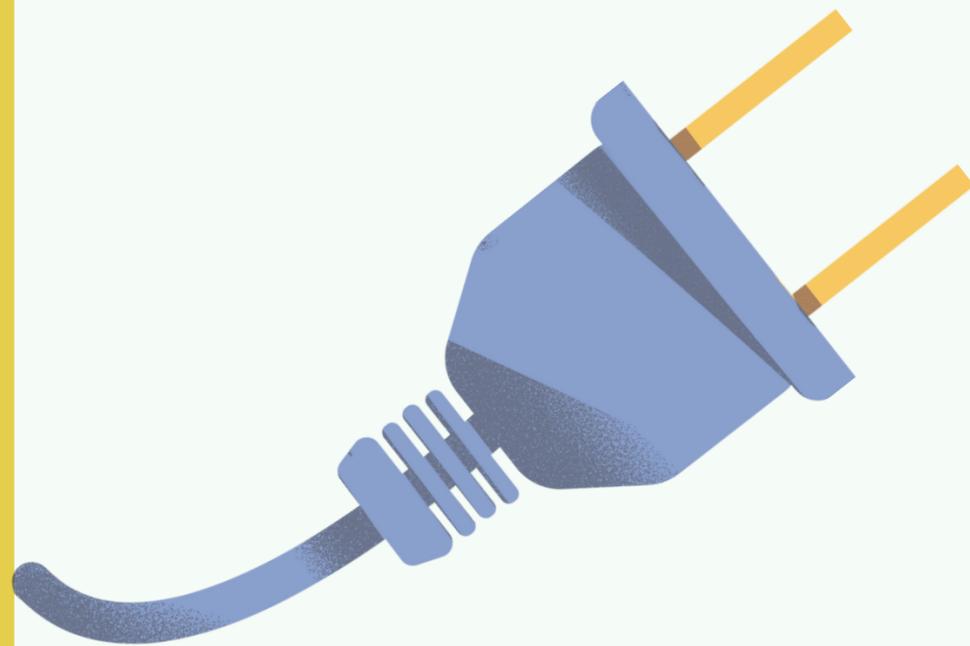


TRANSPORTATION ELECTRIFICATION



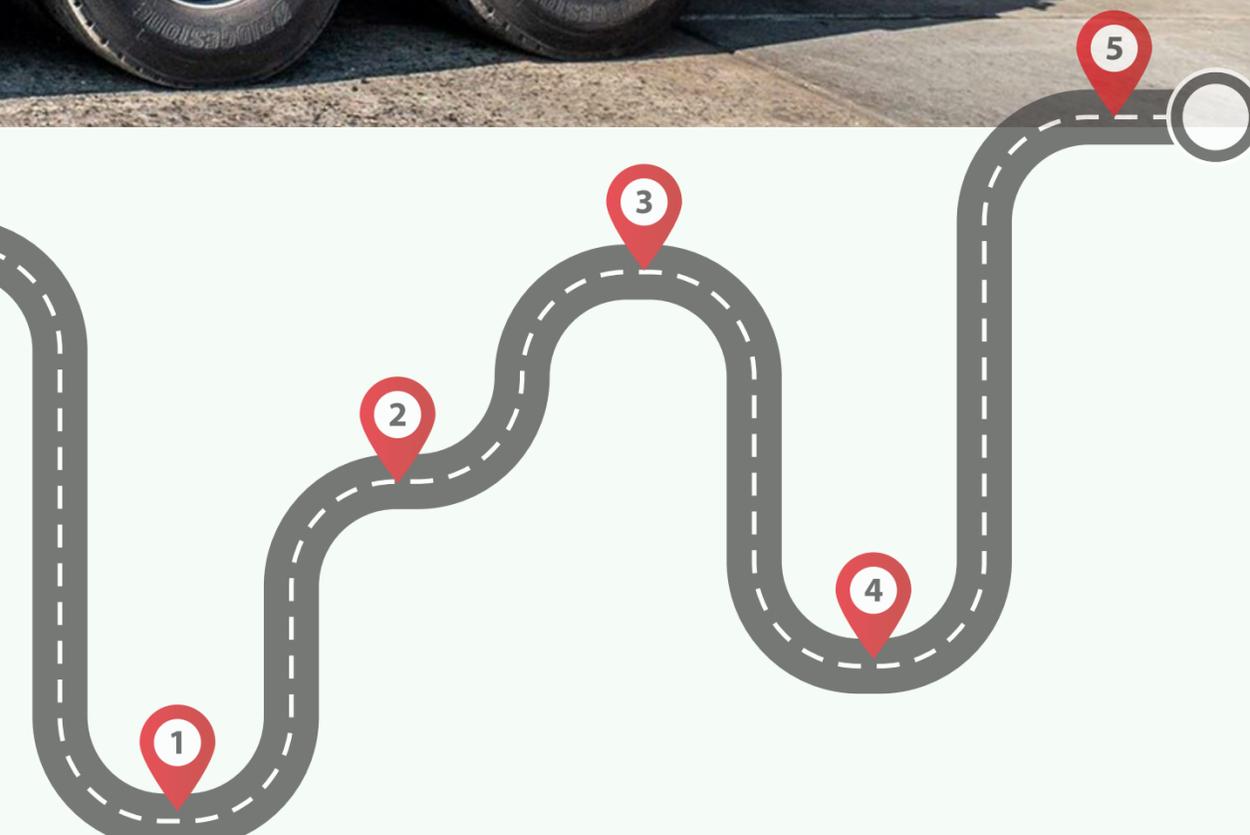
RIGHT^{TO}
ZERO ⚡

 **EARTHJUSTICE**



THE ROADMAP TO ZERO

- Earthjustice's Right to Zero Campaign
- Next steps in electrifying trucks
- Electrifying off-road freight sources
- Recognizing false solutions



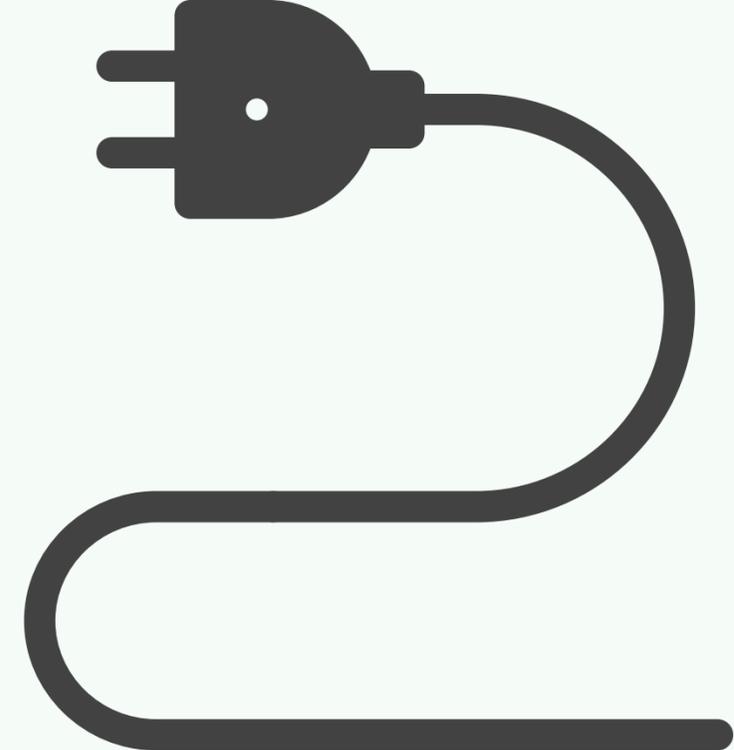


EARTHJUSTICE'S RIGHT TO ZERO CAMPAIGN

Power everything with
100% clean energy

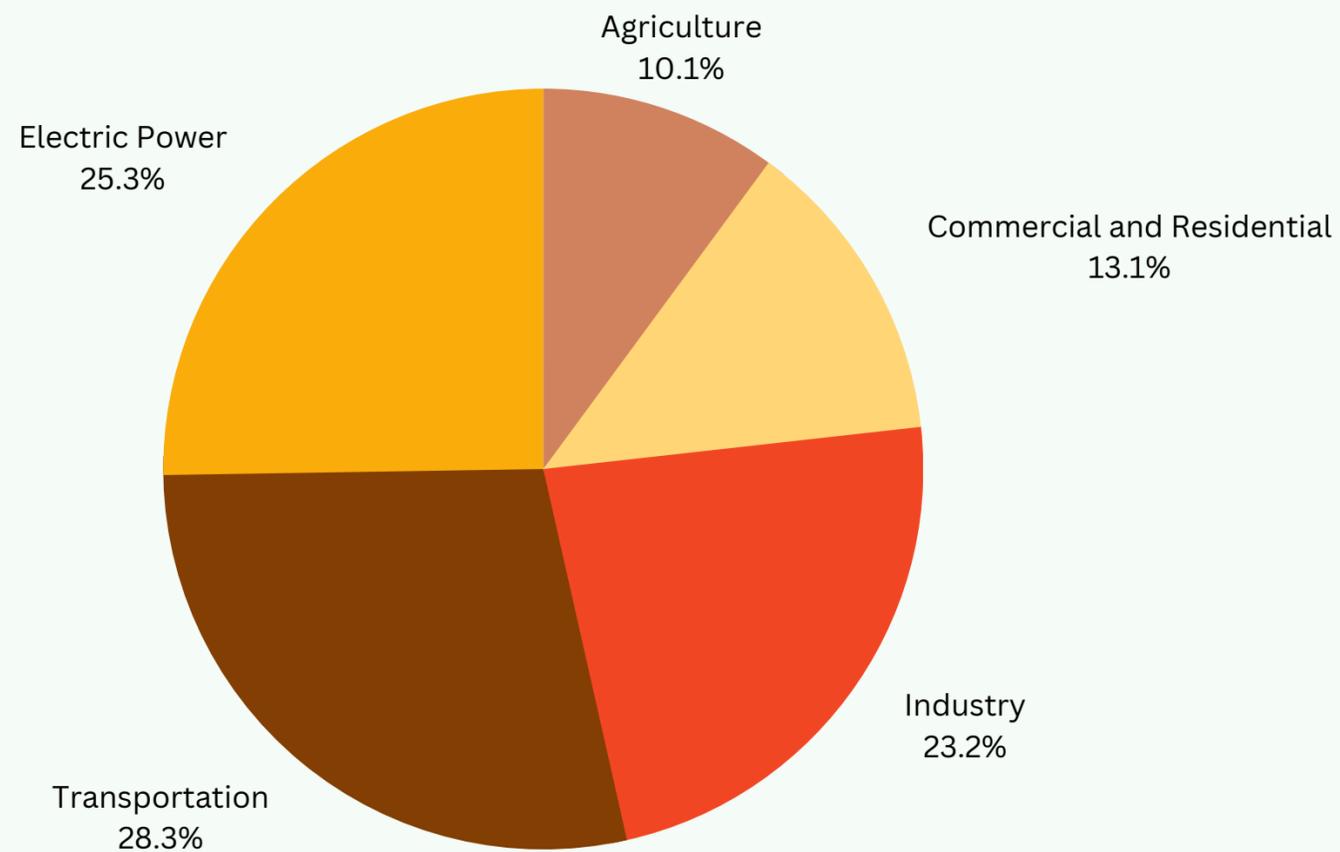


RETHINK THE SOLUTION

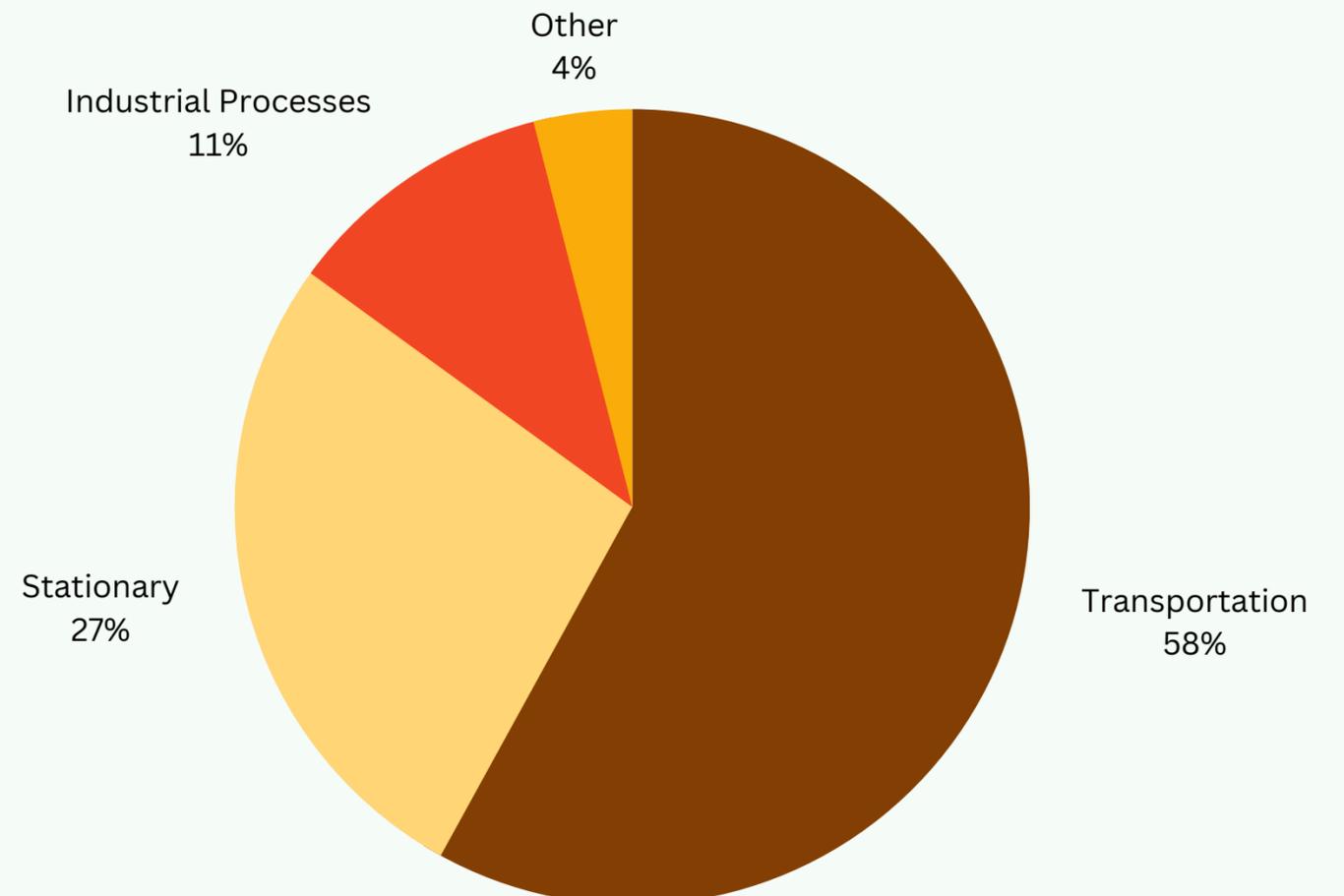


Climate + Health = End Combustion

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2021



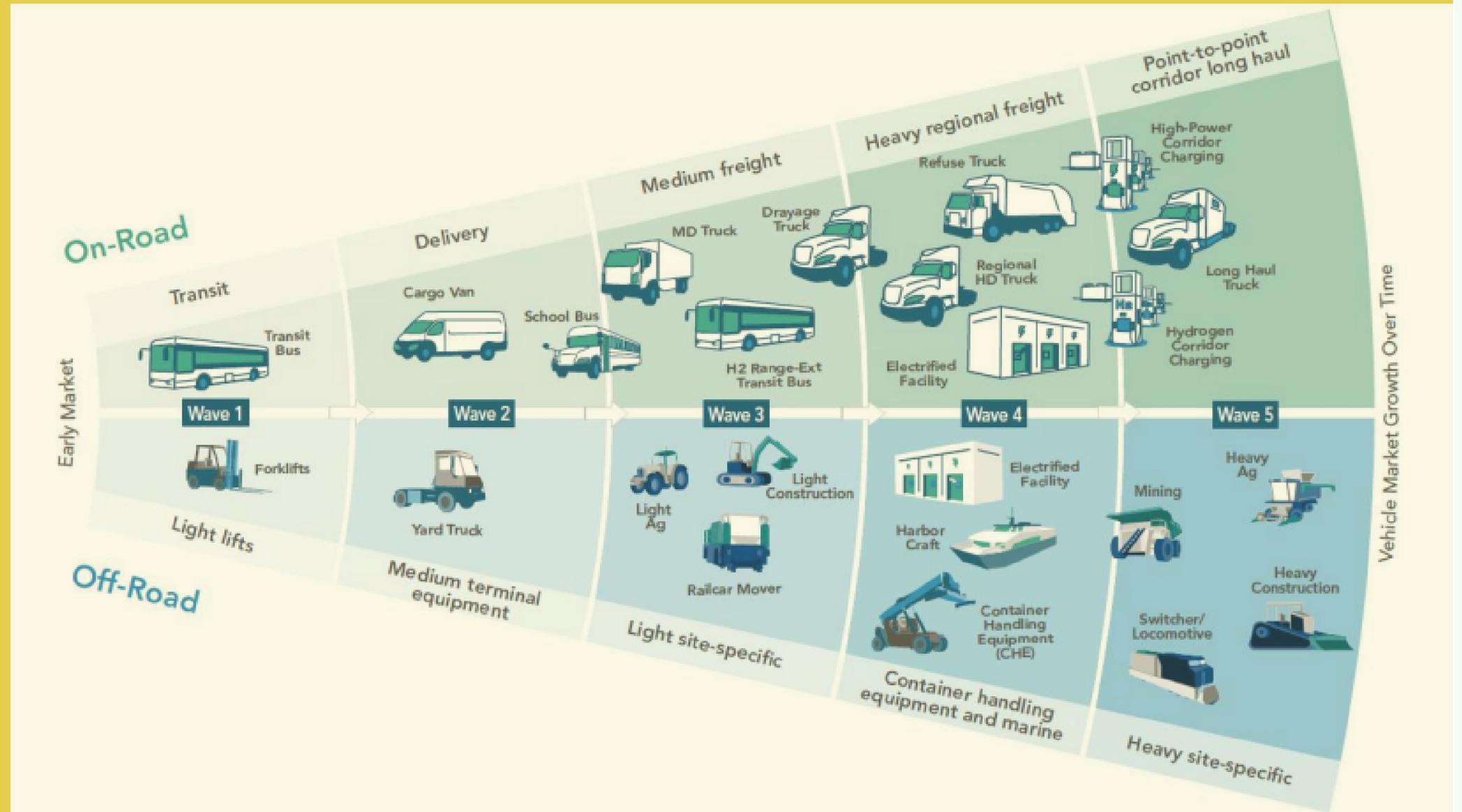
Total National NOX Emissions By Sector, 2018



Source: EPA's Sources of Greenhouse Gas Emissions Report, U.S. EPA, National Emission Inventory Air Pollutant Emission

RETHINK PROGRESS

$$Truck = \frac{d(Bus)}{dx}$$



Market Progress Over Time

Similar drivetrain and component sizing can scale to early near applications

Expanded supply chain capabilities and price reductions enable additional applications

Steadily increasing volumes and infrastructure strengthen business case and performance confidence

NEXT STEPS IN ELECTRIFYING EVERYTHING



Provide clear signals that the goal =
zero-emissions



Support both vehicles and the infrastructure

ON ROAD VEHICLES

Transforming trucks
into zero-emission
vehicles



RAPID TRUCK ELECTRIFICATION TO BUILD BACK BETTER

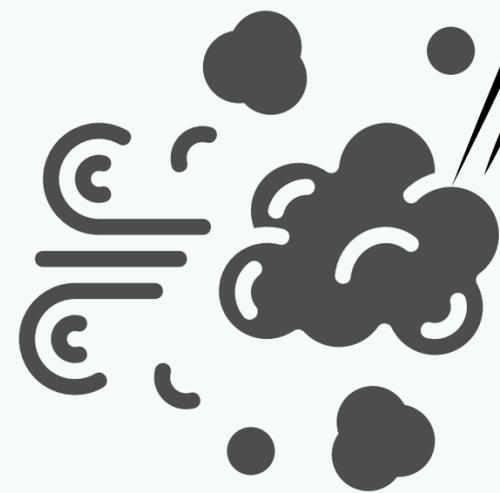
Accelerating the shift to electric trucks is one of the greatest near-term opportunities to:

- Save lives lost to diesel air pollution
- Quickly slash carbon emissions
- Address the major sources of racial disparity
- Create good manufacturing jobs
- Lower goods movement costs for consumers



DIESEL TRUCKS

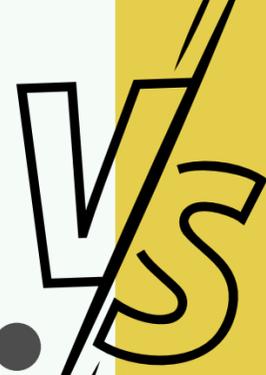
LARGEST SOURCE OF AIR POLLUTION DISPARITY



FASTEST GROWING SOURCE OF CARBON POLLUTION

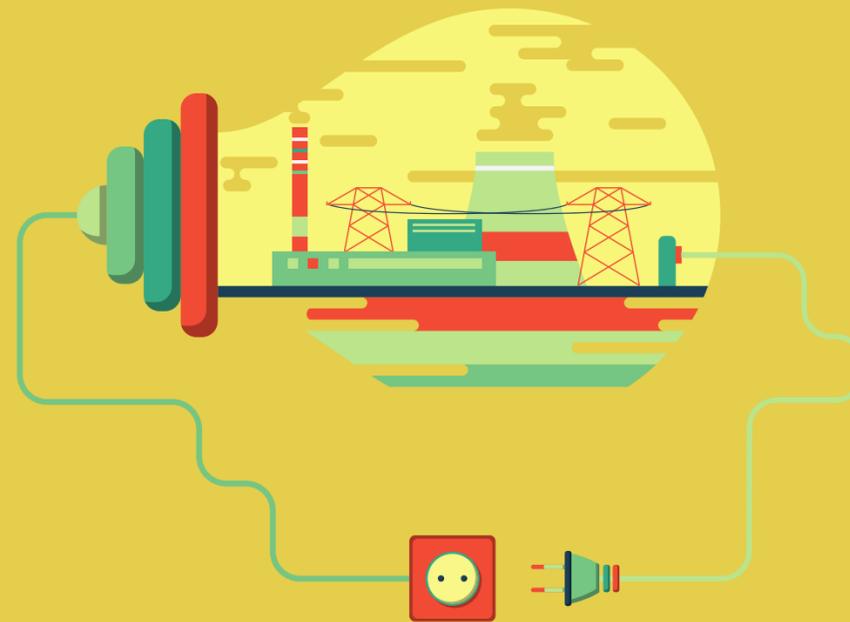


DIESEL AND GROUND-LEVEL OZONE HARM ECOSYSTEMS, CROPS, AND INCREASE CANCER AND ASTHMA RISK



ELECTRIC TRUCKS

CENTERPIECE IN THE BATTLE AGAINST AIR AND CLIMATE POLLUTION



RAPIDLY ERODES INEFFICIENT SOURCE OF OIL DEMAND

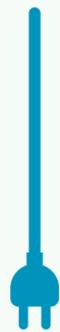
ELECTRIFYING 1% OF TRUCK FLEET ACHIEVES A 25% REDUCTION IN NOX EMISSIONS



CONDITIONS FOR RAPID ELECTRIFICATION IN PLACE

TWO-THIRDS OF TRUCKS AND BUSES CAN BE ELECTRIFIED WITH TODAY'S TECHNOLOGY

OVER 140 MODELS AVAILABLE FROM OVER 40 MANUFACTURERS



NEW MODELS WITH 300-500 MILE RANGE

Electric Trucks Reach a Tipping Point



New analysis from RMI shows that 65% of medium-duty and 49% of heavy-duty trucks are electrifiable today

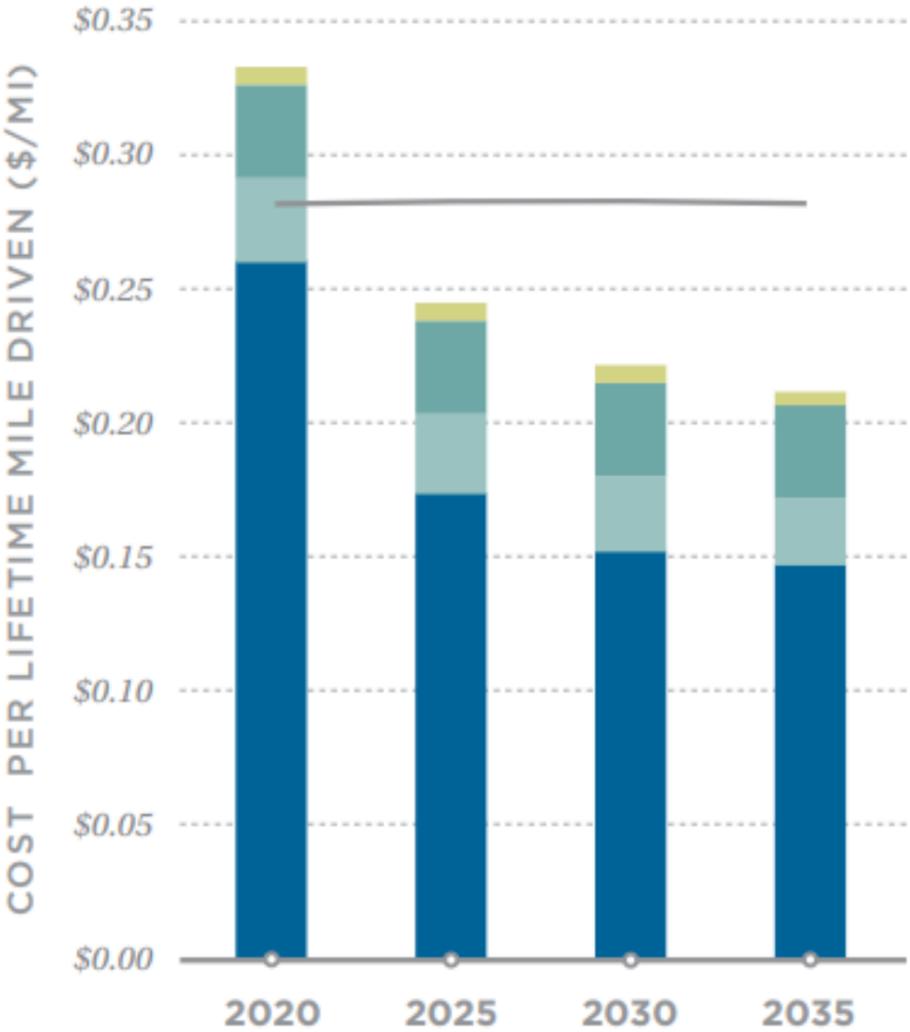
CONDITIONS FOR RAPID ELECTRIFICATION IN PLACE

ELECTRIC TRUCKS SAVE DRIVERS MONEY...

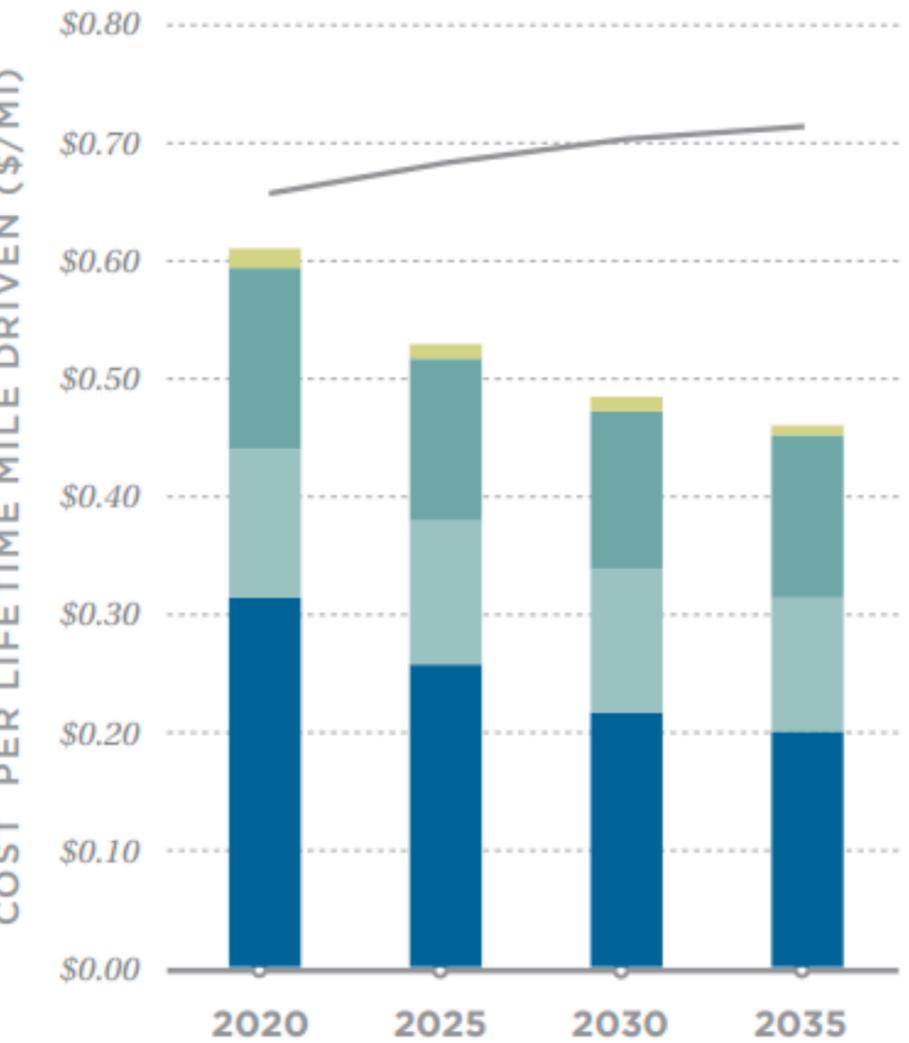


...EVEN FASTER THAN ELECTRIC CARS

LDV (PASSENGER CAR)
TOTAL COST OF OWNERSHIP



HDT
TOTAL COST OF OWNERSHIP



CONDITIONS FOR RAPID ELECTRIFICATION IN PLACE

PROGRESS ON POLICY, TECHNOLOGY, AND MARKET DEVELOPMENT ARE GAINING MOMENTUM

10 STATES ADOPTED
ADVANCED CLEAN TRUCK RULE



UNPRECEDENTED SUPPORT
FROM IRA/IIJA FOR FLEETS &
CHARGING INFRASTRUCTURE



Buckle up: Climate law to turbocharge sales of electric trucks and buses

The Inflation Reduction Act's tax credits, grants and loans could accelerate commercial EV adoption and boost U.S. manufacturing.

17 August 2022

NEXT STEPS IN TRUCK ELECTRIFICATION



Urge EPA to significantly strengthen truck emissions standards in the Phase 3 GHG rule



Lead State delegations to press for adoption of the suite of ZE measures: ACF, ACT, ICT.



Target IIJA/BIL funding for high-impact charging infrastructure and fleet transition projects in communities on frontlines of freight pollution

ELECTRIFYING USPS

Delivery trucks are prime for
electrification.



CAMPAIGN TIMELINE

Feb. 2021

USPS awards contract to Oshkosh
Defense before NEPA review

USPS issues draft environmental
impact statement choosing the 90%
ICE/10% EV alternative

Aug. 2021

Jan. 2022

USPS issues final environmental
impact statement, committing to
the 90%ICE/10% EV alternative

EPA and CEQ send letters to USPS
critiquing analysis. USPS issues
record of decision.

Feb. 2022

Mar. 2022

House Oversight Committee ask
USPS Inspector General to
investigate whether the Postal
Service complied NEPA

House Oversight Committee hearing

April 2022



ECONOMY

16 states, D.C., climate activists sue USPS to block truck purchase

The lawsuits contend the agency has underestimated the environmental impact of its 'next-generation' vehicles, which get 8.6 mpg

By [Jacob Bogage](#)

Updated April 28, 2022 at 11:04 a.m. EDT | Published April 28, 2022 at 9:00 a.m. EDT



GIVE THE TIMES

States Sue Postal Service Over New Gas-Powered Mail Trucks

Sixteen states argue the Postal Service failed to properly vet clean alternatives to polluting trucks that could get as little as 8.6 miles to the gallon.

Give this article | 46 | Read in app



The Postal Service owns more than 231,000 vehicles, one of the largest civilian fleets in the world. Desiree Rios for The New York Times

DONATE

ENVIRONMENT APRIL 28, 2022

A Wave of Lawsuits Aims to Halt Louis DeJoy's Gas-Guzzling Postal Fleet

USPS is "doubling down on outdated technologies that are bad for our environment and bad for our communities."

ABIGAIL WEINBERG News Writer Bio | Follow



These bad boys have been on the road since 1987, guzzling one gallon of gas every 8.2 miles, on average. Mark Hertzberg/Zuma

Sonic boom over DC Close call in Taiwan Strait Raci

16 states that want to electrify USPS fleet file lawsuits

By DAVID SHARP April 28, 2022



APRIL 2022: WE SUED USPS

Earthjustice representing CleanAirNow and Sierra Club

ECONOMY

USPS will make 40% of its new trucks electric, up from 10%

Postmaster General Louis DeJoy's new push for EVs brings the agency closer to conforming with President Biden's far-reaching climate goals



By [Jacob Bogage](#)

Updated July 20, 2022 at 5:09 p.m. EDT | Published July 20, 2022 at 12:31 p.m. EDT



This piece is part of a series. [Read more.](#)

US climate law will help electrify more USPS mail trucks

The Inflation Reduction Act includes \$3 billion to convert the nation's aging mail truck fleet to cleaner electric vehicles.

12 August 2022



(Smith Collection/Gado/Getty Images)

SUMMER 2022:

USPS increased EVs to 40% in July, and Congress appropriated \$3 billion for an electrified fleet in August.

DECEMBER 2022: USPS ANNOUNCED TRUCKS WILL BE ZERO EMISSIONS WITHIN FIVE YEARS

- Next Generation Delivery Vehicles (left)
 - 45,000 of the initial 60,000 purchased (75%) will be battery electric
 - NGDVs delivered in 2026 will be 100% electric
- Commercial Off the Shelf Vehicles (right)
 - Up to 21,000 will be electric
 - Up to 27,000 trucks will be gas



THE AMERICAN PUBLIC WANTS ELECTRIC VEHICLES

We delivered 30 lbs. of postcards addressed to USPS that read, "I wish this were delivered by an electric mail truck."



NEXT STEPS IN USPS ELECTRIFICATION

1

Contact the agency and express your office's support for 100% electric vehicles before and after the Supplemental EIS is published (expected June 2023)

2

Continue pushing for Congressional oversight to ensure IRA funds are used and environmental justice communities are prioritized in rollout

LOCOMOTIVES

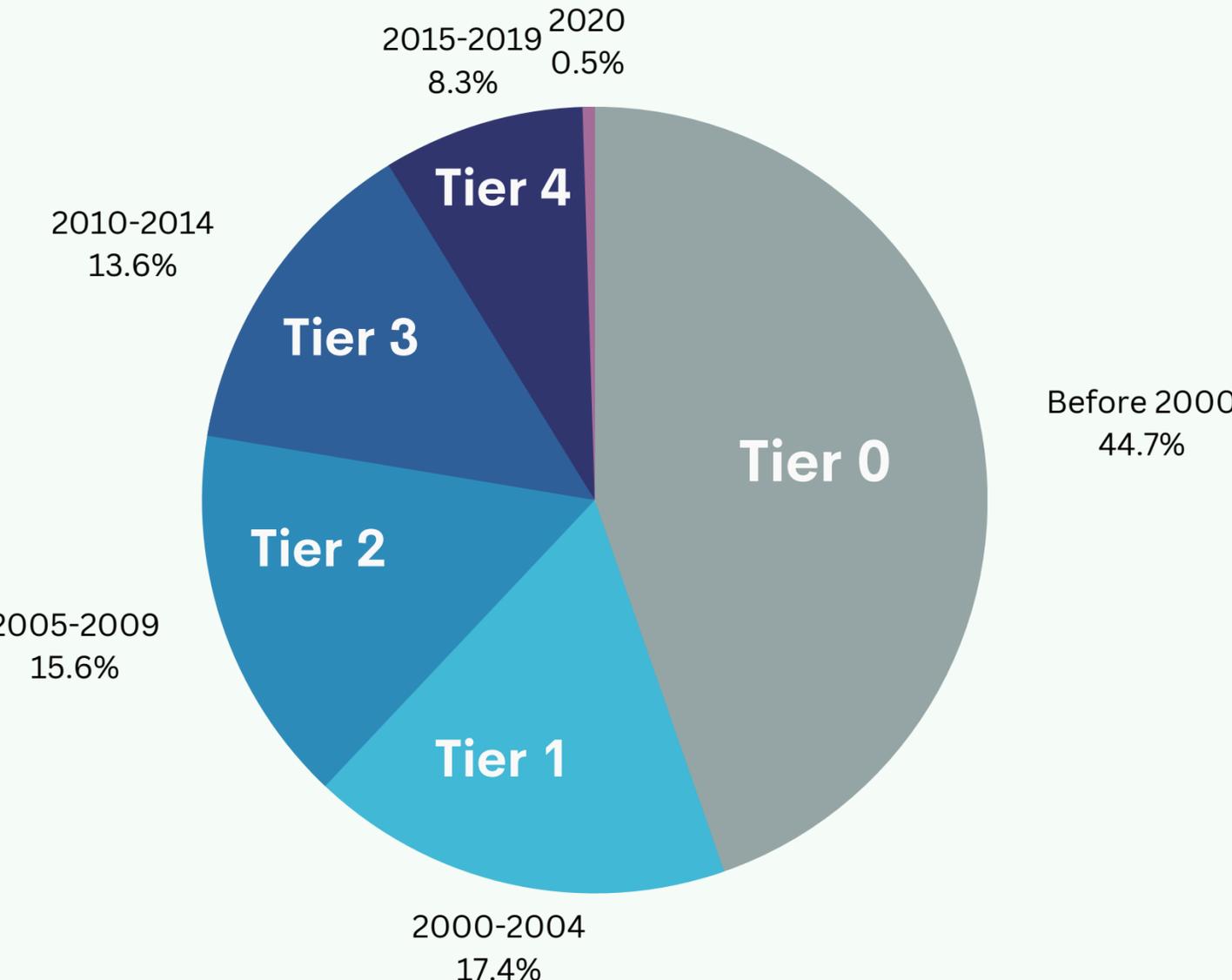
Exposures to one train's emissions are worse than being exposed to 400 trucks' emissions.





**RAILYARD
POLLUTION
IS LETHAL**

2021 CLASS I RAILROAD FLEET BY YEAR BUILT



ELECTRIC LOCOMOTIVES AROUND THE WORLD & GAINING TRACTION

CLIMATE

California becomes the first state to adopt emission rules for trains

5 min listen
0:00 4:46

April 27, 2023 · 5:57 PM ET
By The Associated Press

Battery-powered locomotives continue to gain momentum

By Drayton Blackgrove | April 27, 2023

With continued advancements in technology, battery-powered locomotives might soon become a more practical solution for some railroads.



BATTERY ELECTRIC LOCOMOTIVE TECHNOLOGY

FLXdrive™

CN purchases battery electric freight locomotive from Wabtec to support sustainability goals

Scooter Doll | Nov 4 2021 - 11:05 am PT | 0 Comments

COMING SOON: THE WORLD'S LARGEST BATTERY ELECTRIC VEHICLE

Progress Rail is proud to offer the EMD® Joule series of fully battery-powered locomotives, including the SD70J-BB model boasting more than double the energy storage of competing products.

News Releases
Environment

Union Pacific Railroad to Assemble World's Largest Carrier-Owned Battery-Electric Locomotive Fleet

NEXT STEPS IN LOCOMOTIVE ELECTRIFICATION

-  Urge EPA to adopt a new standard to require all locomotives to be zero emissions by 2045
-  Support DOT and FRA in deploying funds for zero-emission locomotives and railyards
-  Prioritize efforts in frontline communities first
-  Support state and local efforts to reduce locomotive pollution, including asking EPA to authorize California's In-Use Locomotive Rule and align preemption requirements with the Clean Air Act.



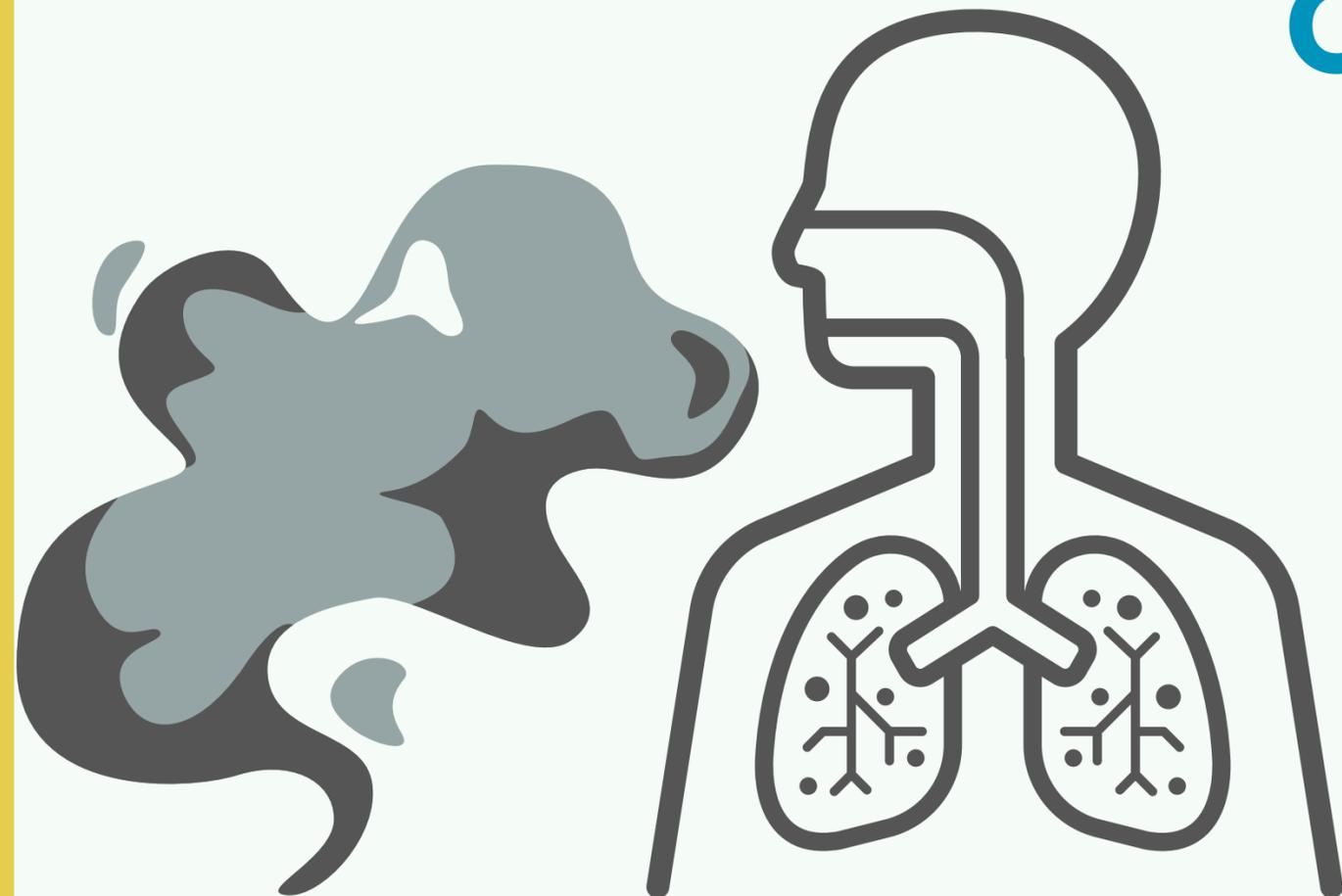
SHIPPING

More than 39 million people in the United States live within three miles of a port

WHAT IS IN DIESEL EXHAUST?

Diesel exhaust contains more than 40 toxic chemicals

HOW DOES DIESEL EXHAUST AFFECT OUR HEALTH?



Short-term effects:

- Irritation to eyes, nose, throat, and lungs
- Cough, headache, and nausea

Long-term effects:

- Lung cancer, bladder cancer,
- Worsens allergies, asthma attacks, and lung illnesses
- Causes heart disease

WHO IS MOST AFFECTED?

Workers:

- Railroad workers
- Truck drivers
- Dock workers
- Other jobs near diesel exhaust



Residents who live near:

- Rails yards
- Ports
- Freeways with diesel truck warehouses



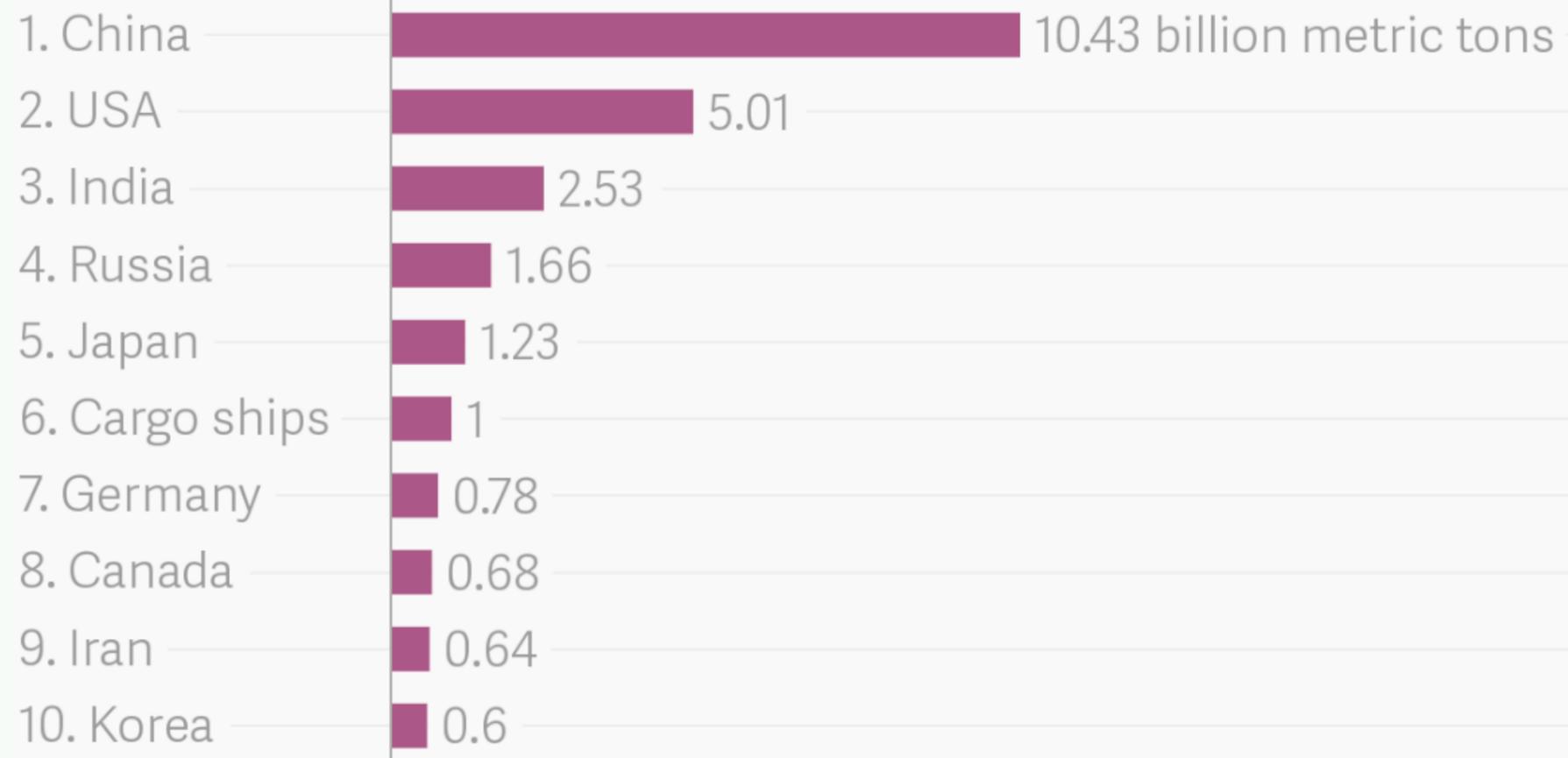
Environmental Justice Concern:

A higher proportion of working poor households and people of color near diesel sources



IF SHIPPING WERE A COUNTRY, IT'D BE THE 6TH-BIGGEST CO2 EMITTER

CO2 emissions*



△ T L △ S | Data: * 2016 data, except shipping, which is an average of 2007-2012 data; UN International Maritime





**SHOREPOWER
KEY TO
REDUCING
SHIP
POLLUTION**

SHIFTING SHIPS TO ALL ELECTRIC



The energy transition is building up a good head of steam with an as:

BOATS

Meet EWolf, The Little Zero-Emission, Diesel-Killing Tugboat Taking On Big Oil

Travel Norway's Fjords on a Quiet Electric Ferry

World's first zero-emissions tugboat ZEETUG proves performance

INFRASURTURE
September 22, 2021, by Sanja Pekic
Turkish tugboat design company Navtek Naval Technologies has proven the design and operational performance of their first ZEETUG, the zero-emission electric tugboat.



Los Angeles Times

CALIFORNIA

New zero-emissions ferry to begin operating in San Francisco

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With high food prices, grocery shopping become a strategy game. Angelenos they get by

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The survival of Elliot Page

FOOD
Amid scrutiny, the James Beard Four awards 5 L.A. restaurants, chefs and

San Port Authority all electric ferry design Haemin Heavy Industries (source: ABB)

South Korea builds first of 140 all-electric ferries

ELECTRIFYING US PORTS COULD DRIVE SHARP CUTS IN POLLUTION

Electrifying the Port of Seattle would lead to a 75% reduction in PM2.5 emissions, over \$27 million in annual public health benefits



Electrifying the Ports of New York & New Jersey would result in a 69% reduction in PM2.5, and \$150 million in public health benefits



ACHIEVING ZERO-EMISSIONS SHIPPING



Regulatory action: Require EPA to set regulations to bring ships to zero emissions by 2040.



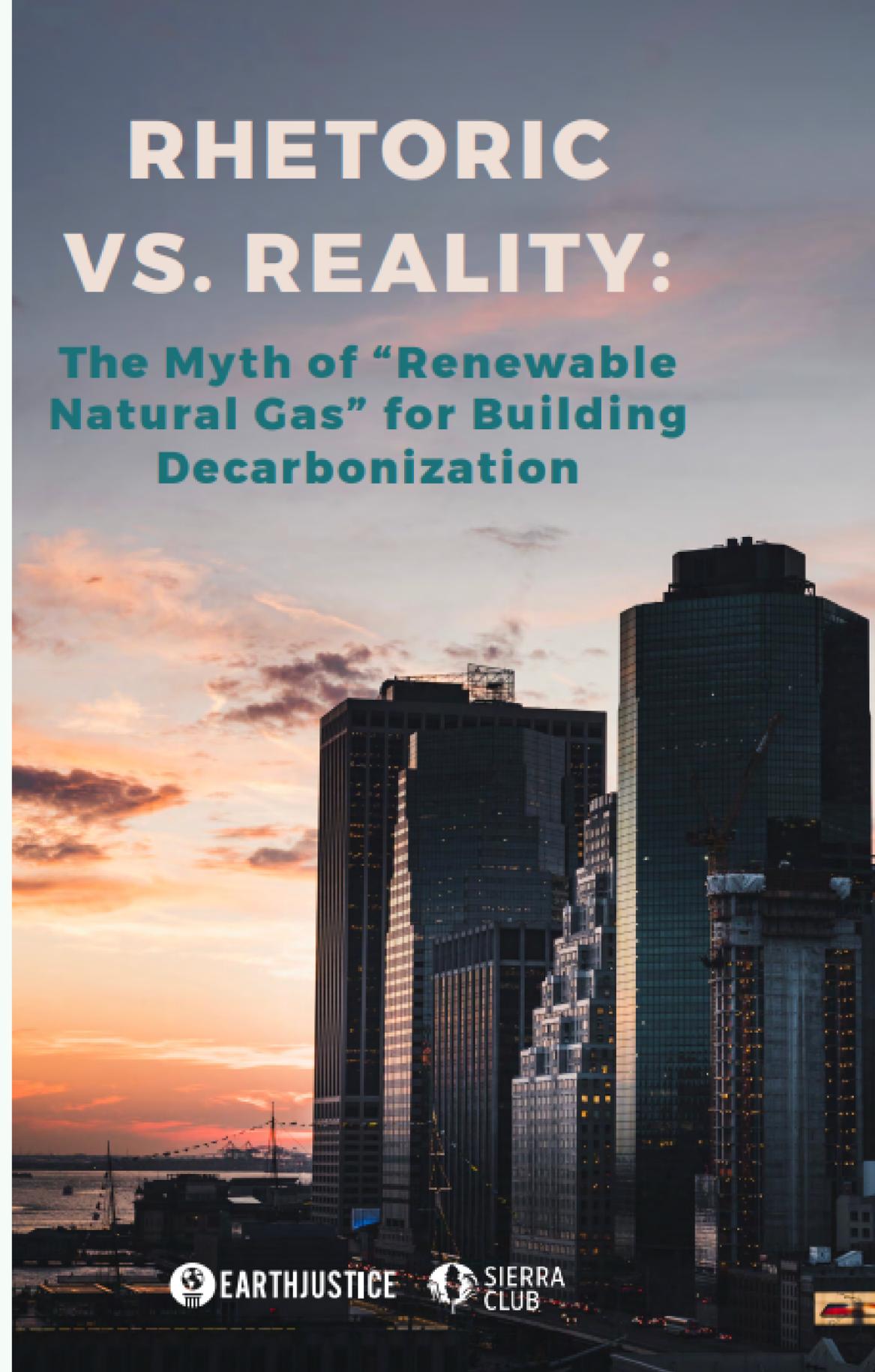
Direct investment & funding to the right solutions: IRA/IIJA funding is key to building infrastructure to support shore power and zero-emission shipping & reducing impacts to portside communities



Support state efforts to reduce shipping impacts:
Urge EPA to grant authorization for California's At-Berth & Commercial Harbor Craft Rules

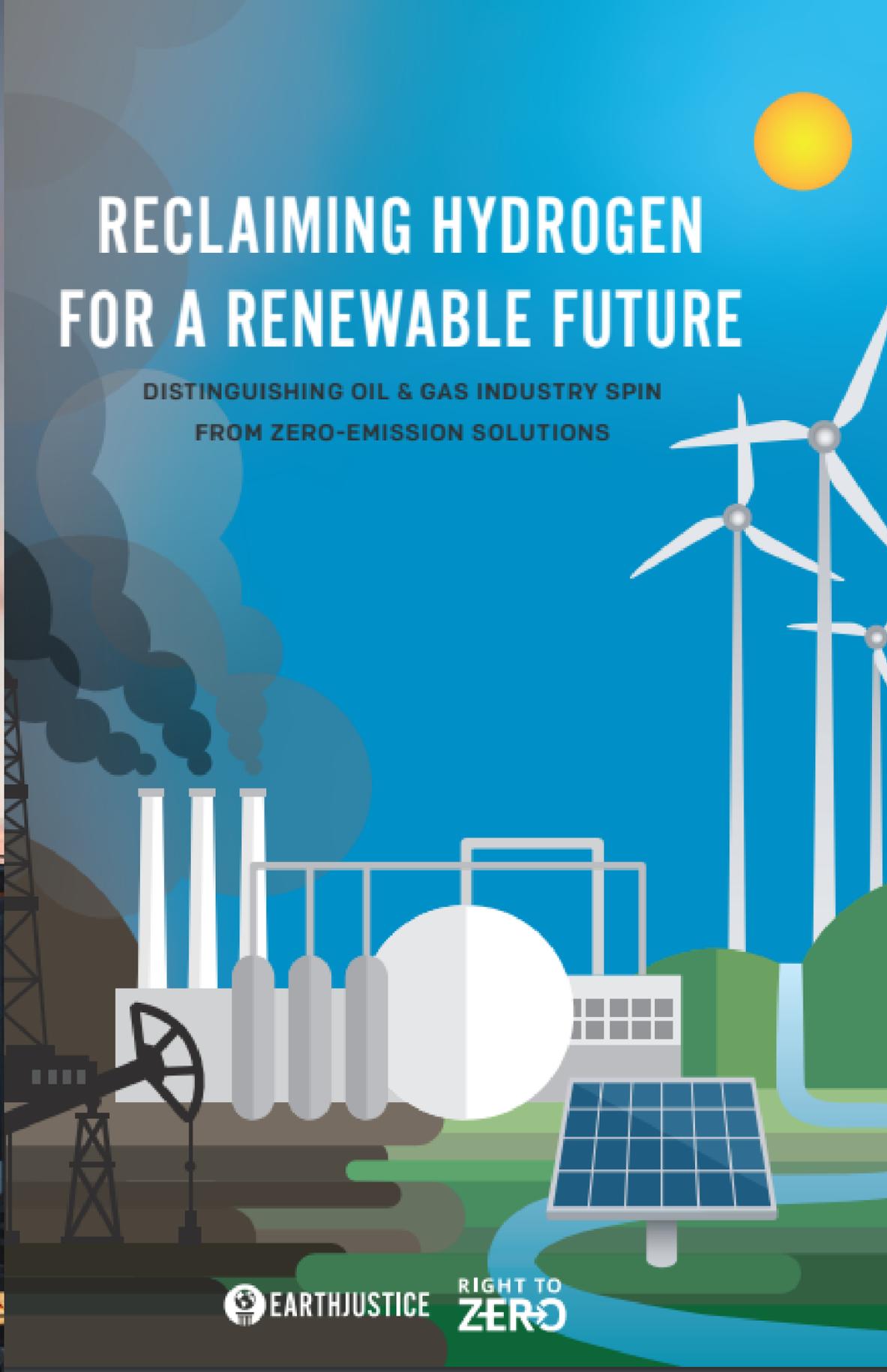
FALSE SOLUTIONS

Polluting Technologies that Risk Delay in the Decisive Decade



RHETORIC VS. REALITY:

The Myth of “Renewable Natural Gas” for Building Decarbonization



RECLAIMING HYDROGEN FOR A RENEWABLE FUTURE

DISTINGUISHING OIL & GAS INDUSTRY SPIN FROM ZERO-EMISSION SOLUTIONS



DISTINGUISHING HYDROGEN HYPE AND REALITY

