2021

Annual Report

2022

SEE OUR IMPACT

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Home – Annual Report

FROM OUR DIRECTORS

This annual report highlights our progress on energy education at Penn and our continued efforts toward achieving a more sustainable energy future. We are pleased to report a highly productive year in our three core areas:

fostering research and making an impact

developing tomorrow's leaders

convening energy experts

VIDEO LETTER

2021-2022 Annual Report
Watch later
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FOSTERING RESEARCH AND IMPACT

We continue to publish papers and policy digests from our visitors, faculty, grant recipients, students, and scholars on some of the most timely topics in energy policy. Most importantly, we get our research into the hands of decision-makers who need it most.

WELCOME SHELLEY WELTON

From decarbonization in a democracy to clean energy justice, Shelley Welton's legal research focuses on how climate change is transforming energy and environmental law. This summer, Welton joined the University of Pennsylvania as a Presidential Distinguished Professor of Law and Energy Policy.

Welton's faculty appointment is at Penn Carey Law. She also holds an affiliation with the Kleinman Center. Last year, she was a Kleinman Center visiting scholar. She gave a public lecture and spent time connecting with Penn faculty and students across campus. This fall, she will teach our flagship course: Introduction to Energy Policy.

MEET SHELLEY →

Welton's Kleinman Event

The perceived tension between clean energy and reliability is a failure of law and governance, asserted Shelley Welton in her public lecture. This problem, she explained, results from a siloed approach to regulating the U.S. electric grid. The path forward must include energy law reform that addresses the dual objectives of lowering carbon emissions and ensuring grid reliability.

> Professor Welton is a truly accomplished scholar and teacher who possesses the rarest of gifts in being able, at a deep level, to integrate knowledge across multiple disciplines, in the service of both scholarly and real-world impact.
>
> **CARY COGLIANESE**
>
> Edward B. Shils Professor of Law; Faculty Director of the Penn Program on Regulation

CENTER RESEARCH

NET-ZERO NEVADA

On the path to net zero, states face challenges unique to their local geography and resources. Achieving net-zero goals requires deploying a portfolio of carbon management solutions at a large scale, with solutions that are technically, economically, and socially adapted to the local context.

Our team of researchers at the Clean Energy Conversions Lab dive into a case study of four custom pathways for Nevada.

READ THE DIGEST

READ THE FULL PAPER

ABOUT THE LAB

200%

Under aggressive decarbonization scenarios, meeting demand for electricity in 2050 requires a doubling of current installed capacity.

RESEARCH GRANTS

Each year, the Kleinman Center awards grants to Penn faculty, postdocs, and doctoral students to support new research or further existing research. Our researchers explore critical issues and address challenges that have regional, national, and global implications.

ZONING AND THE REGULATION OF SOLAR FARMS ON AGRICULTURAL LAND

What is the extent of the potential land competition between solar farms and agricultural production and how are they regulated? This project studies the zoning ordinances that regulate solar farms in agricultural areas.

ACCESSIBILITY TOOL FOR ENERGY-EFFICIENT TRANSPORTATION

Transportation systems are a critical part of our communities. This project continues to design and build an open-source tool that allows government agencies, stakeholders, and transportation community members to evaluate and communicate the impact of energy-efficient transportation systems.

HEALTH BENEFITS OF THE CLEAN ENERGY TRANSITION

Three billion people still use traditional biomass energy for cooking, risking respiratory infection among low-income populations. In this project, the researcher studies the impacts of reduced charcoal exposure on health and household beliefs about these benefits.

DETERMINANTS OF LOCAL POLICYMAKER SUPPORT FOR CLIMATE POLICY

Despite the significant threat posed by climate change, it remains a polarizing issue with limited federal success. This project examines factors that make local policymakers more or less likely to support climate policies.

EXPLORE ALL OUR GRANTS →

DIGESTS AND REPORTS

THE ECONOMICS OF BUILDING ELECTRIFICATION

LINKING TWO EMISSIONS TRADING SYSTEMS

BARRIERS TO ENERGY EFFICIENCY ADOPTION

The percentage of U.S. homes heated with electricity has increased steadily from 1% in 1950 to 40% in 2020. New research explores the implications of this increase for a growing number of policies aimed at electrifying buildings.

China's long-awaited national emissions trading scheme is finally here. Together with the EU, these two markets now represent the largest cap-and-trade systems in the world. Learn what it would mean for the EU and China National ETS to merge, as well as what challenges the two jurisdictions might face in the process.

Energy efficient technologies could spur sustainable development by generating financial savings while also lowering carbon emissions. Subsidies or access to credit could help the poor adopt these technologies.

● ○ ○ ○

RESEARCH RECOGNITION

103

MEDIA MENTIONS

103 mentions in media and press this year

40

ACADEMIC REFERENCES

40 academic references to Kleinman Center work this year

605 M

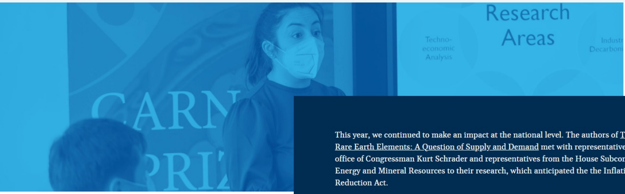
REACHED IN MEDIA HITS

Our media mentions reached over 605 million readers

> The second semester of my special topics course on carbon dioxide removal begins next week. Huge shout out to the authors of the CDR Primer—students really appreciate this free online text!

JOE SAGUES

Assistant Professor at North Carolina State



This year, we continued to make an impact at the national level. The authors of The Not-So-Rare Earth Elements: A Question of Supply and Demand met with representatives from the office of Congressman Kurt Schrader and representatives from the House Subcommittee on Energy and Mineral Resources to their research, which anticipated the the Inflation Reduction Act.

VISITING SCHOLARS

We were excited to welcome scholars back to Penn's campus where they met with students and colleagues and gave public lectures.

Lucas Davis

Jeffrey A. Jacobs Distinguished Professor, UC Berkeley

Chandra Farley

CEO, ReSolve

Thomas Hale

Professor of Public Policy, University of Oxford

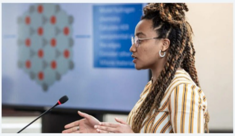
DEVELOPING TOMORROW'S LEADERS

Whether through classroom learning or immersive internships around the globe, we help prepare our students for careers at the center of the energy transition.

ENERGY WEEK

VIDEO HIGHLIGHT

Energy Week at Penn 2022
Watch later
Share
Watch on YouTube



This April, the Kleinman Center and Vagelos Institute for Energy Science and Technology hosted a week of energy-focused events across campus. Our event lineup included student lightning talks, an alumni career panel, a live podcast about the energy impact of the crisis in Ukraine, and a conversation with climate fiction author Kim Stanley Robinson.

EXPLORE THE EVENTS

READ THE ARTICLE

EXPLORE THE WEBSITE

20

EVENTS HELD

During Energy Week at Penn

> What a great line up of events!
>
> **JORGE MARTINEZ**
>
> SEAS'16 Alum on Instagram

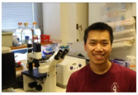
BLOG COMPETITION

Undergraduate and graduate students had the opportunity to get published in our second-annual student blog competition. This year's topic focused on a just transition. The insights cover issues from air pollution in Mongolia, to energy justice in New York City, to mining in the Navajo Nation.

READ MORE →

MINING INDIGENOUS COMMUNITIES

FIRST PLACE – Years after mining companies rushed into Navajo reservations in search of uranium, these communities are still dealing with a legacy of contaminated water. Indigenous voices help us avoid mistakes of the past, says first-place winner Sheil Desai.



LIFE WITH POLLUTION VS. LIFE IN POVERTY

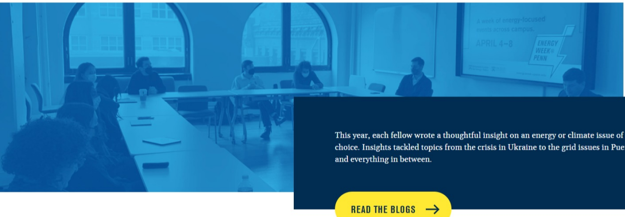
SECOND PLACE – Curbing fossil fuel use can help alleviate air pollution. But in Ulaanbaatar, Evan Qiang writes about how shift from fossil fuels proved to increase class divisions and inequality.

ENERGY POLICY AND CITIZENSHIP AFFIRMATION

THIRD PLACE – The energy transition is about more than technological progress. Gabrielle Utomo explores progressive policies that can spur positive change, which creates a more equitable society and extends beyond energy.

UNDERGRADUATE FELLOWS PROGRAM

Each spring, the Kleinman Center hosts its undergraduate student fellows program. Bi-weekly student sessions provide students with the opportunity to meet and learn from energy scholars who discuss findings and policy implications of their recent research.


A week of energy-focused events across campus.
APRIL 4–8
ENERGY WEEK@ PENN

This year, each fellow wrote a thoughtful insight on an energy or climate issue of their choice. Insights tackled topics from the crisis in Ukraine to the grid issues in Puerto Rico and everything in between.

READ THE BLOGS →

> I really enjoyed writing the blog and participating in such a great seminar program at the Kleiman Center this spring.
>
> **SEAN DERESH**
> 2022 Undergraduate Fellow

SUMMER FELLOWSHIPS

Energy policy fellowships give Penn students a unique, hands-on learning experience at high-profile institutions. Students work at the International Energy Agency in Paris, Energia in The Hague, and the Philadelphia Energy Authority—right here in Philadelphia.

Introducing: Energia Fellowship

This year, we introduced a third fellowship with Hivos and the Energia Network. This fellowship was developed in honor of Carnot Prize winner Sheila Oparaocha, director of the Energia Network. Over the summer, Naimat Chopra (second from right) developed a framework for analyzing the gender equality implications of 164 national energy commitments.

MEET OUR FELLOWS

Naimat Chopra

2022 Kleinman Energia Fellow

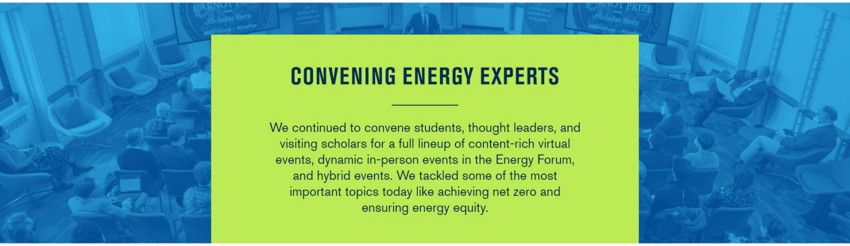
Jacob Hyppolite

2022 Kleinman Birol Fellow

Walter Johnsen

Student Advisory Council Member

> The amount of knowledge, experience, and exposure I received working with Sheila Oparaocha was phenomenal.
>
> **NAIMAT CHOPRA**
> 2022 Kleinman Energia Fellow



CONVENING ENERGY EXPERTS

We continued to convene students, thought leaders, and visiting scholars for a full lineup of content-rich virtual events, dynamic in-person events in the Energy Forum, and hybrid events. We tackled some of the most important topics today like achieving net zero and ensuring energy equity.

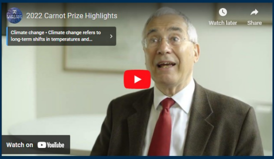
CARNOT PRIZE

Kleinman Center for Energy Policy
2022
CARNOT PRIZE
Nicholas Stern
@KleinmanEnergy • #CarnotPrize

The Kleinman Center awarded this year's Carnot Prize to Lord Nicholas Stern, professor at the London School of Economics and Political Science (LSE), author of the groundbreaking *Stern Review on the Economics of Climate Change*, and former chief economist and senior vice president of the World Bank. Stern is known for his urgent call to action on climate change—sustained over a period of decades. The Carnot Prize is the Kleinman Center's annual recognition of distinguished contributions to energy policy through scholarship or practice.

WATCH THE EVENT **LISTEN TO THE PODCAST**

VIDEO HIGHLIGHTS


2022 Carnot Prize Highlights
Climate change • Climate change refers to long-term shifts in temperatures and...
Watch later
Share
Watch on YouTube

COP26

A delegation from Penn traveled to Glasgow, Scotland to attend the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP26). This is the second time Penn has had official observer status at the crucial global conference on climate change.

Arshad Mansoor
EPRI
Ernest Moniz
Energy Futures Initiative and
EJM Associates
Maryam Brown
SoCalGas
Dr. Jennifer Wilcox
US Dept. of Energy

Penn faculty, researchers, and students attended the conference, presented research, and participated in events and critical discussions. Kleinman Center Faculty member Jennifer Wilcox (pictured) was on the COP26 stage discussing net zero and the importance of transitioning industrial cities.

REFLECTIONS FROM COP26 →

> For us it is important to connect our work with real problems, not just around the corner but around the globe.

MARK ALAN HUGHES
Faculty Director, Kleinman Center

PUBLIC EVENTS

Both in person and in the virtual world, we delivered events on topics from grid reliability to net zero.

GOVERNING NET ZERO

Visiting Scholar Thomas Hale discusses the next phase of net zero and the governance required to achieve the goals.

A CONVERSATION WITH KIM STANLEY ROBINSON

Join author Kim Stanley Robinson in conversation with Zeid Ra'ad Al Hussein, as he discusses his new novel and a vision of climate change over the coming decades.

RENEWABLE ENERGY AND INDIGENOUS COMMUNITIES

How do indigenous groups worldwide perceive the growth of renewable energy? Is it an opportunity or a risk? The panel discusses how to minimize the new threats and make the energy transition more just for the indigenous people.

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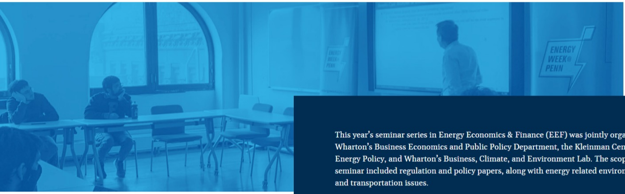
ENERGY ECONOMICS & FINANCE SEMINAR



This year's seminar series in Energy Economics & Finance (EEF) was jointly organized by Wharton's Business Economics and Public Policy Department, the Kleinman Center for Energy Policy, and Wharton's Business, Climate, and Environment Lab. The scope of the seminar included regulation and policy papers, along with energy related environmental and transportation issues.

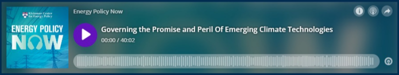
SEE THE SPEAKERS →

PODCAST

In its sixth season, *Energy Policy Now* covered timely energy topics on everything from the bipartisan infrastructure bill to solar geoengineering.

FEATURED EPISODE

The first episode in a mini-series exploring governance challenges surrounding the transition to clean energy, guest Shuchi Talati, former chief of staff of the Department of Energy's Office of Fossil Energy & Carbon Management, discusses the need for strong governance to balance the potential benefits of carbon dioxide removal technologies with environmental and social risks.



Energy Policy Now

Governing the Promise and Peril Of Emerging Climate Technologies

00:00 / 40:02

22

EPISODES

Released this year

261,252

EPISODE DOWNLOADS

In the last year

BROWSE ALL EPISODES →

> The most insightful resource I have found when it comes to understanding energy policy—the reality of where we are today, and the hurdles that need to be overcome for us to get where we need to be—is the Energy Policy Now podcast.

HENKEL SMITH

Review on LinkedIn

BEHIND THE SCENES

We are appreciative of the people working with us behind the scenes to make each year a success. We are thankful for the hard work of our staff, the expert guidance of our advisory board, the tireless support from our Dean and Weitzman leadership, and the donors who make this work possible.

ADVISORY BOARD

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Mark Brownstein

Senior Vice President, Environmental Defense Fund

Emily Duncan

Senior VP of Federal Affairs, American Electric Power

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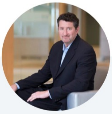

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Eric Gribetz

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Scott Kleinman

Co-President, Apollo Global Management

STAFF

Bill Cohen

Center Coordinator

Cornelia Colijn

Executive Director

Mark Alan Hughes

Director Emeritus

Annual Report Archive

2020-2021

Clean Energy Conversions Lab • Explainer Video • Virtual Engagement • Carnot Prize: Sheila Oparaocha

Read the Report

2019-2020

First Faculty Hire: Jennifer Wilcox • First Energy Week at Penn • Carnot Prize: Cheryl LaFleur • COVID-19 Response

Read the Report

2018-2019

$30 Million Renewal Gift • Carnot Prize India: Piyush Goyal • Philadelphia Refinery Report

Read the Report

2017-2018

Kleinman at Home & Abroad • Carnot Prize: Gina McCarthy • Advisory Board Growth

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2016-2017

Energy Policy Now Podcast Launch • Carnot Prize: Fatih Birol • First IEA Summer Fellow

Read the Report

2015-2016

Fisher Fine Arts Renovation • First Carnot Prize: Daniel Yergin • New Programming

Read the Report

2014-2015

$10 Million Gift • Center Opening • Vision & Plan • New Research & Programs

Read the Report

Kleinman Center for Energy Policy
at the University of Pennsylvania
Stuart Weitzman School of Design

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