

Just Energy Transition and Workforce Development

Critical Challenges for the Fledgling
U.S. Offshore Wind Energy Industry

MOCEAN Kickoff Meeting

January 4, 2023

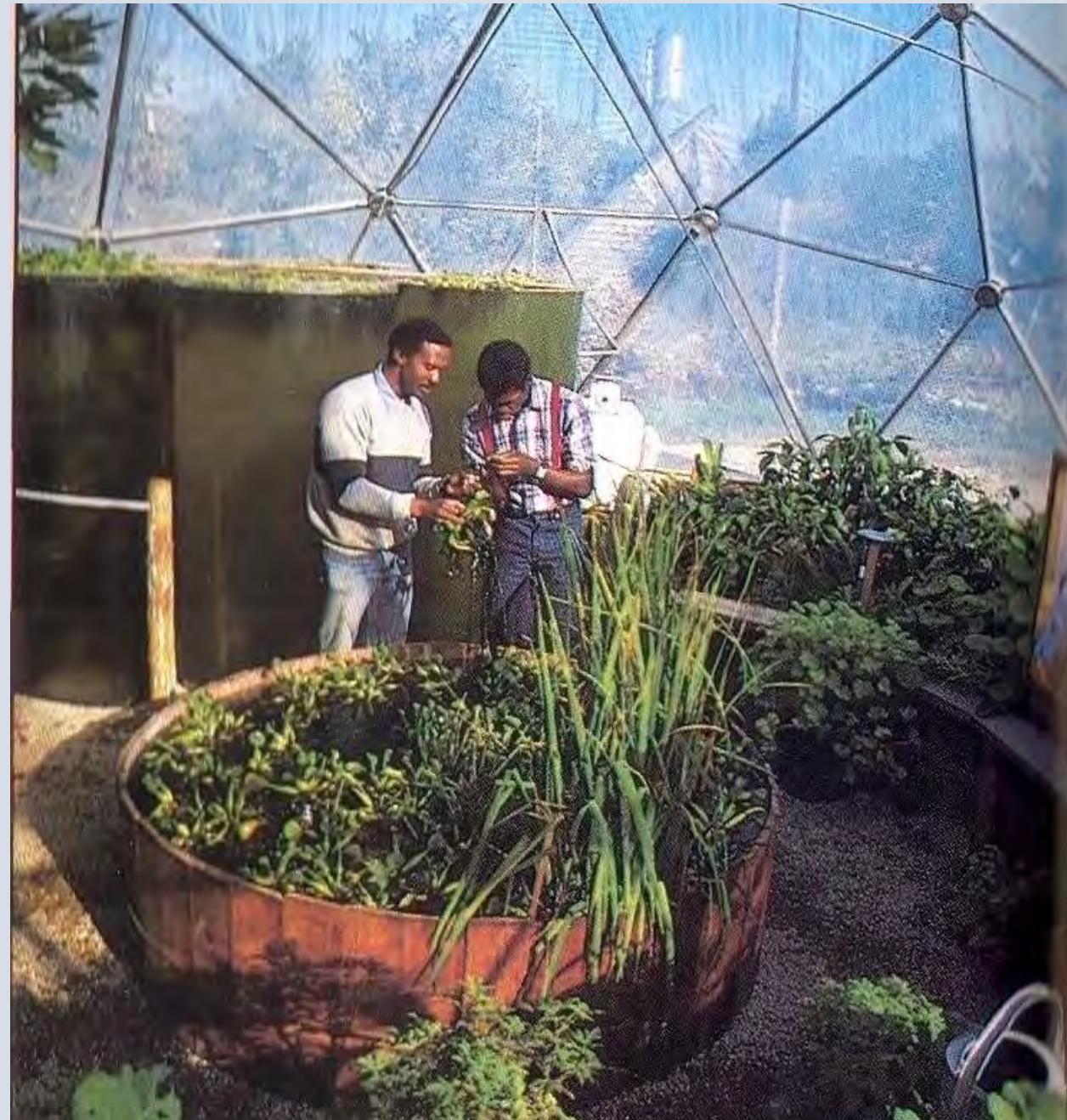
Tufts University

Greg Watson

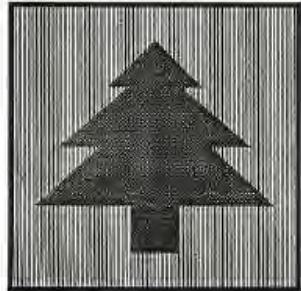
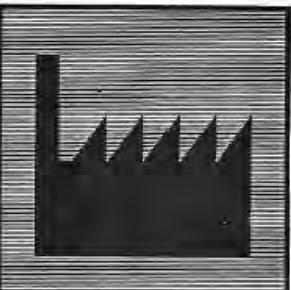
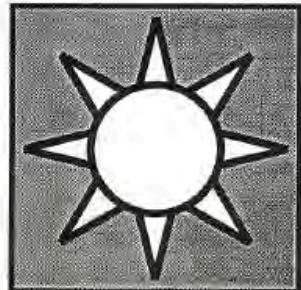
World Game Workshop

World Grid Project





SUSTAINABILITY



Special Report on Global Climate Change

THE REPORT OF THE MASSACHUSETTS OFFICE OF SCIENCE AND TECHNOLOGY-SUMMER 1989

1989

We're launching
a new era for
renewable energy
in Massachusetts.

www.mtpc.org/massrenew

**Massachusetts
Renewable Energy
TRUST**
A division of the
Massachusetts Technology Park Corporation

2000

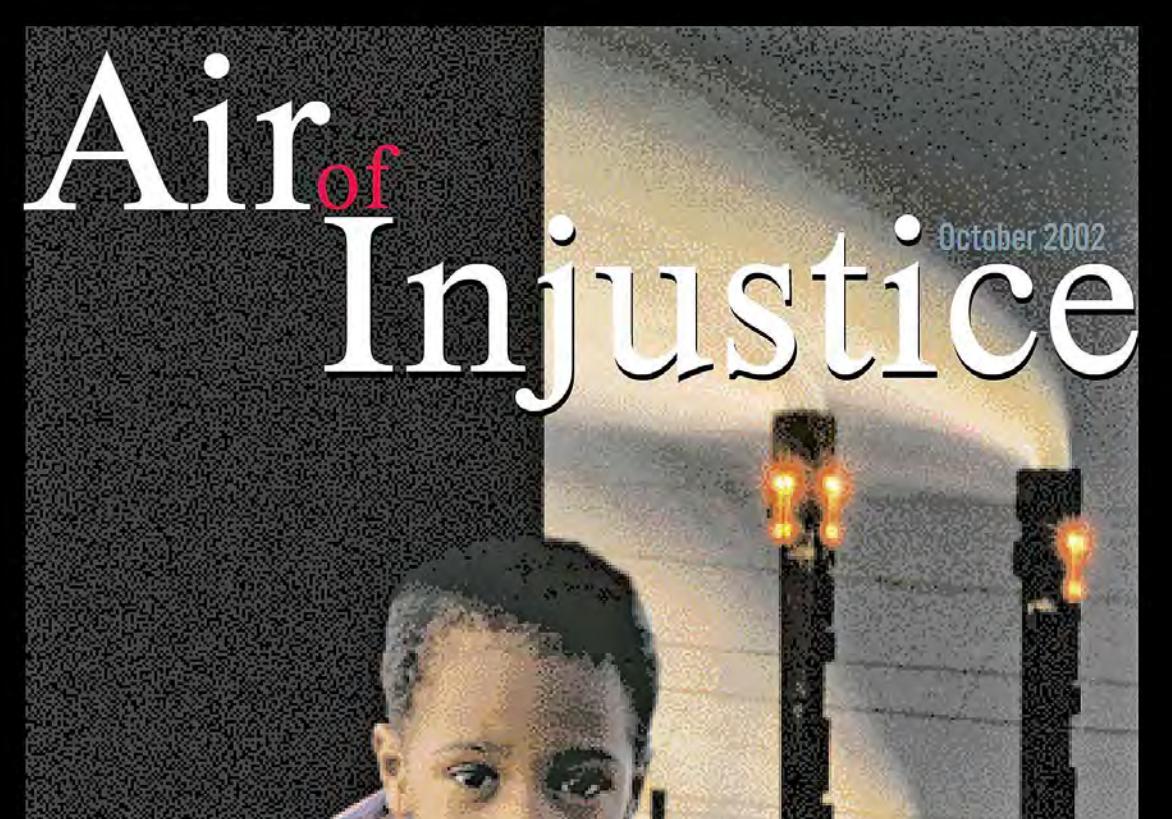
THE CAPE COD VOICE

JANUARY 17-30, 2002 • PUBLISHED FORTNIGHTLY • VOLUME 1, NO. 19 • \$1.50

Are we buying the
wind farm?

Gales of thought and opinion, with
occasional gusts of hard and fast
information, are blowing from
every point of the compass —
including the past.

2002



Author

Aviva Chomsky

Guajira, and Armando Pérez Araujo, a lawyer who has worked for the past decade defending communities in the Guajira affected by the Cerrejón Zona Norte coal mine. This visit was particularly poignant for both sides, because the Salem Harbor Power Station is one of several in the United States that purchase coal from the Cerrejón Zona Norte mine.



26-4 Indigenous Responses to Plan Colombia

May 5, 2010

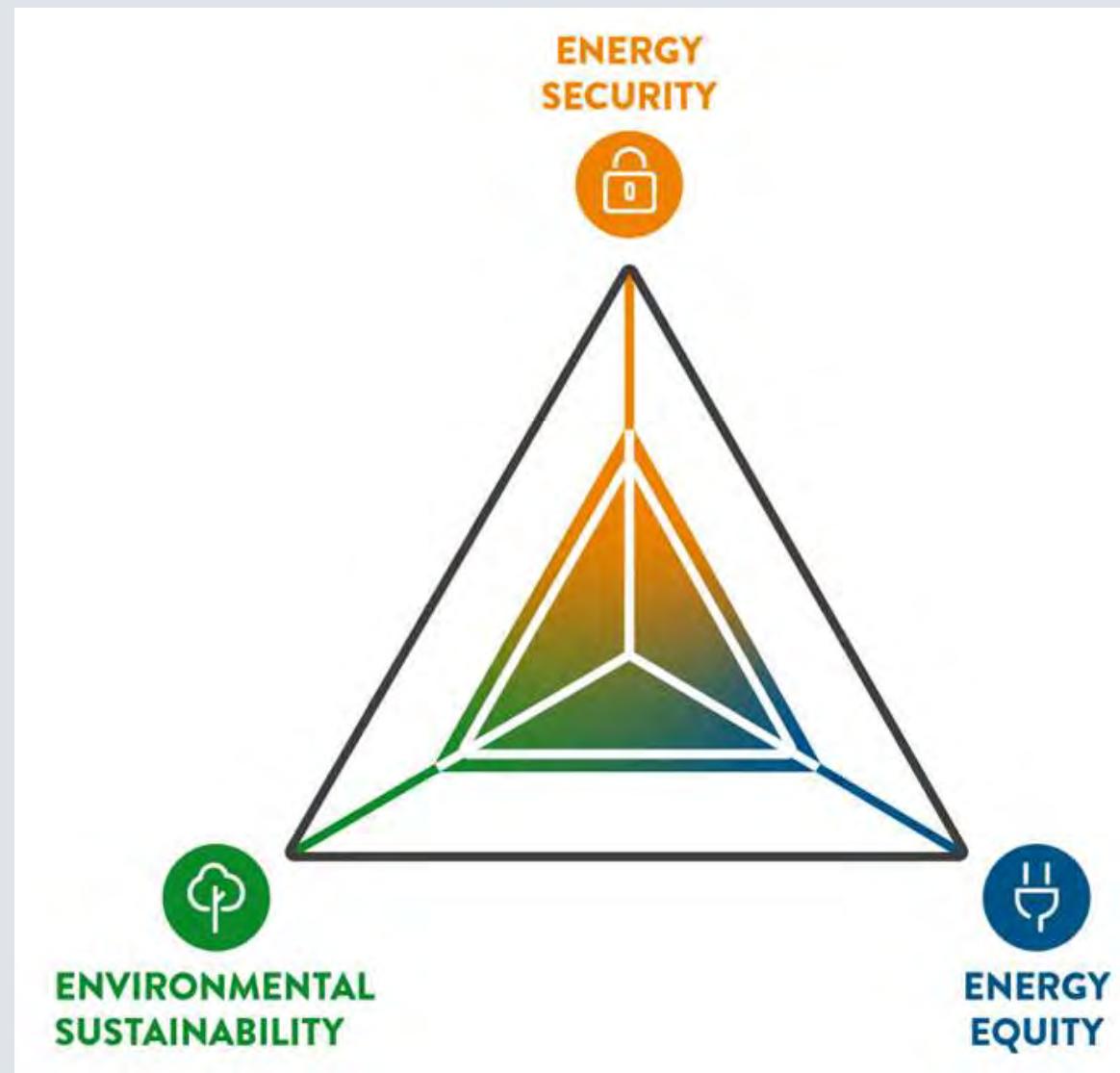
The Massachusetts Connection: Colombian Indigenous Residents Bring Coal Mine Concerns to U.S.

In May the North Shore Colombia Solidarity Committee (NSCSC) in Salem, Massachusetts, hosted Remedios Fajardo, an indigenous Wayúu who in 1982 founded the indigenous rights organization Yanama in the Colombian

ENERGY TRANSITION



Energy Trilemma





Offshore wind is America's new industry. Who will build it?

By Benjamin Storrow, Miriam Wasser | 10/13/2021 06:25 AM EDT



| WATCH: GLOBE TODAY | MONEY, POWER, INEQUALITY |

Nearly 2,000 Mass. residents have worked on Vineyard Wind project so far, new report shows

By [Jon Chester](#), Globe Staff, Updated December 14, 2023, 3:36 p.m.



GE Haliade-X Turbines stand in the Vineyard Wind 1 Project Area south of Martha's Vineyard.

Nearly 2,000 Massachusetts residents have worked on the massive \$4 billion Vineyard Wind offshore project so far, according to a new report out Thursday from UMass Dartmouth and Springline Research Group.

Vineyard Wind 1: Impact on Jobs and Economic Output

Annual Report #1

Union Wage Premium

Much of the construction work is being performed by union labor under a Project Labor Agreement (PLA). A PLA specifies the wages, overtime wages, and fringe benefits to be paid on a project and is usually higher than the prevailing wage required on public projects. The University of California Berkeley's Center for Labor Research and Education recently found that nationally, in 2015, union construction workers were

The union wage premium is particularly significant for people of color and women.¹⁷ For example:

- Wages for black union workers are 14.7% higher than those of their nonunion counterparts, while white union workers make 9.6% higher hourly wages than their nonunion peers.¹⁸
- Black union workers are 17.4 percentage points more likely than nonunion workers to have employer-provided health insurance and 18.3 percentage points more likely to have an employer-sponsored retirement plan.¹⁹
- Women represented by labor unions earn an average of 30.9% more per week than women in nonunion jobs (among full-time workers aged 16 and older).²⁰
- Hispanic women represented by labor unions have median weekly earnings that are 42.1 percent higher than those without union representation.²¹

Employing union labor under PLAs not only provides a living wage for construction and trades workers employed on the project, but it also boosts the regional economic impact of a project through higher induced impacts as a result of the higher disposable income of union members working on the project.

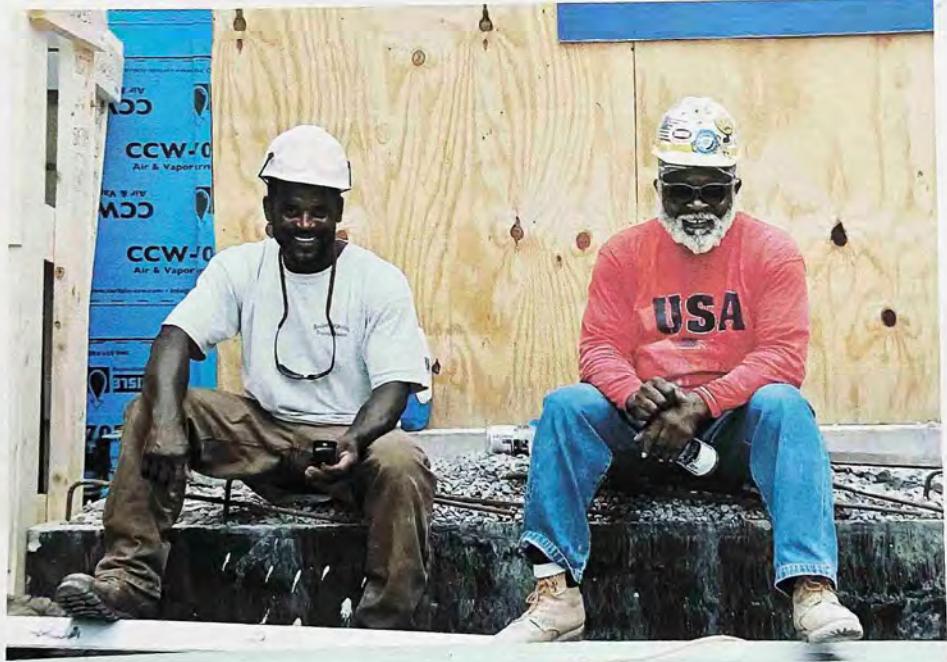
A HISTORY OF BLACK ACTIVISM IN BOSTON'S CONSTRUCTION INDUSTRY

TRAVIS WATSON OCTOBER 2023



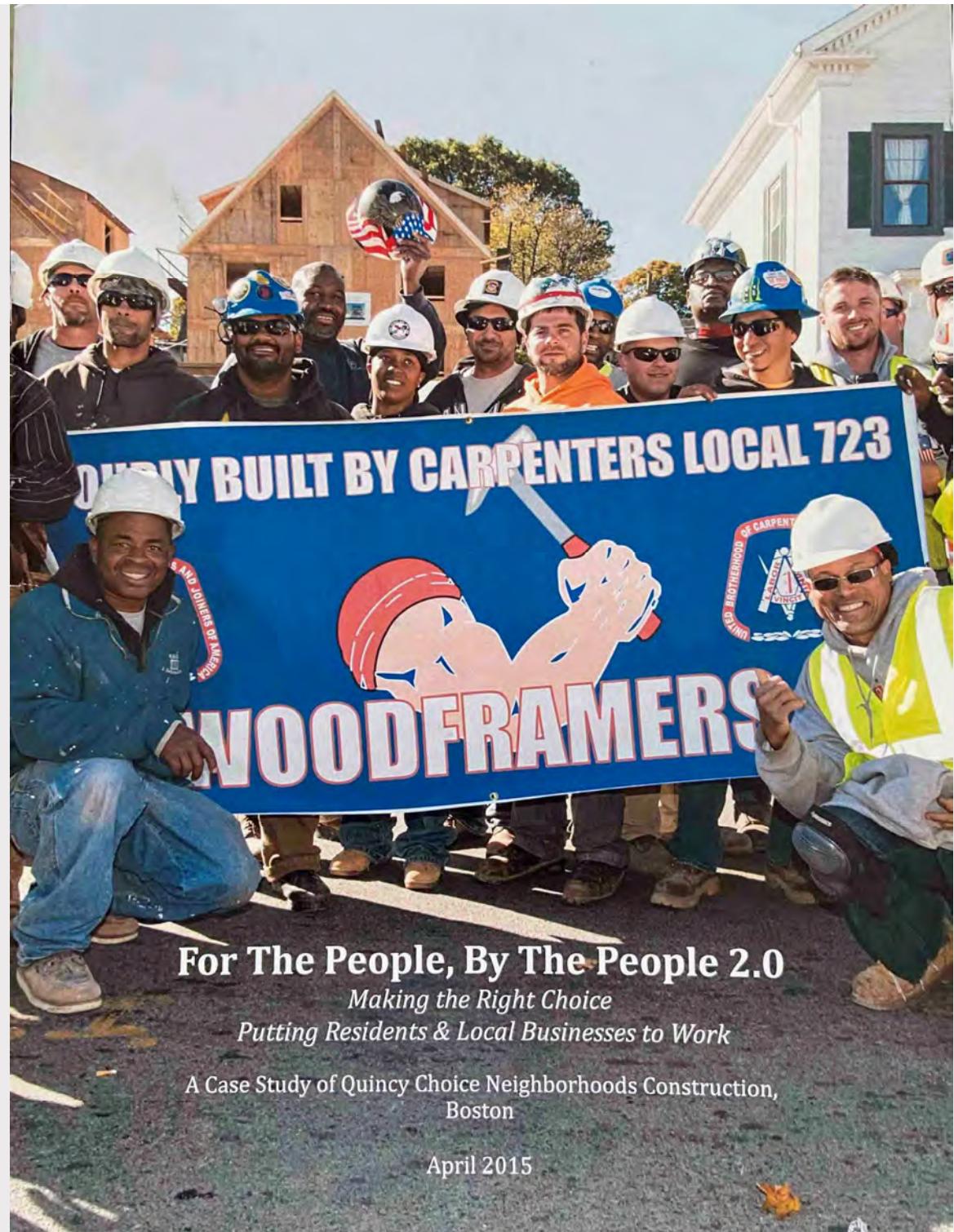
MEMBERS OF THE UNITED
COMMUNITY CONSTRUCTION WORKERS

FOR THE PEOPLE, BY THE PEOPLE



**best practices for maximizing resident,
minority and female participation on
construction projects**

as learned through the construction of
The Salvation Army Ray and Joan Kroc Corps Community Center, Boston



For The People, By The People 2.0

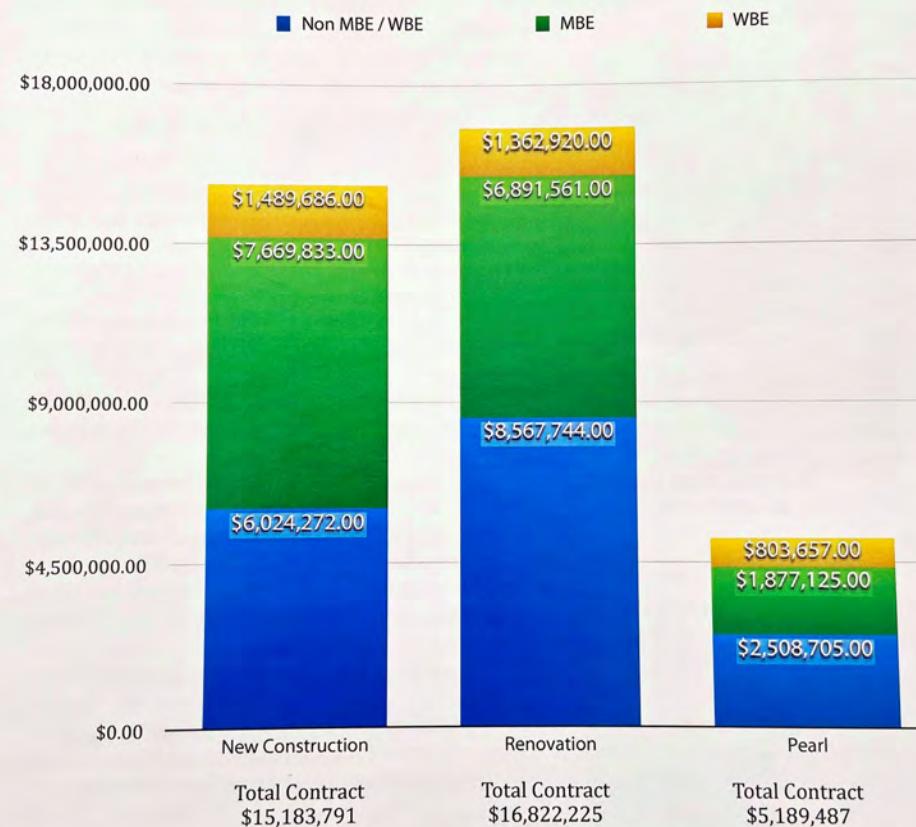
*Making the Right Choice
Putting Residents & Local Businesses to Work*

A Case Study of Quincy Choice Neighborhoods Construction,
Boston

April 2015

MBE and WBE Economic Impact

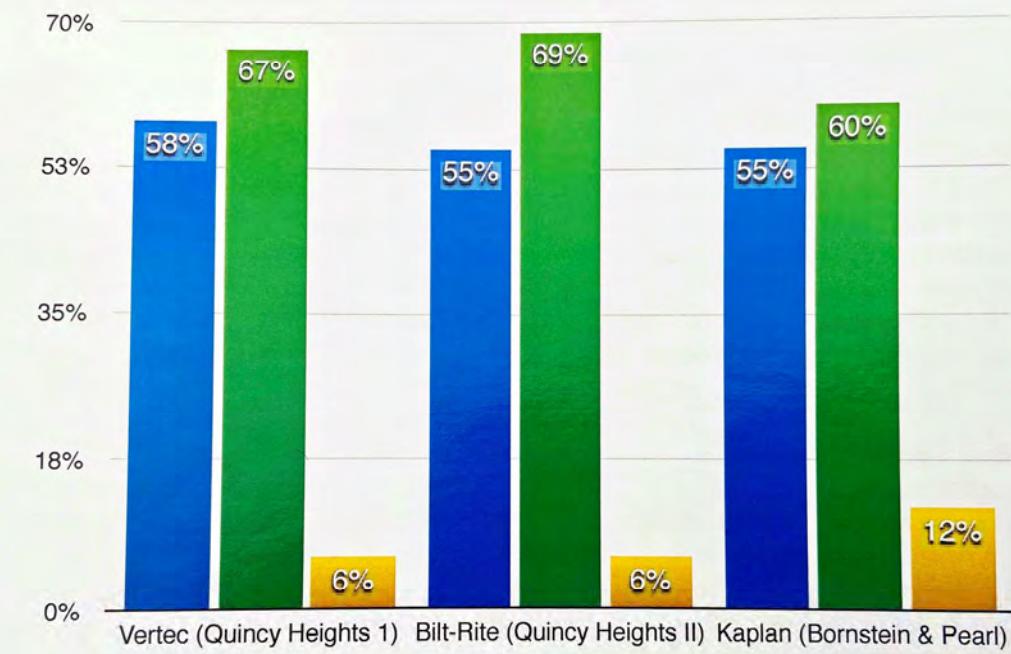
Minority and women-owned business economic impact on Choice Neighborhoods Projects

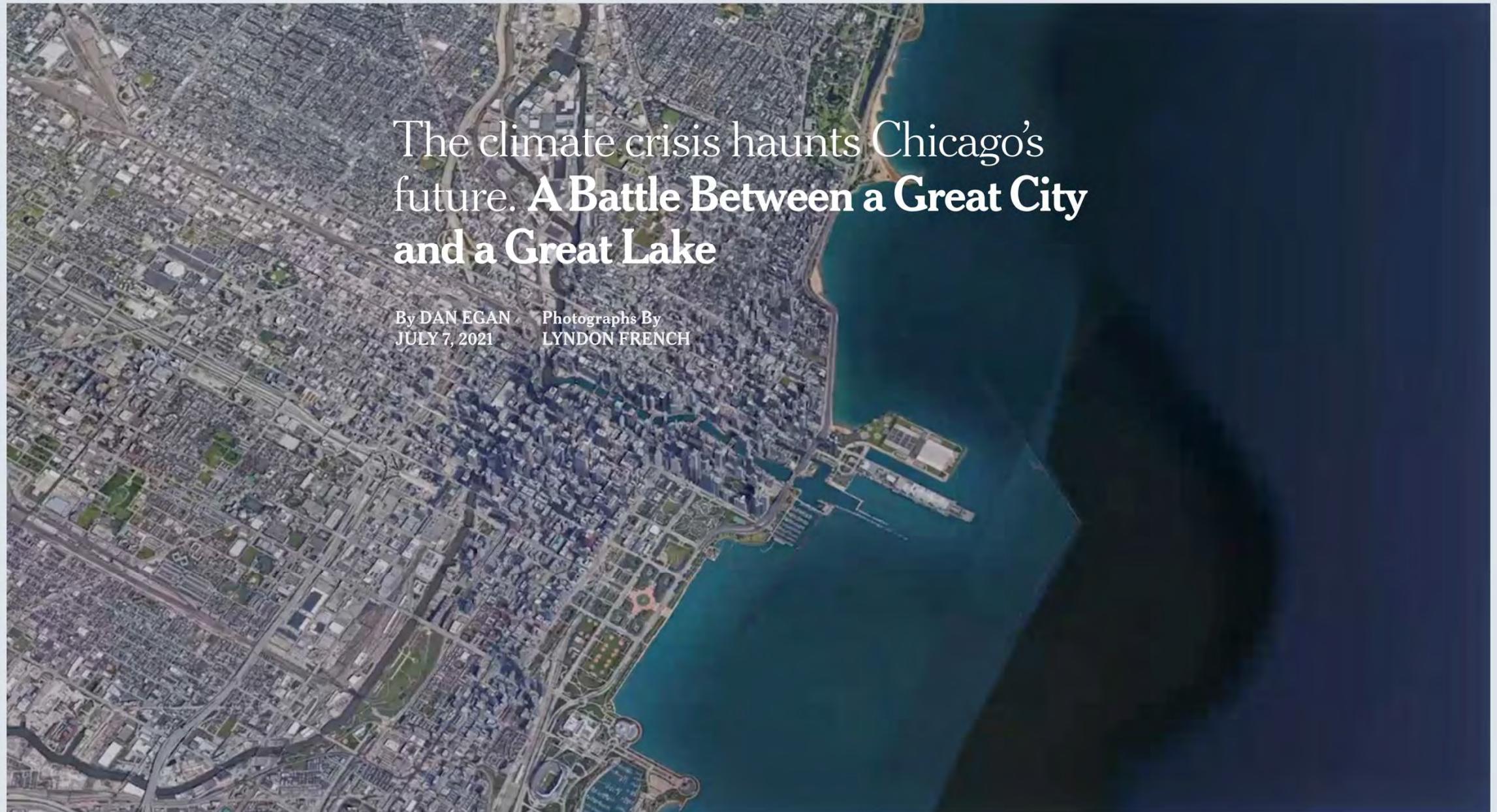


Workforce Requirements

51% Boston residents, 51% Minority workers & 15% Female workers

Boston Resident Workers Minority Workers Female Workers

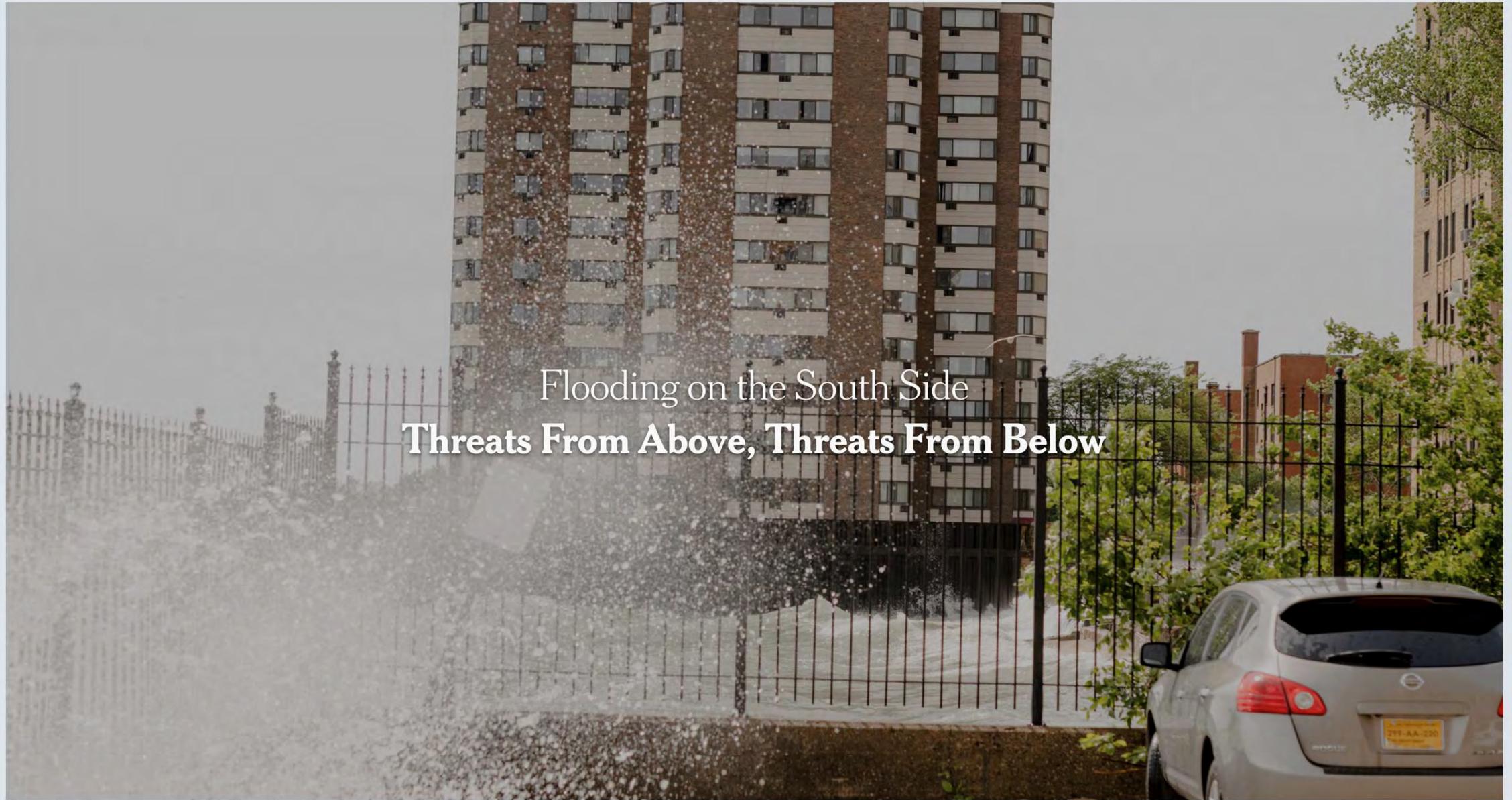




The climate crisis haunts Chicago's future. **A Battle Between a Great City and a Great Lake**

By DAN EGAN
JULY 7, 2021

Photographs By
LYNDON FRENCH



Flooding on the South Side
Threats From Above, Threats From Below



RUST BELT TO
GREEN BELT

OFFSHORE WIND

**Bring offshore
wind to Illinois &
create jobs in
Black & Brown
communities**



Sign the petition today



New alliance aims to turn this Rust Belt city into a ‘Green Belt’ hub

The public-private alliance wants \$1 billion in federal funding for a “Rust Belt to Green Belt Initiative,” indicating the region is ready to move past its nickname from the 1970s.

Published Oct. 10, 2023



FRIENDS OF WIND SERIES: BUILDING AN INCLUSIVE OFFSHORE WIND INDUSTRY IN ILLINOIS

How Offshore Wind Can Deliver Community Benefits and Help Close the Racial Wealth Gap

A “Rust Belt to Green Belt” bill on Illinois Offshore Wind is now being promoted and could be passed into law this year. Who should get the jobs, incentives, and other publicly-funded benefits? Join our discussion series with community and other stakeholders to learn more!

Experts will include: Senator Robert Peters, Representative Marcus Evans, Greg and Travis Watson, Blacks in Green, Climate Jobs Illinois, Illinois Sierra Club, and Diamond Offshore Wind

THURSDAY, NOVEMBER 3, 2022 | 6:00PM - 7:30PM
BLACKS IN GREEN LIVING ROOM, 6431 S COTTAGE GROVE
RSPV: [BIT.LY/WINDSERIESNOV3](https://bit.ly/windseriesnov3)



CANARY MEDIA

A Brooklyn neighborhood's long fight for green jobs is paying off

In New York City's Sunset Park, Equinor's plan for a wind turbine hub is part of the community's larger vision to clean up and revive the waterfront.

13 October 2022



Climate activists march in Sunset Park, Brooklyn. (Erik McGregor/LightRocket/Getty Images)

November 2023

Equinor has recognized a \$300m impairment on its US offshore wind projects.

According to the group's third quarter report, the three projects, 1230MW Beacon Wind, 816MW Empire Wind 1 and 1260MW Empire Wind 2, which are being developed alongside bp on the US Northeast Coast, were negatively impacted by cost inflation and supply chain constraints.

UPROSE, a grassroots organization that serves the neighborhood, and other local groups have pushed for years to revitalize the dormant waterfront. Not by building luxury apartments and retail shops, which they say would hasten gentrification, and not by adding dirty factories that further pollute the air — but by developing clean-energy industries in their own backyard.

SECTIONS

Albany residents offered training for offshore wind jobs



The developers of a wind farm 30 miles off the shore of Long Island are providing \$300,000 to train residents of Albany's South End neighborhood to help build it.

Real Estate Local News

NYC Plans a New Wind Farm in Staten Island

By Tyler Williams Updated August 9, 2022



Staten Island wind turbine facility gets big boost: \$48M in federal funding

Updated: Oct. 26, 2022, 9:16 p.m. | Published: Oct. 26, 2022, 6:20 p.m.



An artist's rendering depicts the proposed Arthur Kill Terminal in Richmond Valley. (Courtesy Atlantic Offshore Terminal)

November 2023

STATEN ISLAND, N.Y. — One of Staten Island's most sought-after offshore wind projects missed another round of state funding announcements, but its developers said this week that they're confident it will get done.

The project's construction phase will directly create 600 jobs and produce an estimated \$276 million, before ongoing operations directly employ around 150 people annually, help create hundreds of more jobs and generate more than \$100 million.

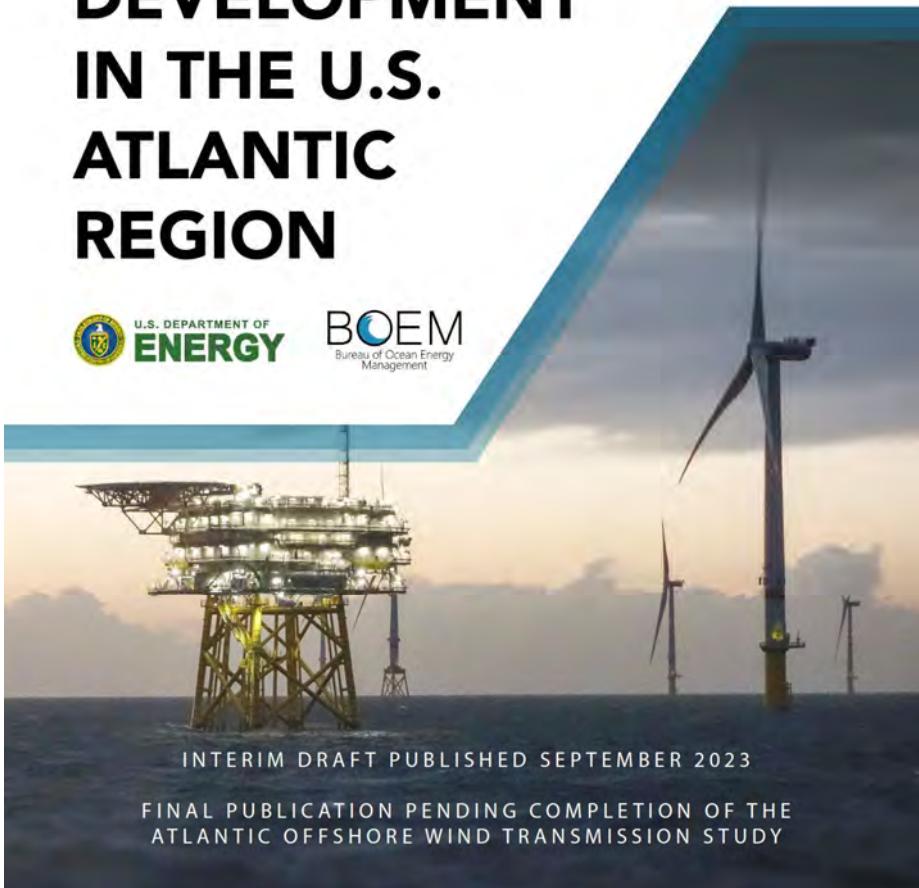


AN ACTION PLAN FOR

OFFSHORE WIND TRANSMISSION DEVELOPMENT IN THE U.S. ATLANTIC REGION



BOEM
Bureau of Ocean Energy Management



INTERIM DRAFT PUBLISHED SEPTEMBER 2023

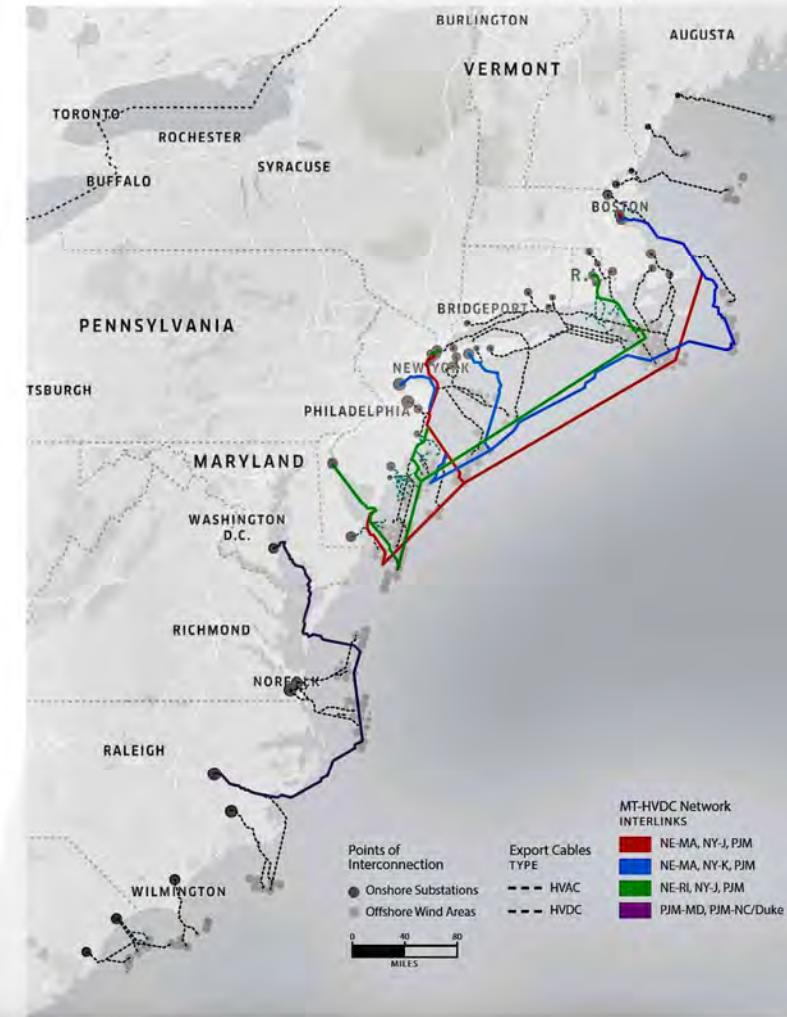
FINAL PUBLICATION PENDING COMPLETION OF THE
ATLANTIC OFFSHORE WIND TRANSMISSION STUDY

THE OFFSHORE TOPOLOGY PROPOSAL

The AOSWTS final report is scheduled to be published at the end of 2023; however, preliminary analysis from the ongoing study found that connecting large volumes of offshore wind along the Atlantic coast over the next several decades will provide a unique opportunity to use interregional transmission links to reduce electricity production costs and bolster reliability and resilience onshore. The AOSWTS has also incorporated environmental, ocean co-use, and other siting considerations by implementing a path routing methodology.

Although radial generator lead lines and radial shared lines will be essential for the deployment of offshore wind along the Atlantic, DOE and BOEM are recommending further reliability studies on four interregional high-voltage direct current (HVDC) interlinks (Figure 1). The interregional meshed interlinks analyzed in the AOSWTS have been designed to take advantage of opportunities to maximize production cost savings while attempting to minimize overall cable distances (relative to other potential configurations of interlinks).

Figure 1. DOE- and BOEM-recommended offshore wind transmission topology scenario, informed by the Convening Workshops and preliminary AOSWTS analysis. The map represents a hypothetical transmission build-out for the 2050 Low Carbon Scenario as currently analyzed in the AOSWTS, which is ongoing.





THE BUSINESS NETWORK FOR OFFSHORE WIND

BUILDING A NATIONAL NETWORK OF OFFSHORE WIND PORTS

A \$36B Plan for Domestic
Clean Energy Infrastructure

Authored By:

Brian Sabina, Clean Energy Terminals
Business Network for Offshore Wind Ports Working Group

SEPTEMBER 2023

Green Upheaval

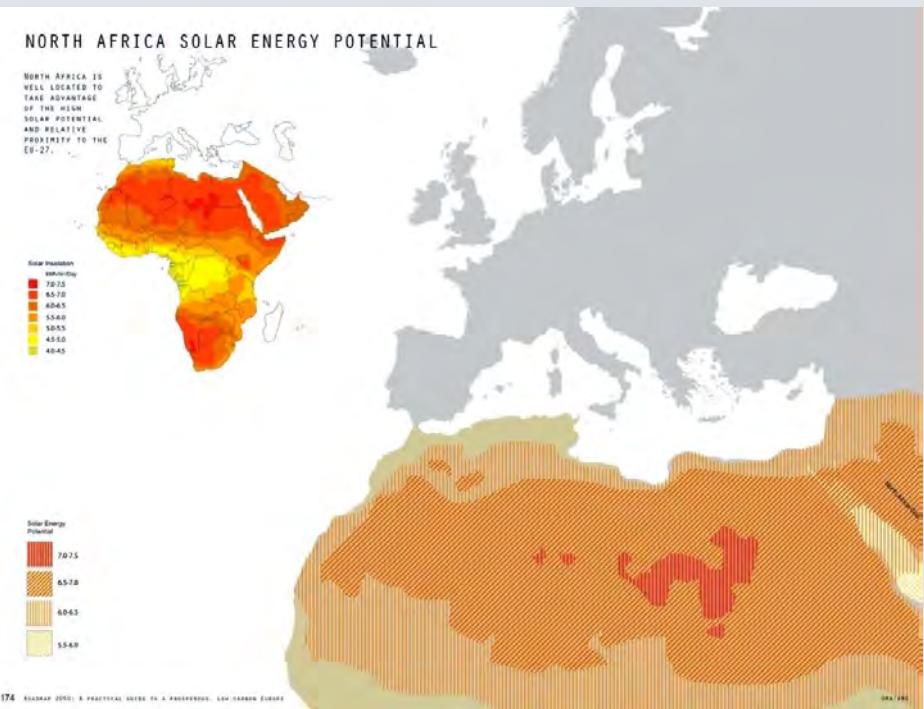
The New Geopolitics of Energy

By Jason Bordoff and Meghan L. O'Sullivan January/February 2022



Mining for coltan in North Kivu, Congo, September 2013

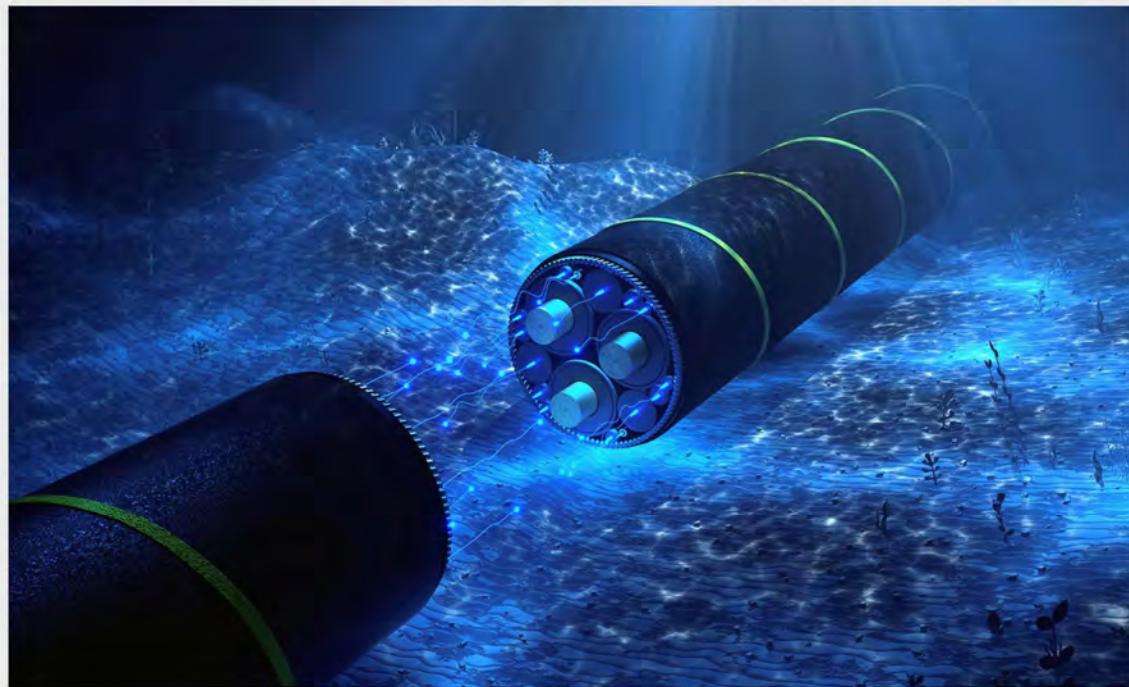
Marco Gualazzini / Contrasto / Redux



IEEE Spectrum 3,800-km Cable Offers Glimpse of a Global Power Grid

Grid › Xlinks hopes to send solar and wind power from Morocco to Britain by 2029

BY RAHUL RAO | 30 NOV 2023 | 5 MIN READ | □



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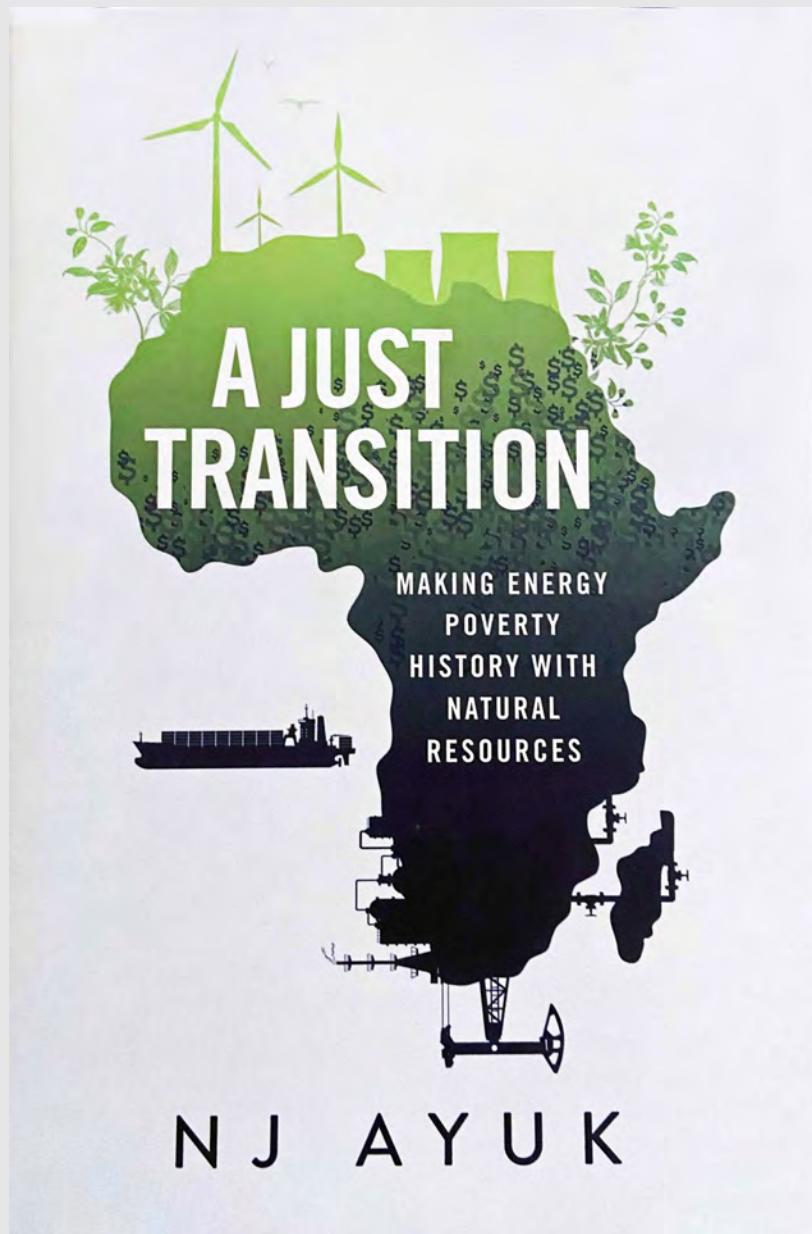


Egypt to Build Undersea Interconnection Cable with Europe



■ November 24, 2023





Sierra

THE MAGAZINE OF THE SIERRA CLUB

CLIMATE &

Norway Greenlights World's First Commercial Deep-Sea Mining Project

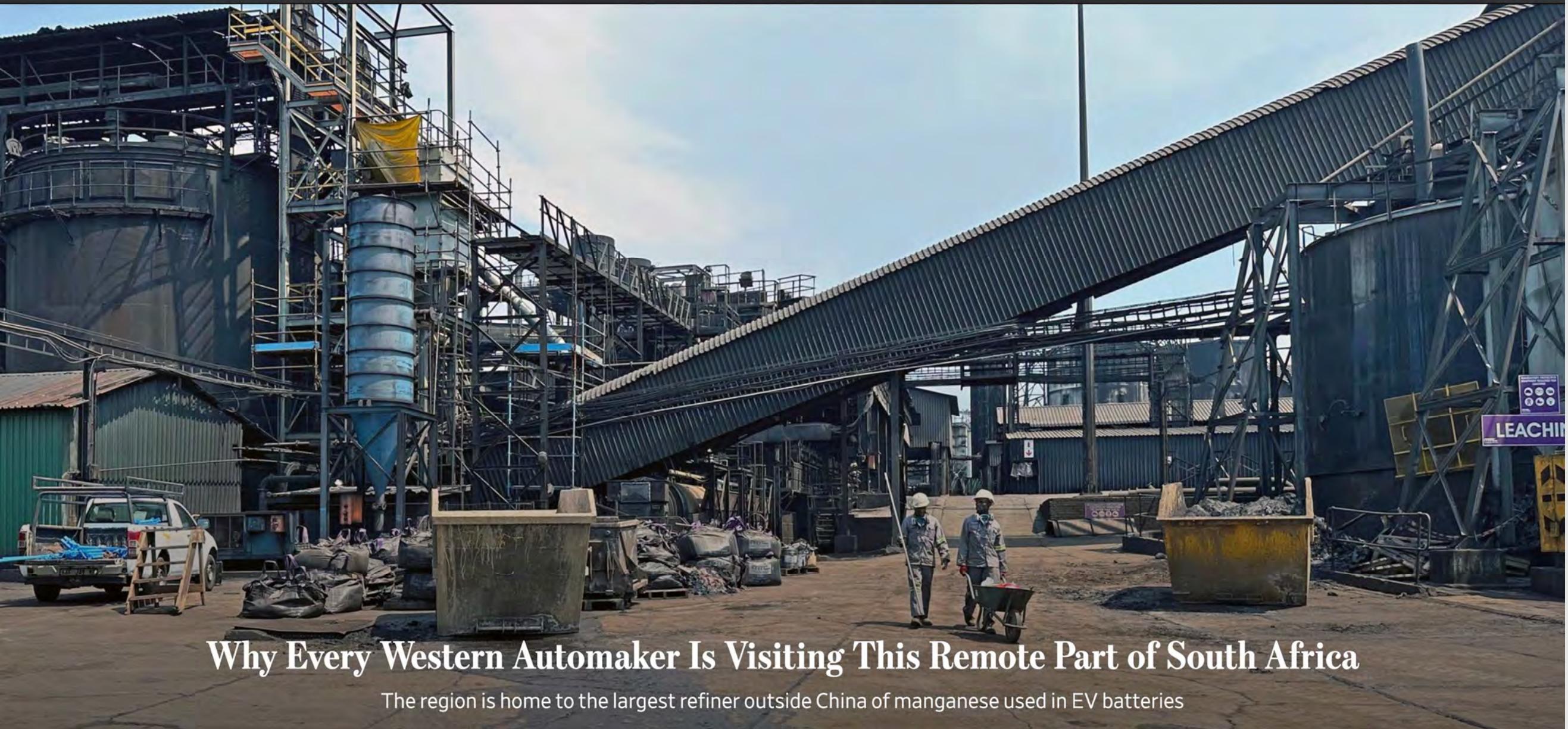
Here's what the new project means for the US and other countries beyond the Nordic region

By Elyse Hauser

December 16, 2023



A supply ship at the Edvard Grieg oil field in the North Sea. | Photo by Hakon Mosvold Larsen, NTB scanpix via AP



Why Every Western Automaker Is Visiting This Remote Part of South Africa

The region is home to the largest refiner outside China of manganese used in EV batteries



Coal fields in Jharkhand, India. February 2010.

In the struggle to combat climate change, the world is fighting the last war. Since the dawn of the Industrial Revolution, countries have released one and a half trillion metric tons of carbon dioxide into the atmosphere. The largest cumulative emissions have come from the United States, European countries, China, and Russia, in that order. The top emitting countries of the future could come largely from the developing world—countries such as Brazil, India, Indonesia, and South Africa, which face the herculean task of bringing millions out of poverty while simultaneously adapting to the harsh realities of climate change.

The Coming Carbon Tsunami | By [Kelly Sims Gallagher](#) | Foreign Affairs | January/February 2022





The 92 regenerative elements are
Nature's minimum
inventory/maximum diversity toolkit



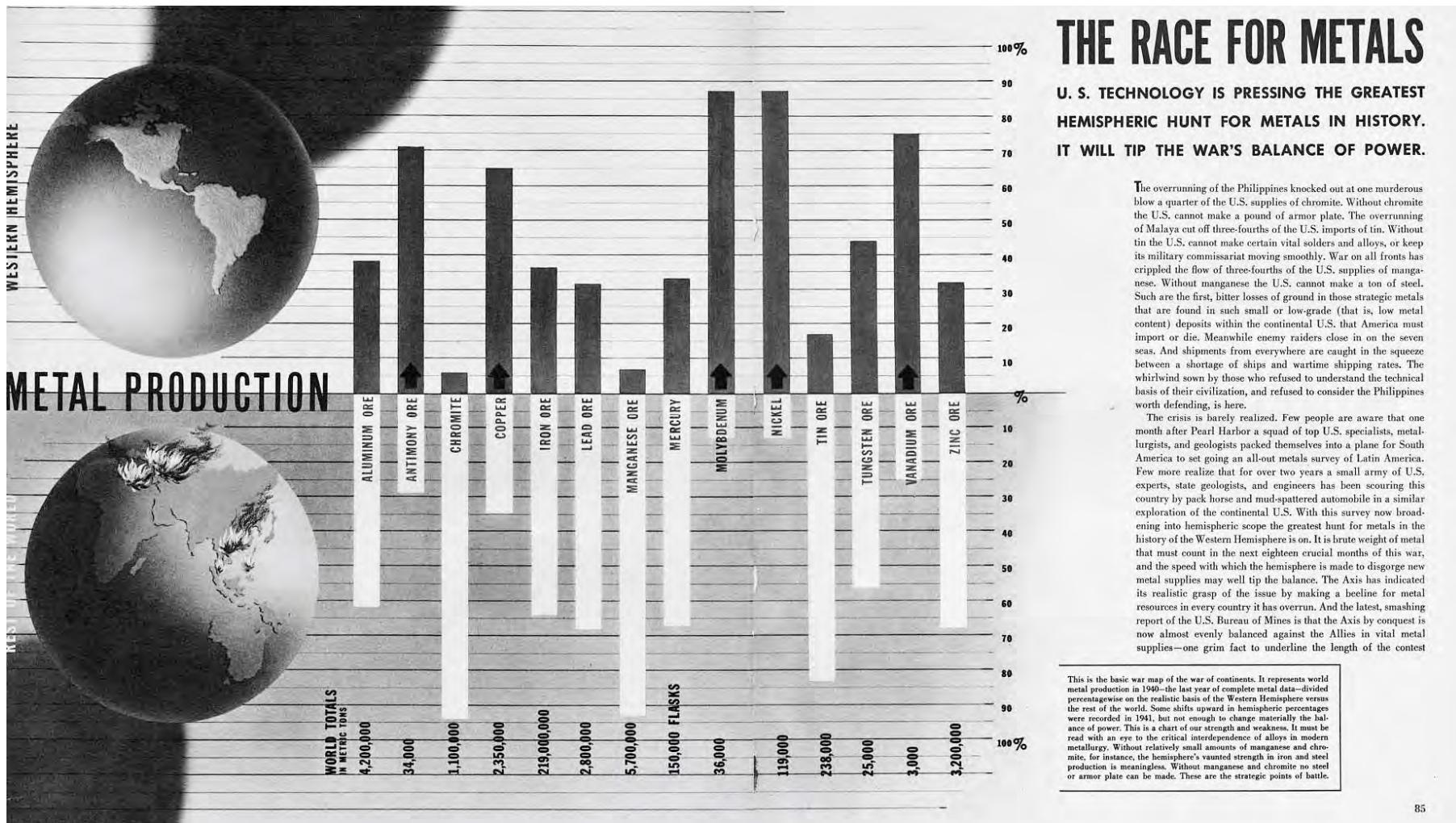
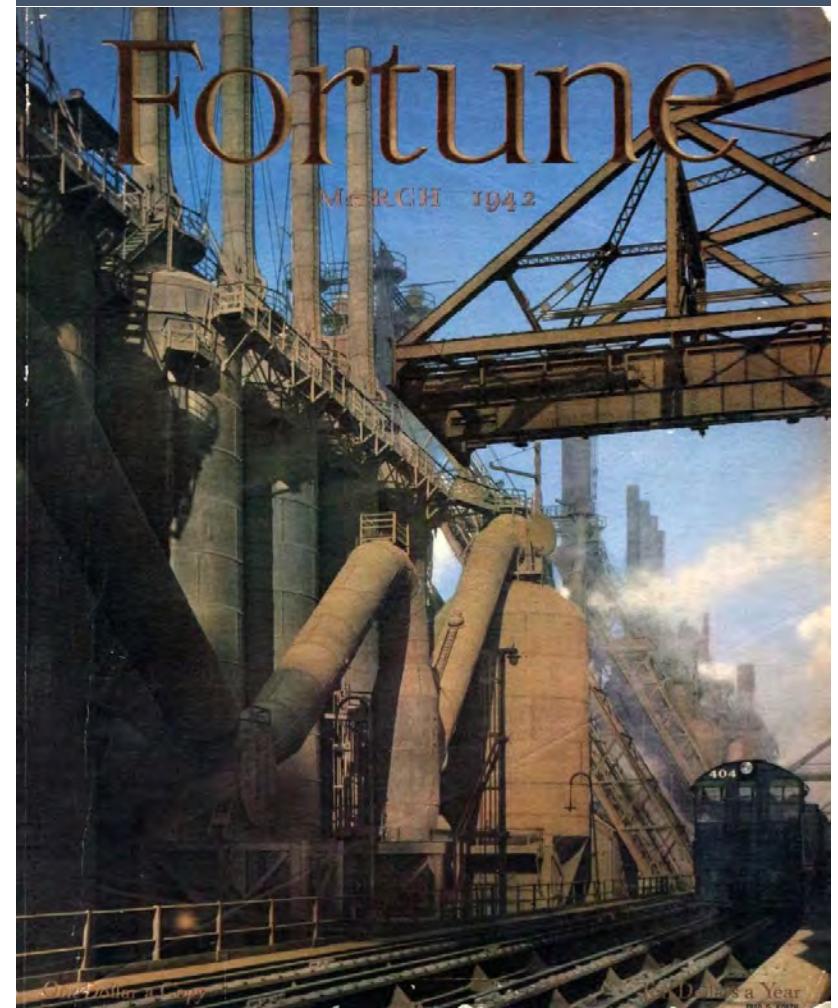
Evolving trends and needs can drive
technological innovation



New technologies may create new
resource demands

Comprehensive Anticipatory Design Science

Fortune | March 1942



"History Teaches, But Has No Pupils"
Antonio Gramsci

Energy Policy 117 (2018) 66–74

Contents lists available at ScienceDirect

Energy Policy

journal homepage: www.elsevier.com/locate/enpol



Humanizing sociotechnical transitions through energy justice: An ethical framework for global transformative change

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Energy Research & Social Science 100 (2023) 103096

Contents lists available at ScienceDirect

Energy Research & Social Science

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Original research article

The dark side of the energy transition: Extractivist violence, energy (in) justice and lithium mining in Portugal

Joana Canelas^a, António Carvalho

Centre for Social Studies of the University of Coimbra, Praça Dom Dinis 77, 3000-104 Coimbra, Portugal

Energy Policy 119 (2018) 1–7

Contents lists available at ScienceDirect

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Just transition: Integrating climate, energy and environmental justice

Darren McCauley^{a,*}, Raphael Heffron^b

^a St Andrews Sustainability Institute, School of Geography and Sustainable Development, University of St Andrews, United Kingdom
^b Global Energy Law and Sustainability, Centre for Energy, Petroleum, Mineral Law and Policy, University of Dundee, United Kingdom

Energy Research & Social Science 68 (2020) 101668

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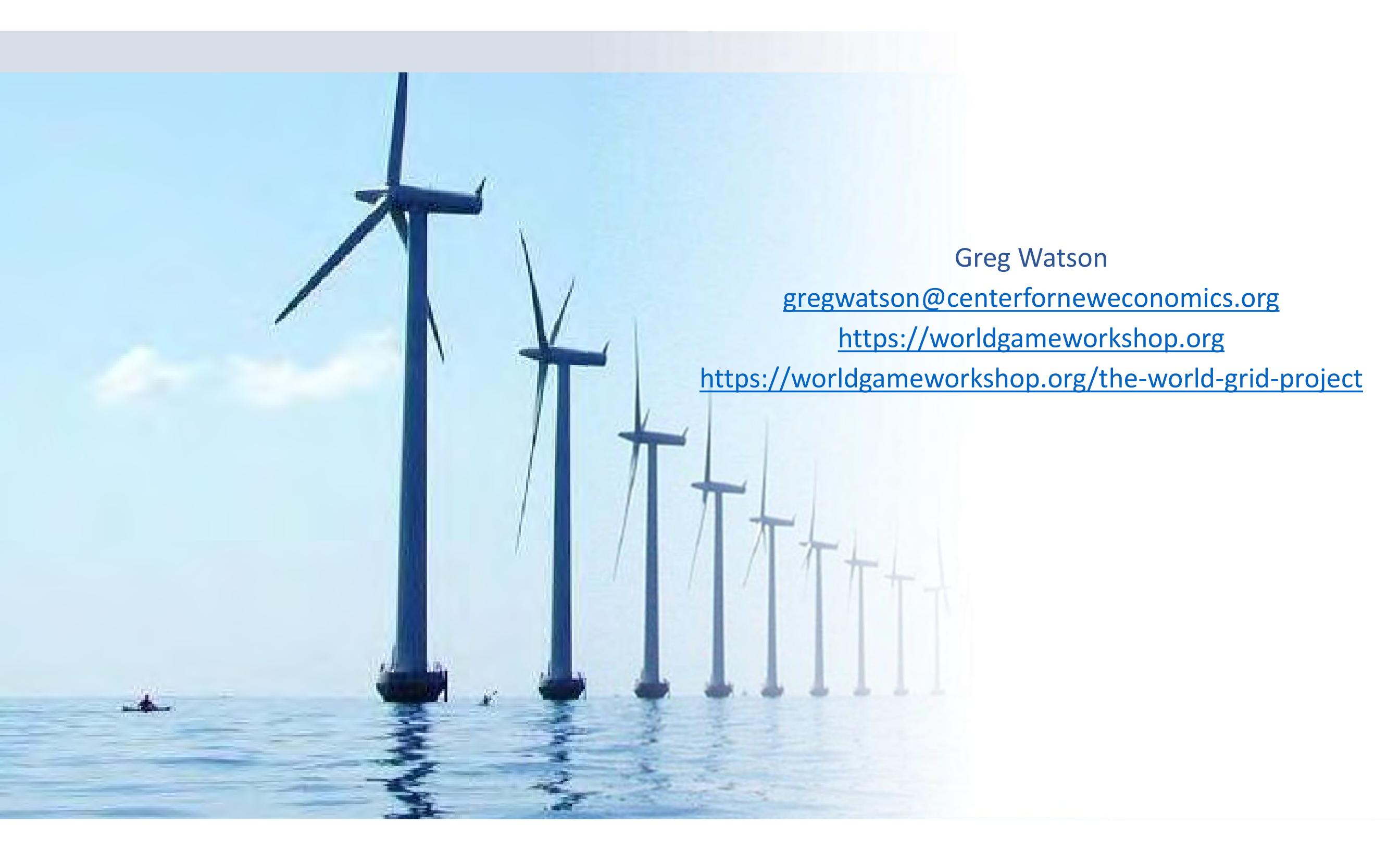


Perspective

Just transitions: Histories and futures in a post-COVID world

Matthew S. Henry^a, Morgan D. Bazilian^{b,*}, Chris Markuson^c

^a The University of Wyoming, WY, USA
^b The Colorado School of Mines, CO, USA
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<https://worldgameworkshop.org>

<https://worldgameworkshop.org/the-world-grid-project>