive branch and Congress over those decades, climate policy cannot succeed unless it can be sustained on a bipartisan basis. As Alex Trembath and I wrote in the aftermath of the passage of the Inflation Reduction Act (IRA), “what executive action and budget reconciliation giveth, it just as easily takes away... Bold executive action and massive reconciliation spending win cheers from progressives and environmentalists, but virtually assure that Republicans will attempt to dismantle them the first chance they get, deeply polarizing technologies and policies that were, until relatively recently, broadly popular across the political spectrum.”

While much of the climate and clean energy advocacy community braces for the fallout from an election in which voter concern about energy prices and reliability, not the risks of climate change, played a significant role in the outcome, and Donald Trump ran explicitly against the Biden administration's green industrial policy and efforts to rapidly transition the nation to wind, solar, and electric vehicles, Breakthrough is uniquely positioned to advance critical climate policies in the coming years.

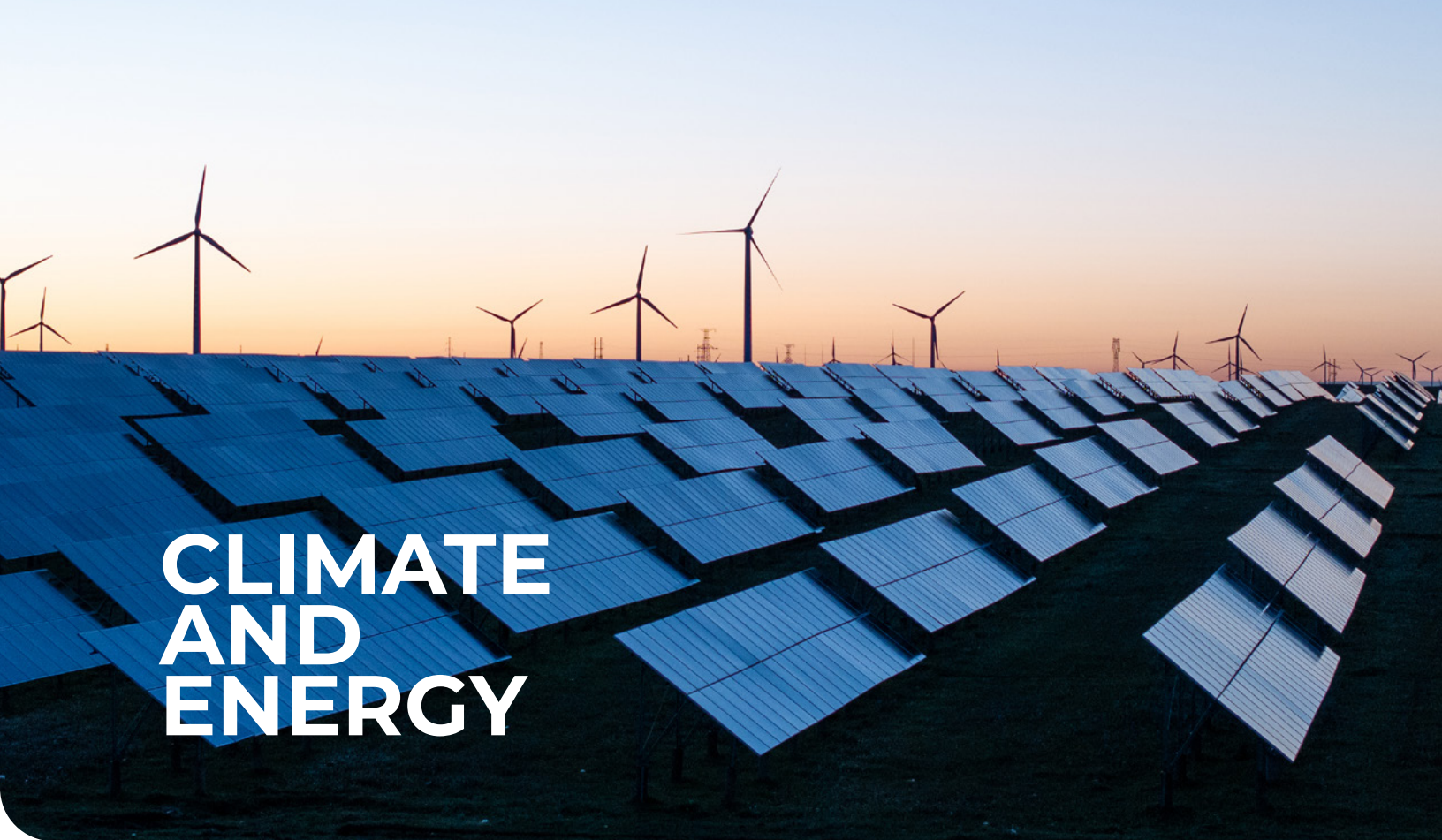
Why? Because we have long advocated for action on climate change that rejects an apocalyptic view of climate risk, is not tethered to arbitrary and unrealistic emissions targets, and is centered around "quiet climate policies" that prioritize technological innovation over regulation. More recently, as several decades of investment and innovation have improved the cost and performance of clean technologies, we have focused on regulatory reform—clearing away the obstacles, often unintended consequences of the last generation's environmental policies, that now hinder efforts to deploy clean technology and build infrastructure. Most recently, we have helped launch a growing Abundance movement to build factions in both parties committed to technological progress, public and private sector innovation, regulatory reform, and building again.

There is substantial uncertainty about how the incoming administration and Congress will proceed on all of these fronts, particularly in the face of looming budget deficits and campaign commitments to deeply cut taxes and raise tariffs. However those uncertainties play out, what is clear is that the U.S. is unlikely to come close to hitting the ambitious climate targets the Biden administration committed to over the last several years. That would have been the case no matter the outcome of the election. Faced with rising costs, permitting roadblocks, and local opposition, wind and solar deployment was already substantially lagging post-IRA projections. Electric vehicle sales have likewise flagged in the face of consumer indifference, high costs, and limited charging infrastructure. And while the AI boom has changed the economic picture for nuclear energy, slow progress on regulatory reform and efforts to develop domestic fuel enrichment capacity mean that the first next generation reactors are unlikely to be available before the early 2030s.

All of these challenges are useful reminders that the national and global emissions knobs are really hard to turn. Politicians, electoral majorities, and the policies they campaign on and sometimes enact come and go. But long-term progress to mitigate climate change will ultimately be determined by the pace of technological change.

From this perspective, culture war contestations around climate policy from election to election matter a lot less than most people think. The long-term trajectory of decarbonization has not changed much over the last 50 years. The emissions intensity of the U.S. economy has fallen at a consistent rate across Republican and Democratic administrations and economic booms and busts. That trajectory is, in significant part, the long-term signal of energy policies past. Nuclear, the shale gas revolution, wind and solar, and improvements in agricultural productivity all required substantial public investment in research, demonstration, and commercialization over many decades.

In the coming years, there will be substantial opportunities to advance energy innovation policies and regulatory reform despite the new administration's ostensible hostility toward climate policy. Those efforts are unlikely to seem like major climate victories, nor are they likely to be apparent in short-term emissions trends over the next four or eight years. But climate change is not a short-term problem solvable by discreet policy actions by a single administration. Sustaining innovation and technological change over the long term is the name of the game. That will remain our priority.



# CLIMATE AND ENERGY

The Breakthrough Institute's Climate and Energy work strives to unlock the full potential of tomorrow's clean energy systems through innovation and pragmatic policy interventions, while simultaneously delivering critical insights on climate impacts and articulating society's most promising approaches for building resilience for all. We recognize both the momentum and the moral imperatives of global growth and human flourishing and aim to build a roadmap to meeting future energy and raw material demand with reduced environmental costs and land-use impacts.

Under Co-Directors Dr. Seaver Wang and Dr. Patrick Brown, the Climate and Energy team reached new heights in 2024, producing widely cited research on U.S. energy and critical minerals policies and climate change adaptation strategies.



## RESEARCH

### Understanding NEPA Litigation

In July, Breakthrough published a systematic review of recent National Environmental Policy Act (NEPA)-related appellate court cases that provided a first-of-a-kind empirical analysis of the push to reform U.S. permitting policy. Breakthrough Institute analysts, in collaboration with legal experts at Holland & Knight, compiled and analyzed 387 NEPA cases brought to the U.S. appellate court system over the 2013-2022 period and categorized them by project type, environmental review, length of judicial review, federal agency, and plaintiff. The results indicated that NEPA litigation overwhelmingly functions as a form of delay, as most cases take years before courts ultimately rule in favor of the defending federal agency.

The report received significant media coverage. Lead author Nikki Chiappa was cited twice in the *Washington Post* and covered in *Politico*. Nikki presented the report's findings in talks at the American Enterprise Institute, the Property and Environment Research Center, the One Energy Summit, and C3.



## RESEARCH

### Updated Mining Footprints and Raw Material Needs for Clean Energy

In April, the Climate and Energy team published a major report providing an updated analysis of the raw material and mining footprints required for various forms of clean electricity-generating technologies. This research presented a sorely needed update on the mineral intensity of various clean power technologies, highlighting the favorably light material requirements for nuclear electricity as a useful hedge for insulating the energy transition against risks from critical mineral supply chain disruptions. At the same time, the report highlighted key opportunities for further reducing the environmental impacts related to mining for clean energy deployment by targeting innovation efforts in copper, steel, nickel, lithium, uranium, and silver.

Our analysis is already emerging as the new definitive reference on the mining footprint of clean power sources, cited prominently in a new *Our World in Data* article as well as in the U.S. Department of Energy's *Pathways to Commercial Liftoff: Advanced Nuclear* report. In addition, our report

received broad media coverage in *Axios*, *Mining Magazine*, *MIT Technology Review*, and numerous other publications, and has continued to circulate on social media since publication. The quantitative work for that report in turn served as the basis for another report on anticipated U.S. clean tech mineral demands over the 2025-2050 period; we released the second report, titled *Metals for the Future*, in September. Overall, the two reports have helped our team maintain our reputation as a premier source of insight on energy transition minerals and related policy.

## NEW HIRE

### **Lauren Teixeira**, Climate and Energy Analyst

Lauren joined us as a new Climate and Energy Analyst in September. Lauren brings a unique blend of experience in data science, journalism, and climate research. She recently completed her Master's in City and Regional Planning with a concentration in Urban Informatics from the Rutgers Bloustein School of Planning and Public Policy, and she holds a Bachelor's in Philosophy from Grinnell College. Before her career shift into data science, Lauren was a freelance journalist in China, where she published in outlets like *The Economist*, *Foreign Policy*, and *VICE*. Her diverse background in both qualitative and quantitative research makes her a fantastic addition to our team.



## RESEARCH

### **Breakthrough Analyst Found a Major Paper on Liquified Natural Gas Emissions Was Riddled with Errors**

A prominent research paper by a Cornell University researcher, released in late 2023, boldly claimed to find that U.S. liquified natural gas (LNG) exports to Europe and Asia would result in carbon emissions far exceeding those from burning coal to supply the same energy. This manuscript rapidly became a focal point for environmental activists pressuring the Biden administration to impose a pause on future U.S. LNG export projects on climate grounds, despite other commentators cautioning that the research seemed to exhibit serious flaws.

Breakthrough Senior Energy Analyst Jonah Messinger published a comprehensive analysis that reproduced the calculations underlying this



controversial study, highlighted both major methodological errors and aggressive assumptions that would completely reverse the study's main findings, and validated the relatively lower emissions footprint of LNG relative to coal-fired electricity. His article highlighted the risks of the environmental movement's tendency to extol empirical science on the one hand, while often rushing blindly to endorse questionable but ideologically appealing research results on the other. Jonah's analysis earned direct mentions in official letters and press communications from members of Congress, as well as coverage in outlets like *E&E News*, *Heatmap*, the *Ohio Star*, and others. As climate groups lobby the Biden administration to complete an LNG ban in the lame duck session of Congress, Jonah's analysis remains crucial to advocacy of evidence-based LNG policy.

## NEW HIRE



### **Ryan Alimento**, Climate and Energy Analyst

Ryan joined the Climate and Energy team in October with a strong interest in leveraging his background as a chemical engineer to better inform analysis of clean technologies and policies. Ryan holds an MS in Energy Technologies from the University of Southern California, where he also received his BS in Chemical Engineering. His research background has focused on low-carbon fuels, life-cycle analysis, and chemical processes. In his new position, Ryan researches decarbonization opportunities in the metallurgical industry and other heavy industry sectors, advanced low-carbon fuels, and electricity grid regulations.



## RESEARCH

### Cost-Effectiveness of Large-Scale Fuel Reduction for Wildfire Mitigation in California

In June, the Climate and Energy team released a report examining the cost-effectiveness of large-scale vegetation (fuel) reduction programs to mitigate wildfire risk in California. The report demonstrated that fuel reduction strategies, such as prescribed burns and mechanical thinning, could potentially result in a net savings of several billion dollars a year to California's macroeconomy. This work offers a critical tool for policymakers and land managers in shaping California's wildfire mitigation strategies under increasing climate pressures.

The report was covered on NPR and in *Slow Boring*, *The Smokey Wire*, and the official California Wildfire Crisis newsletter. Author Patrick Brown was interviewed on CBS Radio San Francisco and several podcasts. Patrick and Nikki Chiappa presented the results at the United States Congressional Western Caucus Briefing on Capitol Hill, and Patrick presented the research in seminars at Columbia University and the City College of New York. Finally, the report led Patrick to be invited to contribute to California's 5th climate assessment. Overall, the work reinforces Breakthrough's position as a leader in identifying effective climate adaptation strategies.





# FOOD AND AGRICULTURE

Breakthrough's Food and Agriculture program continues to advocate for large-scale, high-tech agricultural systems to maximize food production and reduce environmental impacts. Our policy agenda aims to enable farmers and ranchers to produce more on less land, cut food production costs, lower greenhouse gas emissions, and conserve natural ecosystems.

In 2024, the program made notable progress in expanding federal agricultural R&D, improving financing for emerging technologies, and building bipartisan support for agricultural innovation. Program staff were also invited to present to Department of Agriculture and Department of State officials, as well as to wide audiences at major events including the Soil and Water Conservation Society Conference, Reducetarian Summit, and World Food Prize Borlaug Dialogue.

## RESEARCH

### Expanding Research and Financing for Low-Carbon Agri-Food Tech

We published two reports—an annual update to *From Lab to Farm* and *Public Financing for Agricultural Decarbonization and Abundance*—that revealed how federal agencies are failing to adequately support research and financing for agricultural emissions mitigation. At least 22 times more funding is dedicated to clean energy innovation than to R&D on agricultural emissions mitigation, and too much of the existing funding is dedicated to poorly evidenced soil carbon projects. To address these gaps, our reports recommend increasing federal agricultural R&D funding focused on emissions mitigation to at least \$1 billion annually, shifting focus from relatively ineffective soil carbon sequestration to more promising and underfunded areas like enteric methane reduction, creating USDA-backed loan programs to expand access to capital, and expanding demonstration grants to accelerate the deployment of emerging technologies such as alternative proteins and enteric methane-reducing products for livestock. Encouragingly, several of these recommendations are reflected in Farm Bill and appropriations proposals currently under consideration in Congress.



## NEW HIRE



### **Benjamin Goren, Livestock Analyst**

In the summer of 2024, we welcomed Benjamin Goren to the Food and Agriculture team. Benjamin previously worked as a research associate in agricultural policy and economics at the American Enterprise Institute and also has culinary experience as a line cook and sous chef. He holds a BA in Economics from Macalester College. Based in Breakthrough's DC office, Benjamin focuses on identifying effective strategies to reduce greenhouse gas emissions from beef and livestock production.

## RESEARCH

### **Modernizing Biotechnology Regulatory Pathways**

Breakthrough is one of a small number of environmental organizations advocating for modernizing U.S. and international regulatory pathways for biotechnology products in agriculture. Products of biotechnology like genetically modified and gene-edited crops and livestock increase agricultural productivity, reduce the need for agricultural inputs, and have net benefits for climate, the environment, and farmers' profits.

Senior Analyst Emma Kovak published multiple analyses of crop and livestock biotechnology regulations, and found that outdated regulatory oversight threatens to stifle important innovation in plant and livestock biotechnology. Recent changes at the Biotechnology Regulatory Service ease the regulatory burden for biotech companies, and the SECURE rule opens up the pathway to commercialization for smaller companies. But these are small steps. The U.S. biotechnology regulatory regime must do more to support the use of crop and livestock biotechnology to improve U.S. agriculture by further streamlining application review, clearing a backlog of applications, and keeping up with the increasing pace of submissions.



# NUCLEAR ENERGY INNOVATION

For more than a decade, the Breakthrough Institute has been a visionary leader of the civil society pro-nuclear movement. Breakthrough has led efforts to reform the Nuclear Regulatory Commission (NRC) with a particular focus on licensing of advanced reactors. These efforts include significant congressional engagement, culminating most recently in the overwhelming and bipartisan passage of the ADVANCE Act—which, among other things, mandates an update to the NRC’s mission statement so it does not “unnecessarily limit” the use of nuclear energy or the benefits it could provide for society.

The passage of nuclear-specific legislation like the ADVANCE Act and more general policy support as in the Inflation Reduction Act have built important momentum for the technology. NRC staff and commissioners now regularly engage with our team on critical issues related to licensing and regulation of nuclear technology. But much work remains. Legal and statutory reforms at the NRC must be followed by changes in institutional culture and practice. Permitting and other environmental regulatory rules obstruct the deployment of nuclear energy in much the same ways they do all major infrastructure. The anti-nuclear movement, while less influential than it once was, still reliably shows up in Congress, at the NRC, and at state and local levels to vocally oppose all policy and investment efforts to realize a genuine nuclear renaissance.

This year, Breakthrough's Nuclear Energy Innovation program has led efforts to change the leadership, culture, and regulatory norms at the NRC, successfully spearheading a public campaign to block the renomination to the NRC of commissioner Jeff Baran, a long-time opponent of regulatory modernization, and continuing a campaign to pressure Democrats as well as Republicans to appoint commissioners with a clear commitment to regulatory reform. Those efforts paid off this spring when a four-member commission, equally split between Democrats and Republicans, directed the NRC staff to make substantial revisions to the draft version of the "Part 53" licensing framework for advanced reactors as mandated by the Nuclear Energy Innovation and Modernization Act (NEIMA). The commission directed the staff to adopt most of the changes that Breakthrough had recommended during the public comment period, with commissioners explicitly citing Breakthrough research and white papers, as well as an elicitation of consensus stakeholder positions on a number of key strategies for streamlining nuclear licensing and regulatory frameworks to ensure the commercialization of new nuclear technologies that are safe, economically viable, and scalable.

The latest milestone in the Part 53 process was the release of a proposed draft rule in October 2024. However, as with previous drafts, many stakeholders have expressed concerns that this version falls short of the transformative framework NEIMA envisioned. Leadership and accountability by the commission will be necessary to ensure development of a final rule that meets the national interest in developing an innovative and globally competitive advanced nuclear industry.

Moving forward, the key priorities of our Nuclear Energy Innovation program include public advocacy for nuclear energy; comprehensive regulatory engagement at the NRC; congressional engagement, inclusive of both congressional oversight of NRC and ongoing policy support for nuclear commercialization; and research and policy development in support of regulatory reform and public and private efforts to deploy advanced nuclear reactors.

## RESEARCH

### Acceleration of Order Book Creation

The future of U.S. energy sustainability hinges on the successful commercialization of advanced nuclear energy. Despite multiple first-of-a-kind projects being announced, follow-up orders have not materialized. Comprehensive regulatory reforms, proactive legislation, and strategic incentives are essential to securing robust order books—planned and funded future projects on top of first-of-a-kind construction—and ample capital to initiate sequenced reactor projects without interruption. Our analysis shows limited financial protection currently exists, and there are risks of moral hazard that constrict the amount of potentially funded projects.

We have a forthcoming report on the acceleration of nuclear energy deployment through early order commitments. This report explores the current landscape of nuclear energy in the United States, examining the challenges and opportunities related to market structures, state policies, supply chain dynamics, workforce development, regulatory reforms, and government incentives. It will offer detailed recommendations aimed at creating a strategic roadmap for the successful commercialization of advanced nuclear technology, emphasizing the importance of securing robust order books and adequate capital for upcoming projects.

## NEW HIRE



### Joy Jiang, Nuclear Energy Innovation Analyst

Joy joined Breakthrough this past summer after working as a data analyst for three years at the American Enterprise Institute (AEI). She brings expertise in policy analysis and data skills, with an extensive background in the energy policy field. Most recently, she worked on housing policy at AEI, but she is excited to return to the energy sector. Prior to that, Joy was a Green Fellow with the DC Government's Department of Energy and Environment, where she focused on GHG metrics. Based in Breakthrough's DC office, she will conduct cost overrun insurance analysis, present at NRC meetings, and support continued analyses of NRC licensing frameworks.



## RESEARCH

### Quantitative Health Objectives and Risk Aversion at the NRC

To promote deployment of advanced reactors, Congress mandated the NRC to modernize its regulatory framework and take a more technology-inclusive approach. But risk aversion and overly conservative radiological health standards at the NRC limit the construction of new, advanced reactors aimed at decarbonization and energy abundance. In a law review article published in *Environmental Law Reporter* last March, Breakthrough's Adam Stein, along with Kyle Danish and Paul Libus of Van Ness Feldman LLP, argue that the NRC's insistence on using quantitative health objectives (QHOs) places an unnecessary burden on new nuclear and is out of line with other regulatory health standards, such as at the Environmental Protection Agency (EPA).

The report highlights the severe over-regulation of the NRC's current approach, which requires reducing cancer-causing radiation to an order-of-magnitude lower level than already strict EPA regulations. The report also shows that Congress explicitly endorsed the less restrictive EPA standard as the appropriate standard for radiological and other environmental pollution exposures under the air toxins provisions of the 1990 amendments to the federal Clean Air Act. That endorsement established that not only does the agency have substantial latitude to enforce more permissive public health and safety standards for advanced reactors; but, in the wake of the Supreme Court's recent decision overturning the *Chevron* doctrine, the agency probably doesn't have authority to enforce stricter standards. A pre-publication draft of the review was provided to NRC commissioners and played a significant role in the commission's decision to remove QHOs from the Part 53 framework and direct the staff to propose a different cumulative risk standard.





# ENERGY AND DEVELOPMENT

Breakthrough's Energy and Development program is premised on the fact that the world's low-income populations are also those who are least responsible for global CO<sub>2</sub> emissions and most likely to suffer from the effects of climate change. Robust energy systems are needed to reduce poverty and promote livelihoods by boosting agricultural productivity, enabling industry, and allowing low-income populations to fully participate in the global digital economy. Energy at scale is needed for adaptation to climate change, for instance, to power industrial and residential cooling, desalination, and production of steel and cement.

This year, the program continues to address the inconsistencies and failures of climate finance, a major focus of the multilateral development banks (MDBs). To this end, Program Director Vijaya Ramachandran brought together a working group of African and Asian experts to define how the World Bank and other multilateral banks can invest in meaningful adaptations to address both natural weather variability and climate change in developing countries. The report of the working group was published in October.

Vijaya continues to publish essays arguing for a new kind of climate policy that does not punish developing countries and their populations. This work advocates that these countries must be able to develop without being limited by carbon budgets or restricted financing.

## RESEARCH

### Adaptation Finance and the Multilateral Development Banks: From Concepts to Practice

A working group of African and Asian scholars convened by the Energy for Development program found that climate adaptation is significantly underfunded relative to climate change mitigation in developing countries. Across all MDBs, 37% of \$60.9 billion spent on climate finance in low- and middle-income countries in 2022 went to adaptation, while 63% went to mitigation. The study calls for an urgent realignment of funding from MDBs, including the World Bank, to stop underfunding climate adaptation and help vulnerable nations build resilience to climate impacts while pursuing sustainable development.

Despite contributing less than 0.5% of global emissions, low-income countries (those with per capita income of \$1145 or less) are among the most vulnerable to climate change, facing severe consequences such as extreme weather, food insecurity, and economic disruption. Between 2000 and 2024, the World Bank provided only \$14 billion in adaptation finance to these countries. The study argues that by redirecting more climate finance to adaptation projects, the MDBs could help these nations strengthen infrastructure, boost economic resilience, and better prepare for the impacts of climate change.





In 2024, the Breakthrough Institute continued to grow its presence and influence in conversations inside the beltway in Washington, DC. Our federal policy staff, in close collaboration with research analysts, developed policy positions and proposals to advance clean energy innovation, sustainability in agriculture, nuclear modernization, and permitting reform. Breakthrough staff spoke on policy-focused panels and webinars, advised members of Congress on both sides of the aisle on legislative proposals, and engaged with Biden administration offices to weigh in on policy implementation and regulatory priorities.

Over the course of the year, Breakthrough totaled 80+ meetings with Capitol Hill staff. We reached new audiences by engaging with and formally briefing House members of the New Democrat Coalition, the Western Caucus, and the Agriculture Research Caucus. We also engaged with administration officials, including at the Department of Agriculture, U.S. Forest Service, Department of State, Department of Energy, Nuclear Regulatory Commission, and the Permitting Council, as well as the White House Council on Environmental Quality, Office of Management and Budget, and Office of Science and Technology Policy.



## **NUCLEAR ENERGY INNOVATION**

### **ADVANCE Act Passage and Implementation Engagement**

This year, the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act was passed and in July 2024 was signed into law. The Breakthrough Institute had a large role to play in the development of the ADVANCE Act before the first draft was even introduced.

The Breakthrough Institute is now engaged in numerous efforts to get the ADVANCE Act implemented as correctly and swiftly as possible. Since July 2024, we have been busy proactively coordinating with stakeholders, industry, and congressional offices on the implications of implementing ADVANCE as it was intended. Breakthrough is the only NGO that engages with the NRC in every relevant meeting to ensure the ADVANCE Act is implemented effectively. This includes numerous comments to the NRC on specific ADVANCE provisions including environmental reviews and streamlining manufacturing and iterative innovation. In September 2024, the Breakthrough Institute was the first, and one of the few, pro-nuclear organizations to publicly oppose the nomination of Matthew James Marzano to fill the open seat on the five-member Nuclear Regulatory Commission. In the spirit of the ADVANCE Act, the NRC needs commissioners who are committed to evolving the NRC and not settling for the status quo.



## **FOOD AND AGRICULTURE**

### **Farm Bill and R&D Funding Advocacy**

2024 was lining up to be a significant year for food and agricultural policy. But, with Congress's failure to pass a Farm Bill, national policymaking has remained relatively static. Still, Breakthrough has remained a steady voice among advocates of increasing agricultural research and development investment to improve farmer well-being, increase productivity, and help decarbonize U.S. agriculture.

For the first time, Breakthrough co-hosted two policy roundtables to further build support for agricultural innovation. In partnership with Inari Agriculture, we hosted a roundtable with Representative Jim Baird (R-IN-04) in Indiana to highlight opportunities to advance crop genetics and breeding. The second roundtable was co-hosted with Representative Jimmy Panetta (D-CA-19) and

the California Cattlemen's Association, exploring opportunities to advance enteric methane innovation. Both leaders have demonstrated strong support for agricultural research, and these events reinforced the growing bipartisan momentum to increase federal investments in agricultural technologies.

In the most recent appropriations cycle, the Breakthrough Institute submitted 188 requests to House and Senate offices to drive funding to major agricultural research programs, direct increased attention to underfunded research areas that will be critical for reducing agriculture's climate footprint, and reduce premarket regulatory burdens stifling crop biotechnology innovation.

We delivered letters to the House and Senate Agriculture Committees urging robust investments in critical research programs in the next Farm Bill, which garnered sign-ons from more than 60 scientific societies, ag-tech startups, environmental nonprofits, public universities, and research organizations. We also lent our support to 13 other letters calling on Congress to support an innovation agenda led by our partners.

In addition, our research and policy staff drafted and submitted six public comments in response to federal requests for information this year.





## CLIMATE AND ENERGY

### Permitting Reform Advocacy

Permitting remains a significant barrier for building the necessary infrastructure to produce abundant clean energy. Without permitting reform, the vast spending for clean energy deployment will be for naught.

With the publication of our *Understanding NEPA Litigation* report, Breakthrough has been able to make itself a central figure in the permitting reform movement. As Associate Director of Federal Policy for Climate and Energy, Nikki Chiappa briefed the New Democrat Coalition, the Western Caucus, the U.S. Chamber of Commerce, and Senator Joe Manchin's office on the report's findings, and the report was entered into the congressional record by Chair Bruce Westerman of the House Natural Resources Committee.

In addition to researching and advocating broader reforms to NEPA, Breakthrough's staff have focused on specific areas for which federal permitting regulations are preventing infrastructure development and worsening climate outcomes. Our staff emphasized the mining provisions of the Energy Permitting Reform Act of 2024 (EPRA) as essential to expanding domestic critical minerals production, and worked with Senator Hickenlooper's staff to identify the domestic resources most valuable to decarbonization efforts. Our staff also released a major report on the cost-effectiveness of fuel reduction in forested areas for mitigating megafire risk. We shared this research with congressional staff to advocate expedited permitting for mechanical thinning, strategic controlled burns, and other wildfire mitigation projects on federal lands.

As this annual report went to print, both Democratic and Republican cosponsors in Congress continued to prioritize permitting reform and the EPRA for advancement under the lame duck session. Almost regardless of the final outcome, this is encouraging. Lawmakers increasingly recognize environmental permitting and other regulatory obstacles to infrastructure investment and energy abundance. Since Breakthrough is one of the few remaining policy organizations capable of working across the political aisle on energy and environmental issues, the incoming administration and the 119th Congress could open a wide set of opportunities for our energy and permitting teams.

## COMMUNICATIONS

Breakthrough has long criticized contemporary environmentalism for its catastrophism and often regressive and neo-malthusian tendencies. We do so in service of constructing a better ecological politics, better suited to the human and environmental challenges of the 21st century called ecomodernism. Our communications program serves this mission by promoting productive and open-minded discourse that challenges many standard environmental claims about the relationship between human well-being and environmental impacts and the role that technology plays in protecting the environment. Our work and publications increasingly serve not only Breakthrough but a growing cohort of institutions determined to promote science, technology, and infrastructure to assure abundant food, energy, and housing for all.

To that end, Breakthrough produces cutting-edge analyses, policy reports, and discursive essays via our organization's website, external publications, and Substack. Launched in April of this year, our new *Breakthrough Journal* on Substack continues the decade-long tradition of the original *Breakthrough Journal*, publishing original, thought-provoking writing from members of the Breakthrough Institute staff and external authors—in both agreement and disagreement with our principles—on a weekly basis.

THROUGH  
THE END OF  
OCTOBER 2024,  
BREAKTHROUGH  
HAS...

PUBLISHED **149** ARTICLES, REPORTS, AND ESSAYS,

WHICH WERE VIEWED, IN TOTAL, MORE THAN **1.5 million** TIMES

GROWN A SUBSTACK SUBSCRIBER BASE OF OVER **15,000**

AND REACHED **500k+** UNIQUE WEBSITE AND SUBSTACK VISITORS

Our analyses aim to reframe existing debates. To this end, we maintain relationships with key members of the media to expand Breakthrough's reach and shape both elite and popular discourse about climate, clean energy, agricultural productivity, nuclear energy, permitting reform, critical minerals, and international development. So far in 2024, Breakthrough Institute research has been cited in *Politico*, the *Washington Post*, the *New York Times*, *Axios*, MIT Technology Review, NPR, the *Wall Street Journal*, the *Financial Times*, *Semafor*, *Grist*, *Our World in Data*, *Vox*, *The Hill*, and many others. Our analysts and leadership team regularly publish in major external publications like *Foreign Policy*, the *Chronicle of Higher Education*, *The Free Press*, *The New Atlantis*, *City Journal*, *Heatmap News*, *Nature*, and the *Environmental Law Reporter*.

The communications team at Breakthrough is committed to maintaining a keen audience among policymakers, policy wonks, elite media, and existing ecomodern networks. At the same time, we aim to reach larger audiences through new outlets, like YouTube, and by improving our already stellar search engine optimization standards. In 2024, the Breakthrough Institute exceeded expected engagement by more than 70%, outperforming all but one comparable organization in the climate, technology, and environmental space, according to data from TallestTree Digital Public Policy SEO rankings.



## EVENTS

# BREAKTHROUGH DIALOGUE



In June, we hosted the 13th and final Breakthrough Dialogue, marking two decades since the essay “The Death of Environmentalism” first ignited a new wave of thought in the environmental community. This year’s Dialogue was an opportunity to reflect on the progress made over those 20 years and to look ahead to the next phase of the ecomodernist project. More than 150 participants gathered to discuss a range of topics from the anthropocene, to abundance, to ecomodernism. We honored Peter Teague with this year’s Paradigm Award for his extensive work in environmental philanthropy and leadership in the effort to make the future both prosperous and ecologically vibrant.

## FEATURED SPEAKERS



Jerusalem  
Demsas



Kate  
Gordon



Celinda  
Lake



Jason  
Mark



Oliver  
Morton



Robinson  
Meyer



David  
Shor



Ruy  
Teixeira



Omar  
Wasow

## EVENTS

# ABUNDANCE 2024



In October, we launched the inaugural Abundance 2024 event in Washington, DC, co-hosted with the Inclusive Abundance Initiative, in collaboration with the Foundation for American Innovation, Federation of American Scientists, Institute for Progress, and Niskanen Center. The event showcased the emergent Abundance Movement, bringing together policy advisors, experts, and influencers to explore abundance in the context of ongoing policy efforts. Abundance is a new political coalition advocating for expanding material resources, opportunity, and productivity, aiming to realign incentives and redesign systems to support a more inclusive economy. Over 380 guests gathered to hear from more than 60 speakers in panels and mainstage discussions on topics ranging from housing and agriculture to critical minerals and artificial intelligence.

## FEATURED SPEAKERS



Patrick Collison



Jerusalem Demsas



Jane Flegal



Arati Prabhakar



Derek Thompson



Xochitl Torres Small



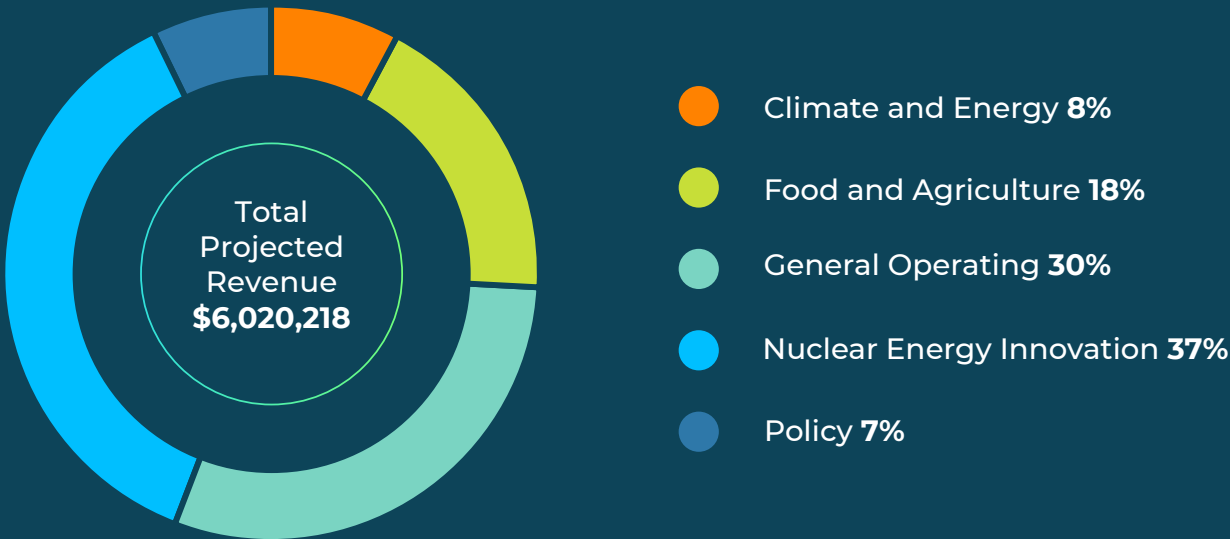
Matthew Yglesias

# FUNDING

The chart below shows the ways in which Breakthrough’s supporters have targeted their resources for our work. (Note that it does not reflect how Breakthrough spends these resources; for instance, general operating support funds are allocated across multiple programs, as well as our events and communications capabilities.) The figures below are preliminary based on contributions already received as well as contributions expected through December 31. Breakthrough is projected to raise over \$6 million by year end.

Nuclear Energy Innovation received the largest share of targeted grants at 37%, underscoring our urgent work to advance transformative nuclear solutions. We are also very fortunate to have received 30% of our total funding as general operating support, enabling Breakthrough to allocate funding as needed and thus providing us a reasonable level of programmatic flexibility.

Note that the 7% targeted to Policy represents restricted funding for policy advocacy managed by our Washington, DC, office.



# OUR SUPPORTERS

As an honest broker dedicated to the public interest, the Breakthrough Institute accepts charitable contributions only from people and institutions without a financial interest in our work. Thank you to the major donors who have given Breakthrough at least \$5,000 over the past year:

**Alex Algard**

**Arnold Ventures (Laura and John Arnold)**

**The Bellwether Foundation**

**Bernard & Anne Spitzer Charitable Trust**

**Bill & Melinda Gates Foundation**

**Breakthrough Energy, LLC**

**The Craig Falls and Allison Cromwell Fund**

**Derek and Leora Kaufman Charitable Fund**

**The Elizabeth Lafayette Fund**

**Fieldstead & Company**

**Garrett Gruener and Amy Slater Family Fund**

**The Greene Wiegand Charitable Fund**

**Humanity United**

**The Jeff and Jacqueline Miller Fund**

**Jeffrey M. Talpins**

**Kiara and Bradford Copithorne Charitable Trust**

**Matthew M. Winkler**

**The Matthew R. Berger Fund**

**The McClave Charitable Fund**

**Open Philanthropy**

**Pamela Gannon and David Douglas Fund**

**Pritzker Innovation Fund**

**Ray Rothrock**

**Renaissance Philanthropy**

**The Rob Granieri Fund**

**The Rodel Foundation**

**Ron and Gail Gester**

**Ross Koningstein**

**Schoewe Family Foundation**

**Stand Together**

**The Winkel Family Charitable Fund**