

**FOR IMMEDIATE RELEASE**

**NOVA “CHASING CARBON ZERO”** **EXPLORES WHAT IT WILL TAKE FOR THE U.S. TO ACHIEVE ITS AMBITIOUS CLIMATE GOALS**

***New One-Hour Film Examines the Technological Innovations that Could Get Us to Net Zero Carbon Emissions by 2050***

**Premieres Wednesday, April 26, 2023 at 9pm ET/8C**

**Also available for streaming at** [**pbs.org/nova**](https://www.pbs.org/wgbh/nova/video/zero-to-infinity/)**,** [**NOVA on YouTube**](https://www.youtube.com/user/NOVAonline)**, and the** [**PBS App**](https://www.pbs.org/pbs-video-app/)

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**BOSTON, MA; April 6, 2023—**The **PBS science series NOVA**, a production of **GBH**, will premiere the one-hour film **CHASING CARBON ZERO**, **Wednesday, April 26 at 9pm ET/8C on PBS**. The changing climate might be one of the biggest and most important challenges humanity has ever faced — but can we stop it before it’s too late? **CHASING CARBON ZERO**, which will also be available for streaming at [**pbs.org/nova**](https://www.pbs.org/wgbh/nova/video/zero-to-infinity/)**,** [**NOVA on YouTube**](https://www.youtube.com/user/NOVAonline)**,** and the [**PBS App**](https://www.pbs.org/pbs-video-app/), examines the science behind the technology that could help us achieve net zero in the next thirty years.

The U.S. recently set an ambitious climate change goal: to achieve net-zero carbon emissions by 2050 and slash emissions in half by 2030. But is that even feasible? What exactly would it take? **CHASING CARBON ZERO** takes a hard look at the problem and identifies real-world technologies that could be up to the task. From expanding the availability of renewable energy options, to designing more energy-efficient buildings, to revolutionizing the transportation sector, the film casts a hopeful but skeptical eye. The problem is vast and time is running out, but there is still hope that we can achieve carbon zero in time to avoid the worst impacts of climate change.

“Communicating effectively about climate change is crucial to our communities,” said **NOVA Co-Executive Producer Julia Cort.** “Through **CHASING CARBON ZERO** and our **CLIMATE ACROSS AMERICA** initiative launching this spring, we take a hopeful, but realistic look at our climate crisis and focus on the tangible solutions that could actually help us reach net zero in the next thirty years.”

**CHASING CARBON ZERO** is reported, produced and directed by **Miles O'Brien,** a journalist who has been on the climate beat for 30 years. “It’s time to shift the reporting narrative from gloom and doom to possible solutions,” says **O’Brien**. “It's important that our viewers know we have the technology to reach net zero.”

To crunch the numbers, O’Brien turns to **Melissa C. Lott,** a Senior Research Scholar and the Director of Research of the SIPA Center on Global Energy Policy at Columbia University. Using just a couple of simple but elegant charts, Lott helps O’Brien understand the essential steps we must take to stay on the path to net zero: (1) electrify as much as we can — things like cars and buildings; at the same time, (2) decarbonize the electricity — that’s replacing carbon-emitting electricity generation with renewable and other zero-carbon technologies; (3) hunt down and squelch the emissions of methane, a greenhouse gas much more potent than carbon dioxide; and (4) push for the breakthroughs that will allow us to tackle the thorniest carbon emitters: aviation, industry, and agriculture.

Buildings represent 13% of total emissions in the U.S., so electrifying our heating and cooling systems, particularly in cities, is crucial for decarbonizing. In 2022, Americans bought more heat pumps than gas furnaces, and on New York City’s rooftops, we can see evidence of how electricity is gaining ground. Viewers meet landlord **Lincoln Eccles** who invested in 14 heat pumps — one for each of the units in the early 20th-century building he owns in Crown Heights, Brooklyn. Heat pumps are more efficient than oil or gas because they're not creating heat; they're just moving it from one place to another. But can this technology be made more accessible to everyone?

That is precisely the goal for **Donnel Baird**, founder and CEO ofthe green tech company BlocPower. Its mission is to make green buildings accessible to all. Baird is kickstarting the move away from combustion by removing old boilers and furnaces in aging multifamily buildings and electrifying them with heat pumps. He believes it’s possible to scale that up to electrify a whole block of buildings, and eventually a whole city and beyond.

Another glaring carbon emitter in our homes: gas ovens and stoves. At Chatham University's Eden Hall Campus, **Chef Chris Galarza**, a culinary sustainability consultant with years of experience running kitchens, gives viewers a “cook’s tour” of a fully electric commercial kitchen. The cooktops operate with induction, which unlike traditional resistance stoves, use electricity to generate a magnetic field to move the electrons inside the cookware. The resulting vibrations heat food much faster than gas burners, without turning the kitchen into a sauna. Transportation is another large sector responsible for emissions. In Detroit, viewers meet **Linda Zhang,** the chief engineer for the all-electric Ford F-150 Lightning. The pickup truck is an important innovation for mass adoption of electric vehicles since F-150 series owners are very loyal to the brand and frequently rely on vehicles for their livelihoods. Demand for the new vehicles is high, just one indicator that electric vehicles may be transitioning from novelty to mass adoption.

But **CHASING CARBON ZERO** producer **Will Toubman** and O’Briendrove a loaned Lightning from Boston to Bangor, Maine, and found huge gaps in fast-charging capability. Even if we are able to electrify many buildings and much of the transportation sector, we still will not reach our goal if the electricity is produced by burning fossil fuels. The film returns to **Melissa Lott,** who explains that the amount of electricity being generated will increase, and the sources of clean electricity will need to increase by adding new zero-carbon sources — like wind, solar, geothermal, and others. Fortunately, we are well on our way, as the costs of wind, solar, and batteries have dropped in recent years.

Wind is a major, and fast-growing, contributor to a clean energy grid. Floating wind is a relatively new idea that opens up waters deeper than 200 feet — the limit for turbines fixed to the bottom. This technology appears ripe for rapid growth, given that floating turbines can be towed to deeper waters where the wind is more consistent. It also makes it possible to develop wind energy off the west coast of the U.S. where waters are precipitously deep.

We meet **Habib Dagher**,Executive Director of the University of Maine’s Advanced Structures and Composites Center, whose team is developing a unique wind and wave simulator to test a scale model of a floating hull for wind turbines called VolturnUS. Dagher hopes to have a larger 11-megawatt turbine floating within a few years and theorizes that offshore wind capacity within 50 miles of U.S. coasts could be enough to power the country four times over.

But what to do when the sun doesn’t shine and the wind doesn’t blow? For a renewable grid to work, we need to develop some new methods of storing electricity. The lithium-ion batteries that are used in electric cars, for example, are too expensive for multi-day storage on the grid. But **Yet-Ming Chiang** of MIT reveals one innovation that could allow for grid-scale energy storage: iron-air batteries. He co-founded a company called Form Energy, which aims to harness the reaction of iron with air as it forms rust. The company hopes to build batteries that can provide electricity to the grid when renewables like solar and wind are down, but also create jobs in the rust belt of America — Form’s first production facility is under construction in Weirton, West Virginia.

Carbon dioxide is not the only greenhouse gas of concern. In fact, controlling another might be one of the strongest levers we have in curbing emissions in the near-term. CO2 represents 80% of greenhouse gas emissions in the U.S. today, but most of the remaining emissions come from methane, a greenhouse gas that is more than 80 times as potent as carbon dioxide at trapping heat in the atmosphere over 20 years. In the oil fields of the Permian Basin in Texas, we meet environmental advocate **Sharon Wilson**, who uses a thermal camera to detect leaking methane. While experts explain that the transition off of oil and gas can’t happen overnight, limiting the methane emissions from these “super emitters” may be the low-hanging fruit.

“It’s extremely important to tell stories that show not only how to *chase* carbon zero, but how to actually catch it! We’re so pleased to broadcast this program which offers viewers a look at the real-world solutions that will help the U.S. achieve our climate goals,” said **NOVA Co-Executive Producer Chris Schmidt**. “Many people feel overwhelmed by the scale of the problem, but this uplifting film presents credible solutions on a human scale.”

“Having spent my career reporting on the dire state of the climate crisis, I now feel an enormous responsibility to present viable solutions to our audiences,” said **O’Brien**. “This film shows that we have the technology and the means to reach our climate goals — I hope this film will provide audiences with the information and tools needed to implement them.”

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**CHASING CARBON ZERO** is a NOVA Production by MOBIAS Media, Inc. for GBH. Produced by Will Toubman. Reported, Produced, and Directed by Miles O’Brien. Senior Producer for NOVA is Caitlin Saks. Executive Producers for NOVA are Julia Cort and Chris Schmidt. NOVA is a production of GBH.

Funding for **CHASING CARBON ZERO** is provided by The Arthur Vining Davis Foundations, the NOVA Science Trust (with support from Anna and Neil Rasmussen and Howard and Eleanor Morgan), the Corporation for Public Broadcasting, and PBS viewers.

**CHASING CARBON ZERO** is part of NOVA’s national **CLIMATE ACROSS AMERICA** initiative launching this spring — spotlighting how climate change is affecting communities across the country, and the innovative solutions being implemented to address the climate crisis. Leveraging the power of the local/national partnerships enabled by the PBS system and with major support from the Corporation for Public Broadcasting — NOVA is working with 10 public media stations and with students in classrooms to produce and distribute multi-platform content aiming to engage their communities in productive conversations about climate solutions.In addition to working with 10 partner stationst to produce localized content and regional screenings, NOVA Education will provide an outreach toolkit for stations and communities throughout the U.S. to host their own events. **CHASING CARBON ZERO** is one of two new NOVA documentaries premiering as part of the initiative, along with **WEATHERING THE FUTURE** (April 12). Audiences can follow online with #ClimateAcrossAmerica beginning April 10.

The **CLIMATE ACROSS AMERICA** initiativeis part of NOVA’s Science and Society Project, with major support from the Corporation for Public Broadcasting. The project is dedicated to telling stories at the intersection of science and society — stories that provide exceptional opportunities for audience engagement, nationally and locally, about the role of science and technology in our lives.

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**About NOVA**

[NOVA](https://www.pbs.org/wgbh/nova/?utm_source=promourl&utm_medium=direct&utm_campaign=nova_2019) is the most popular primetime science series on American television, demystifying the scientific and technological concepts that shape and define our lives, our planet, and our universe. The PBS series is also one of the most widely distributed science programs around the world, and is a multimedia, multiplatform brand reaching more than 55 million Americans every year on TV and online. NOVA’s important and inspiring stories of human ingenuity, exploration, and the quest for knowledge are regularly recognized with the industry’s most prestigious awards. As part of its mission to make the scientific enterprise accessible to all, NOVA is committed to diversity, equity, and inclusion in all its work, from the production process to the range of stories we tell and the voices we amplify. In addition, science educators across the country rely on NOVA for resources used in the classroom as well as in museums, libraries, and after-school programs. NOVA is a production of GBH; more information can be found at [pbs.org/nova](https://www.pbs.org/wgbh/nova/?utm_source=promourl&utm_medium=direct&utm_campaign=nova_2019), or by following NOVA on [Facebook](https://www.facebook.com/NOVApbs/), [Twitter,](https://twitter.com/novapbs?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor) or [Instagram](https://www.instagram.com/novapbs/?hl=en).

**About PBS**

[PBS](http://www.pbs.org/), with more than 330 member stations, offers all Americans the opportunity to explore new ideas and new worlds through television and digital content. Each month, PBS reaches over 120 million people through television and 26 million people online, inviting them to experience the worlds of science, history, nature, and public affairs; to hear diverse viewpoints; and to take front row seats to world-class drama and performances. PBS’s broad array of programs has been consistently honored by the industry’s most coveted award competitions. Teachers of children from pre-K through 12th grade turn to PBS for digital content and services that help bring classroom lessons to life. Decades of research confirms that PBS’s premier children’s media service, PBS KIDS, helps children build critical literacy, math, and social-emotional skills, enabling them to find success in school and life. Delivered through member stations, PBS KIDS offers high-quality educational content on TV — including a 24/7 channel — online at  [pbskids.org](http://pbskids.org/), via an array of mobile apps, and in communities across America. More information about PBS is available at [PBS.org](http://pbs.org), one of the leading dot-org websites on the internet, or by following  [PBS on Twitter](https://twitter.com/pbs), [Facebook](https://www.facebook.com/pbs) or through  our  [apps for mobile and connected devices](http://www.pbs.org/anywhere/home/). Specific program information and updates for press are available at  [pbs.org/pressroom](http://pressroom.pbs.org/)  or by following [PBS Communications on Twitter](https://twitter.com/PBS_PR).

**About GBH**

GBH is the leading multiplatform creator for public media in America. As the largest producer of content for PBS and partner to NPR and PRX, GBH delivers compelling experiences, stories and information to audiences wherever they are. GBH produces digital and broadcast programming that engages, illuminates and inspires, through drama and science, history, arts, culture and journalism. It is the creator of such signature programs as MASTERPIECE, ANTIQUES ROADSHOW, FRONTLINE, NOVA, AMERICAN EXPERIENCE, *Arthur* and *Molly of Denali,* as well as WORLD Channel and a catalog of streaming series, podcasts and on-demand video. With studios and a newsroom headquartered in Boston, GBH reaches across New England with GBH 89.7, Boston’s Local NPR®; CRB Classical 99.5; and CAI, the Cape and Islands NPR® station. Dedicated to making media accessible to and inclusive of our diverse culture, GBH is a pioneer in delivering media to those who are deaf, hard of hearing, blind and visually impaired. GBH creates curriculum-based digital content for educators nationwide with PBS LearningMedia and has been recognized with hundreds of the nation’s premier broadcast, digital and journalism awards. Find more information at [wgbh.org](https://www.wgbh.org/).

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