University at Buffalo The State University of New York

THIS IS WHERE CHANGE BEGINS

The Business of Advancing Climate Action

OCTOBER 26, 2023

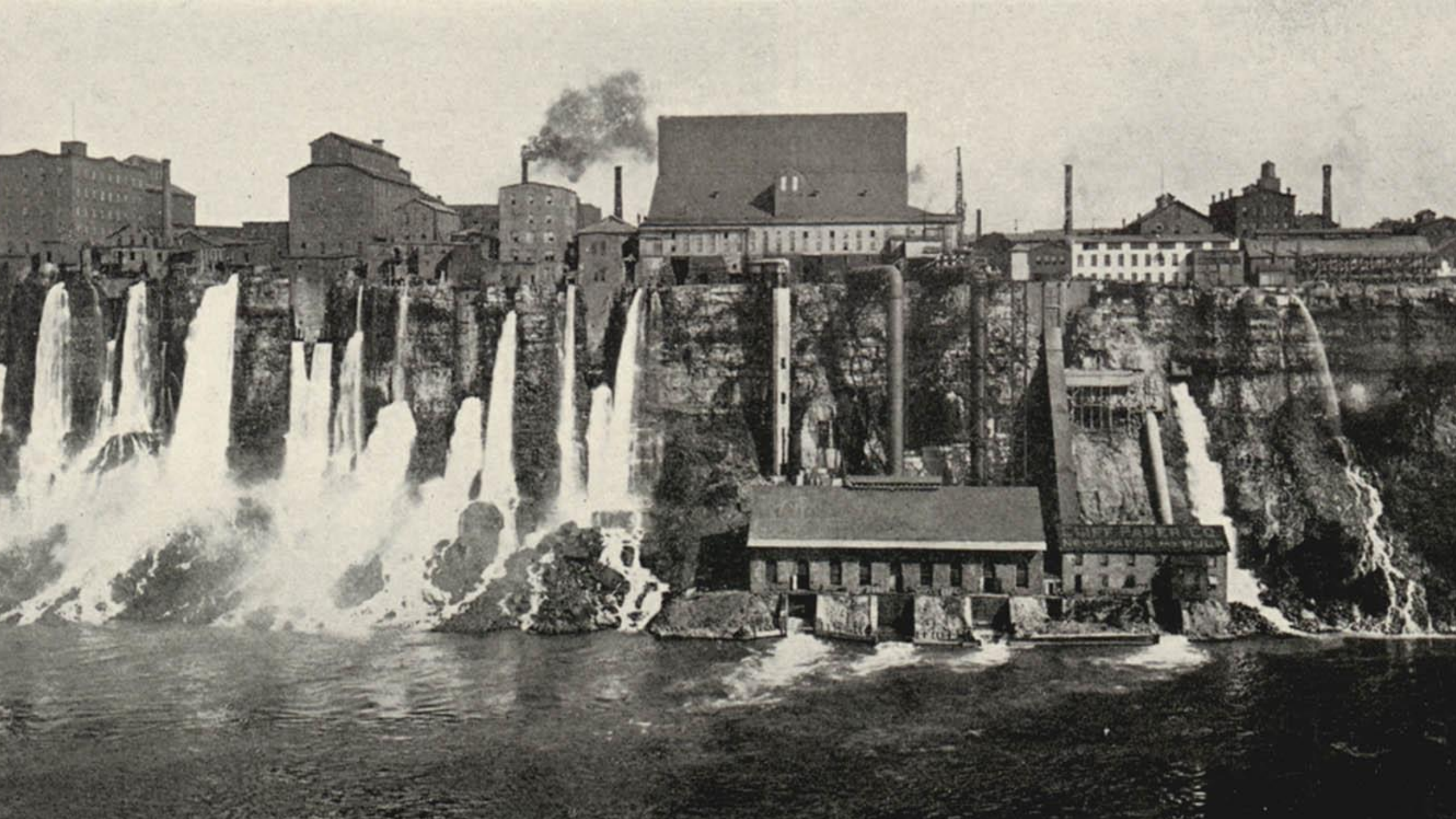
Agenda

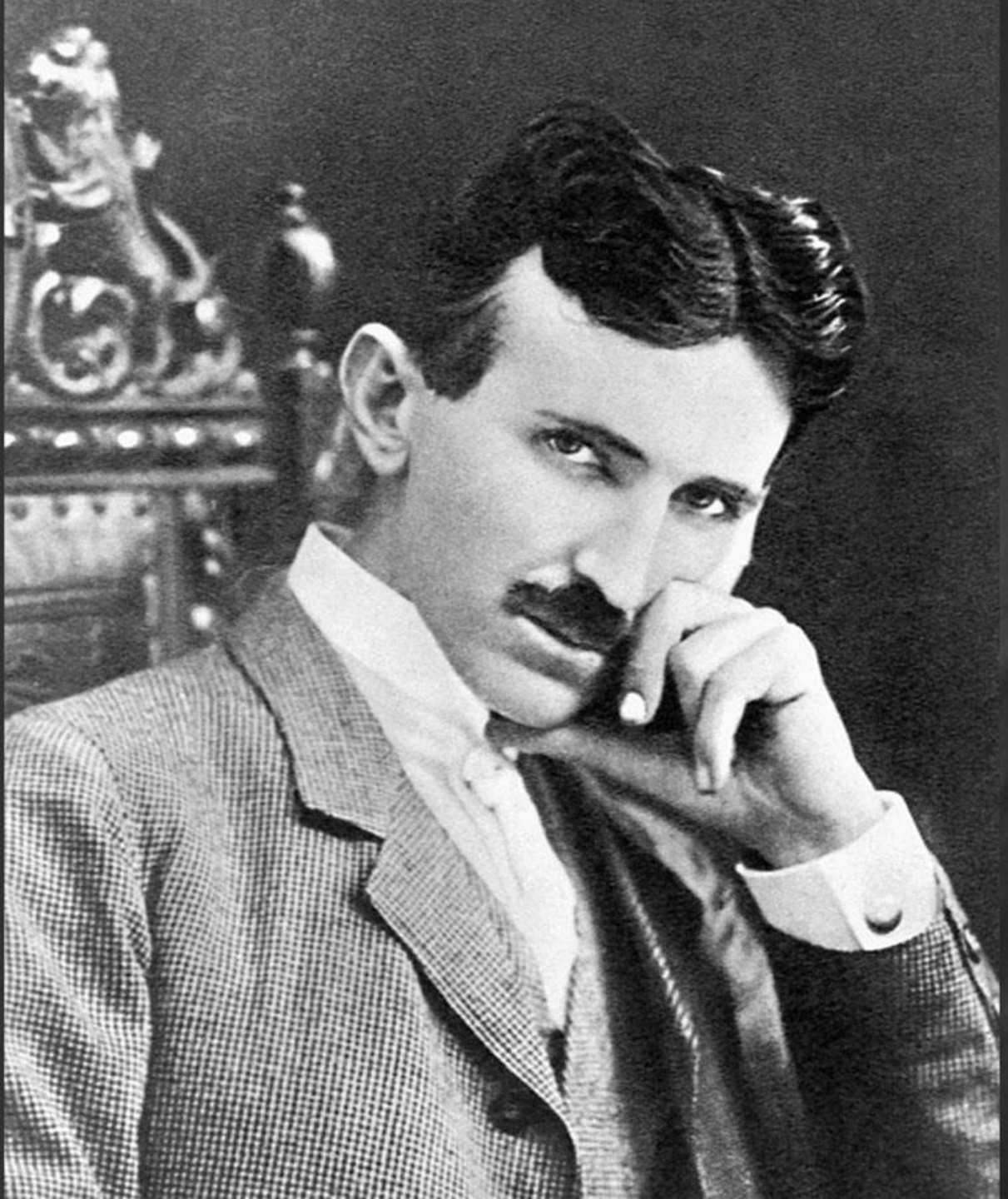
PRELUDE

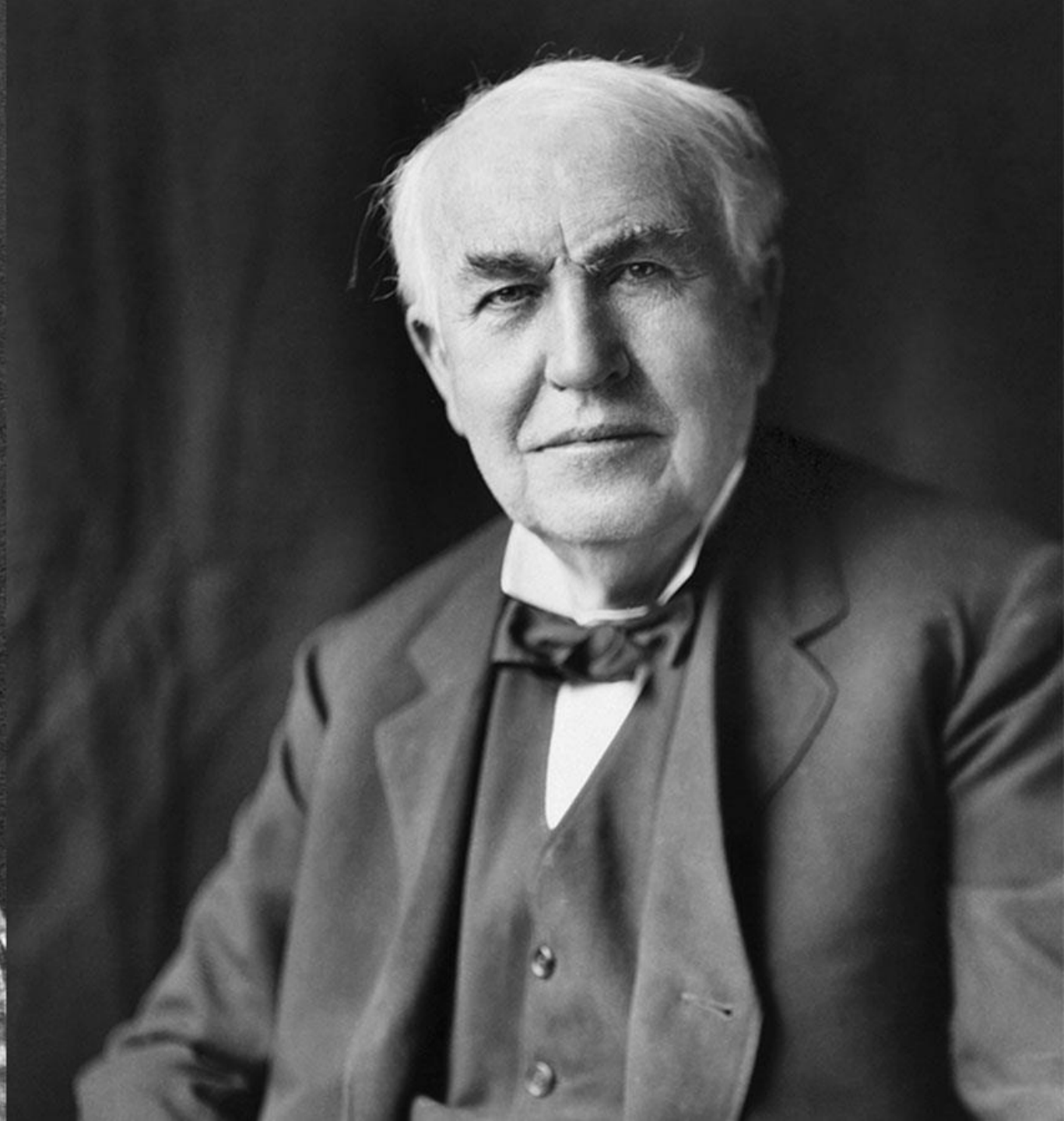
WHAT…

HOW…

WHO…

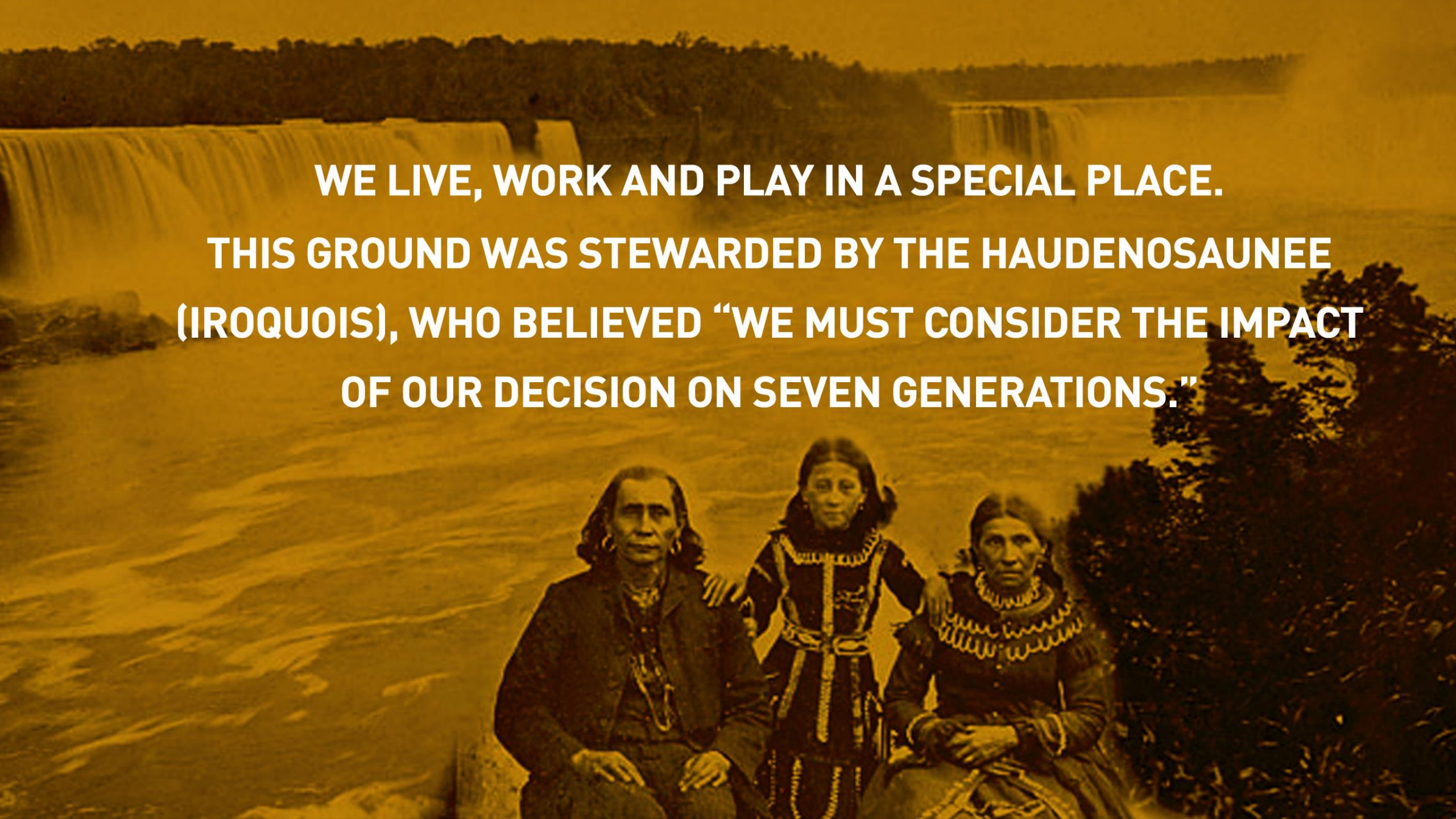







EVACUATE
ALL OF US
NOT JUST
LITTLE KIDS
STOP
I want a swimming pool in my back yard, not a Cesspool! THANKS HOOKER!
PLEASE DON'T LET ME DIE


MAID OF THE MIST


WE LIVE, WORK AND PLAY IN A SPECIAL PLACE.
THIS GROUND WAS STEWARDED BY THE HAUDENOSAUNEE
(IROQUOIS), WHO BELIEVED "WE MUST CONSIDER THE IMPACT
OF OUR DECISION ON SEVEN GENERATIONS."

This is Where Change Begins.

The Tripple Bottom Line

A framework with four integrated aspects: social, environmental, financial and mission

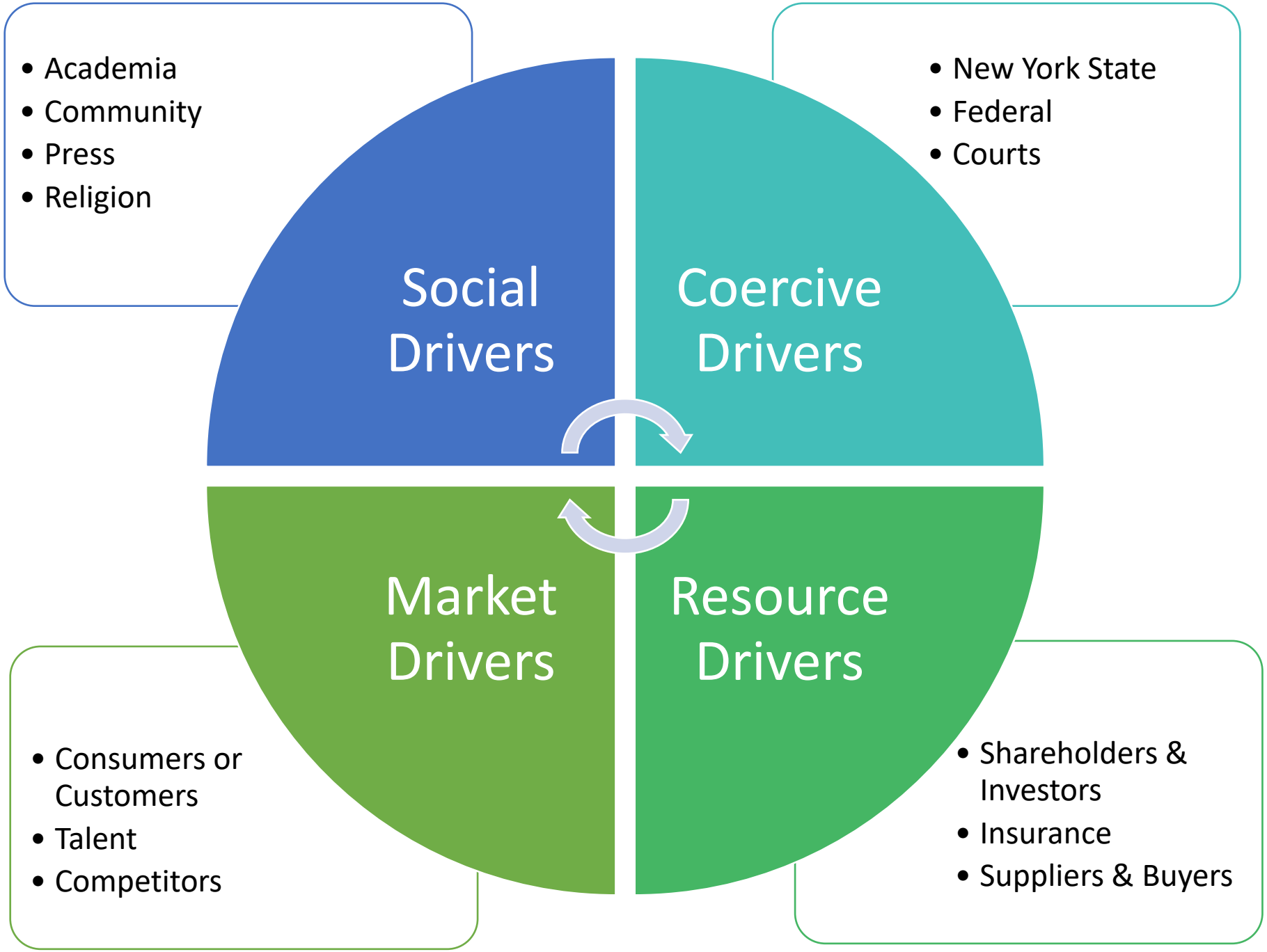
Planet

People

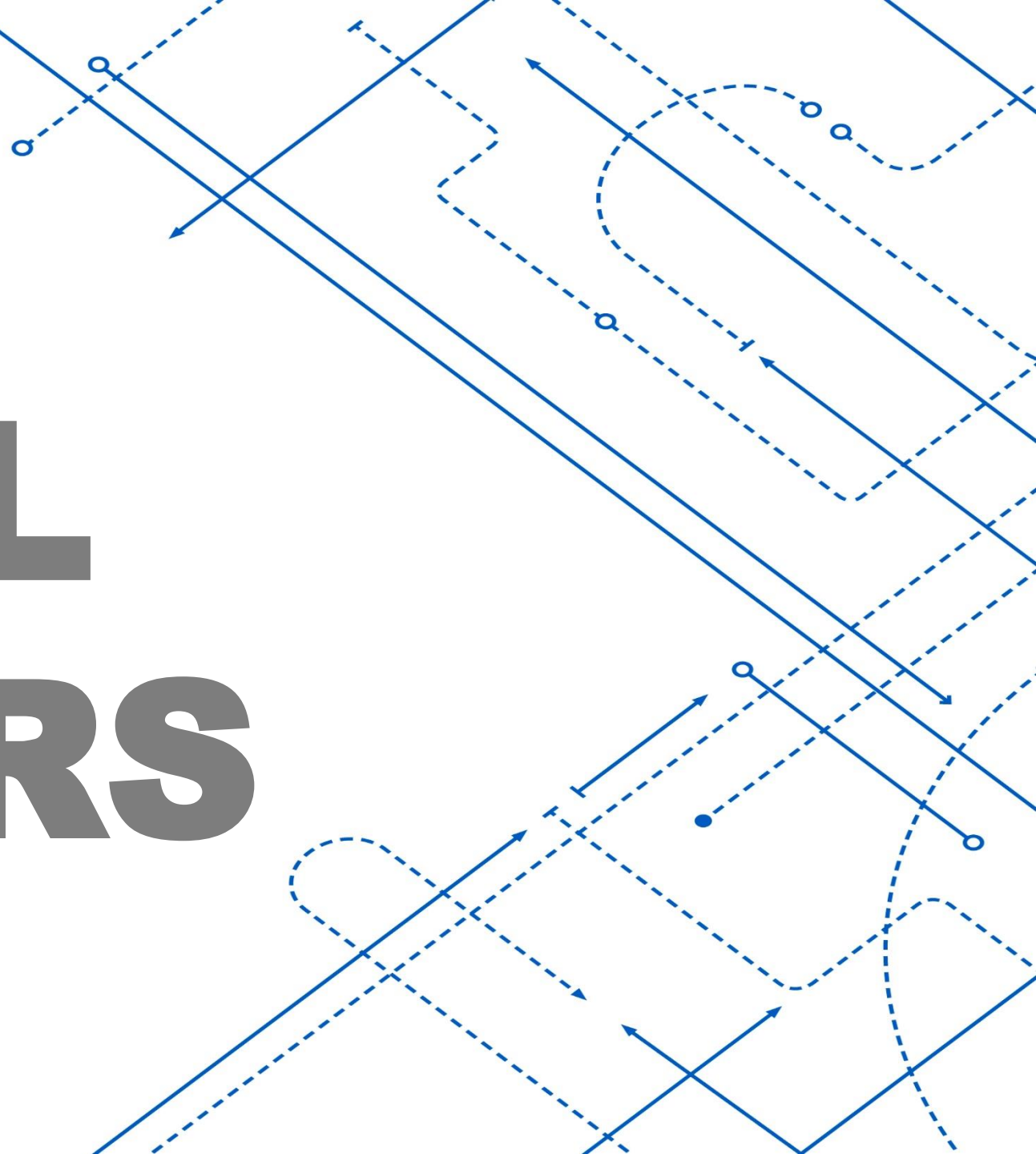
Prosperity

The Proper Lens Needed to Make Balanced and Sustainable Decisions

What | is the business case for taking climate action?

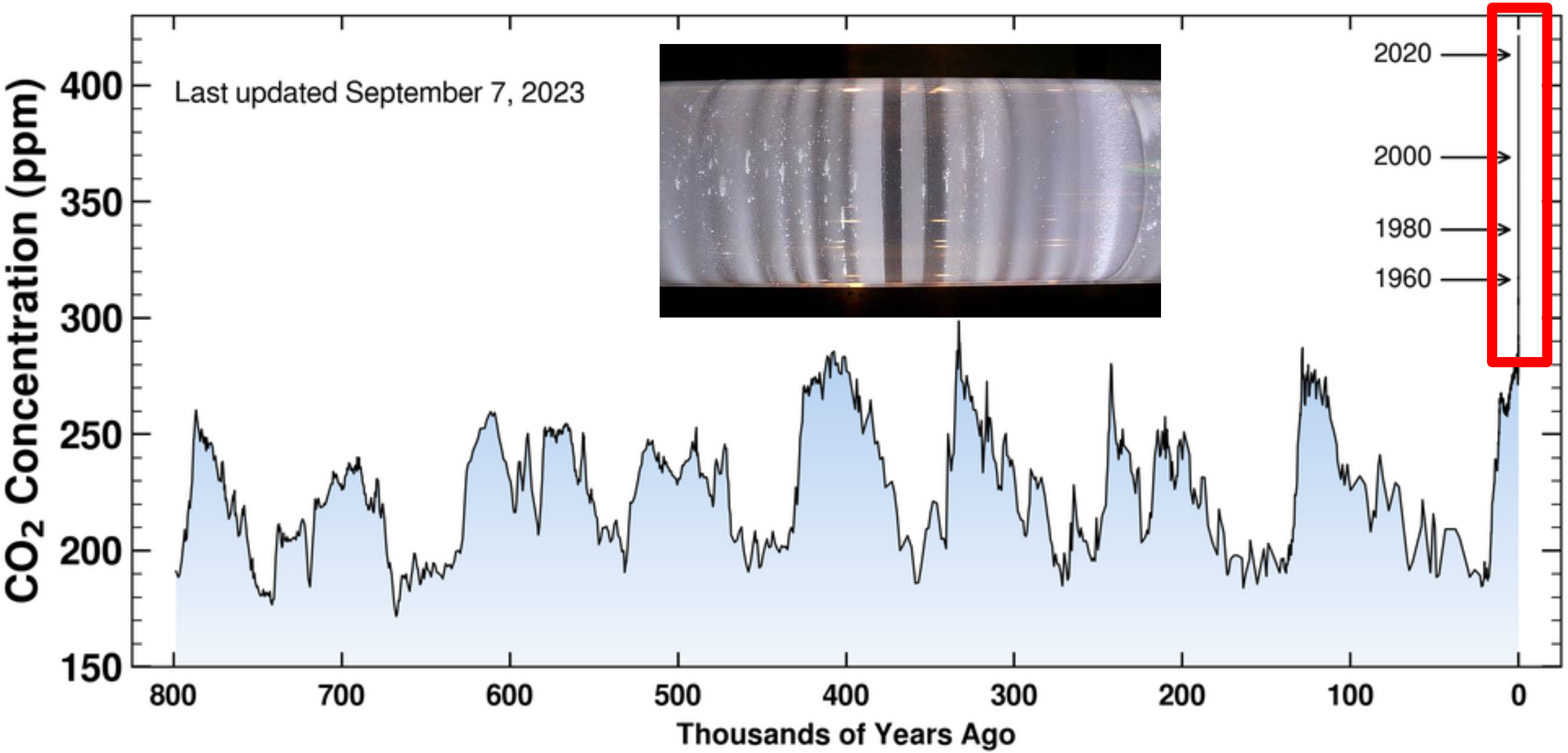

Academia
Community
Press
Religion
Social Drivers
Coercive Drivers
New York State
Federal
Courts
Market Drivers
Resource Drivers
Consumers or Customers
Talent
Competitors
Shareholders & Investors
Insurance
Suppliers & Buyers

SOCIAL DRIVERS



The Science…

Ice-core data before 1958, Mauna Loa Data after 1958



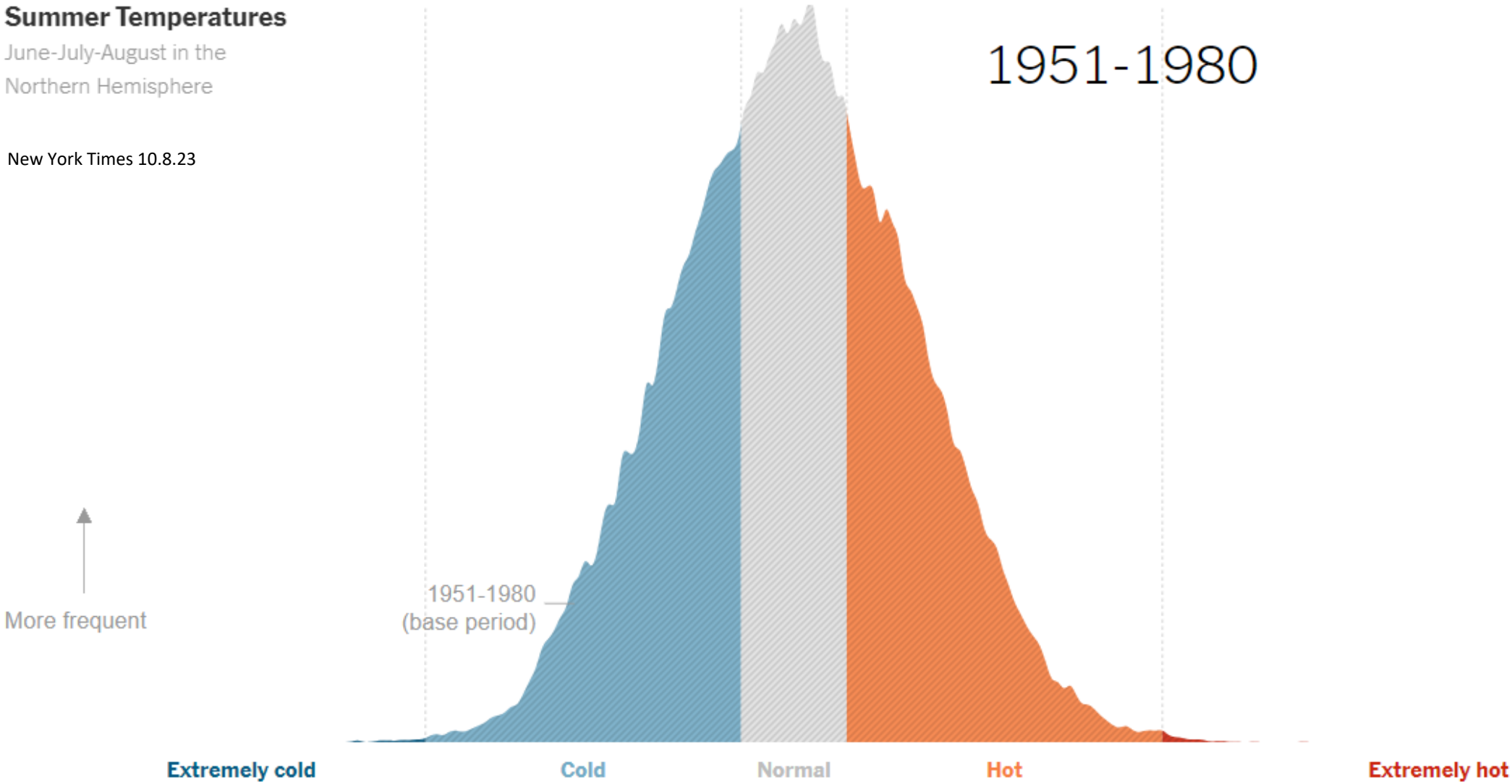
https://scripps.ucsd.edu/programs/keelingcurve/

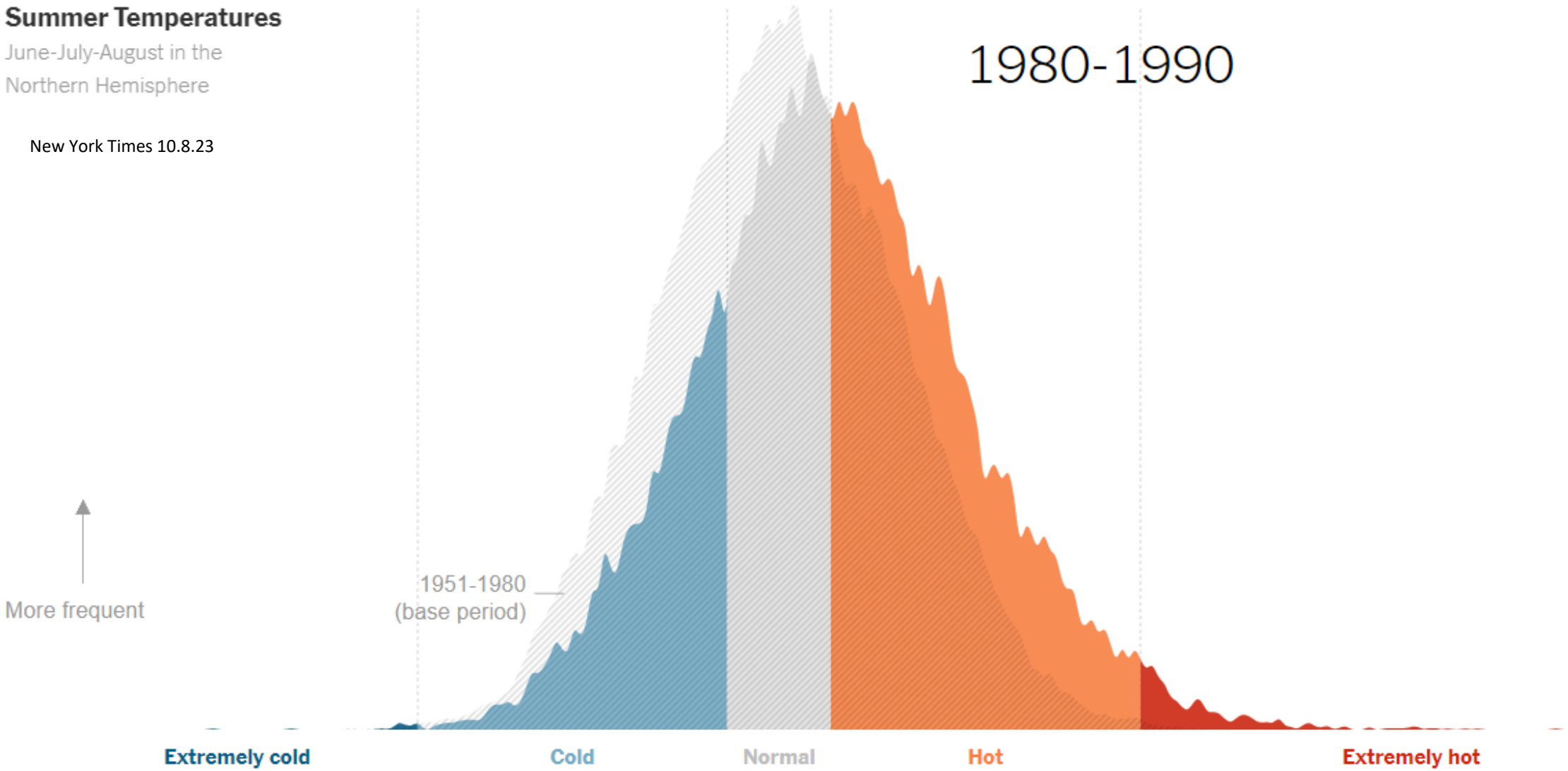

Paradise Community
1001 Village Parkway
530-872-1210

Summer Temperatures

June-July-August in the Northern Hemisphere

New York Times 10.8.23

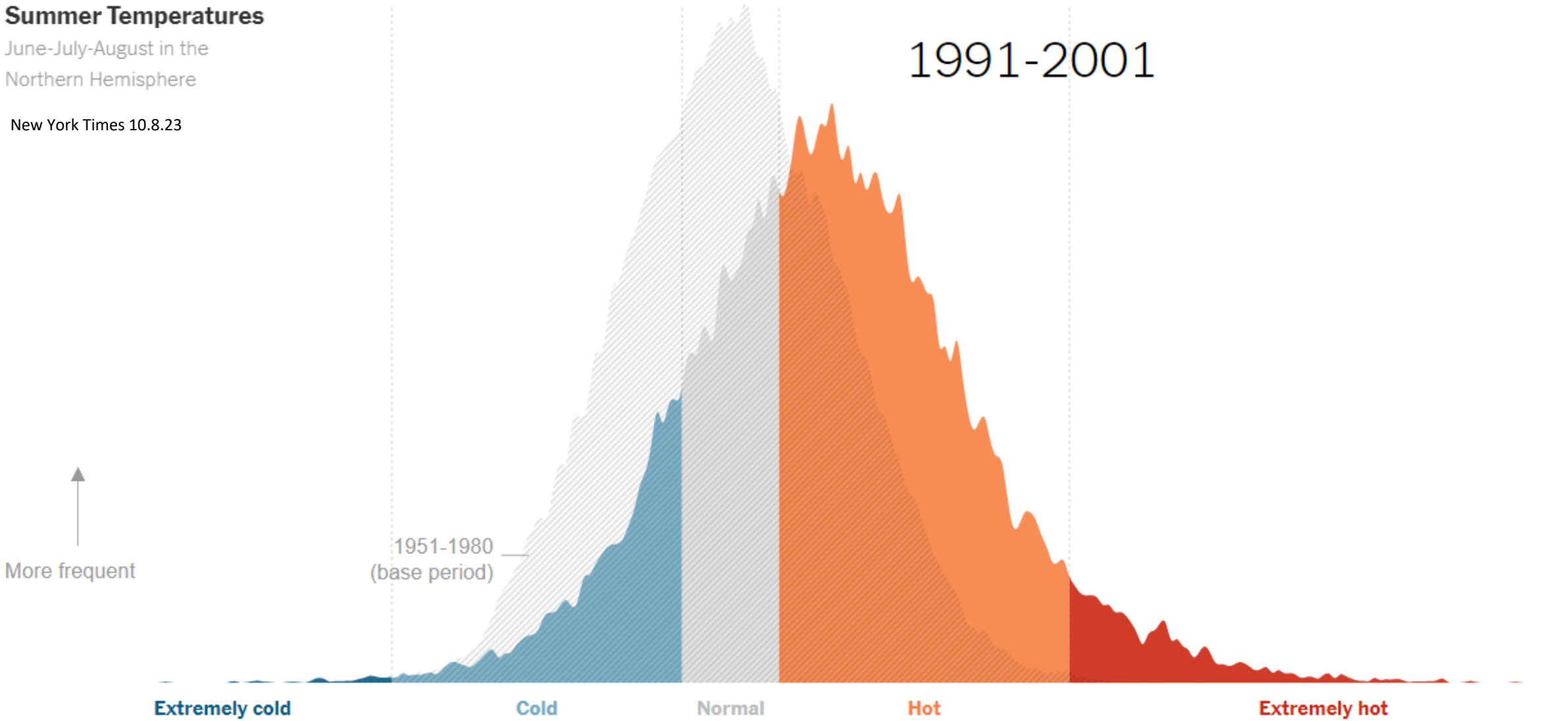



Summer Temperatures
June-July-August in the Northern Hemisphere
New York Times 10.8.23
1980-1990
More frequent
1951-1980
(base period)
Extremely cold
Cold
Normal
Hot
Extremely hot

Summer Temperatures

June-July-August in the Northern Hemisphere

New York Times 10.8.23



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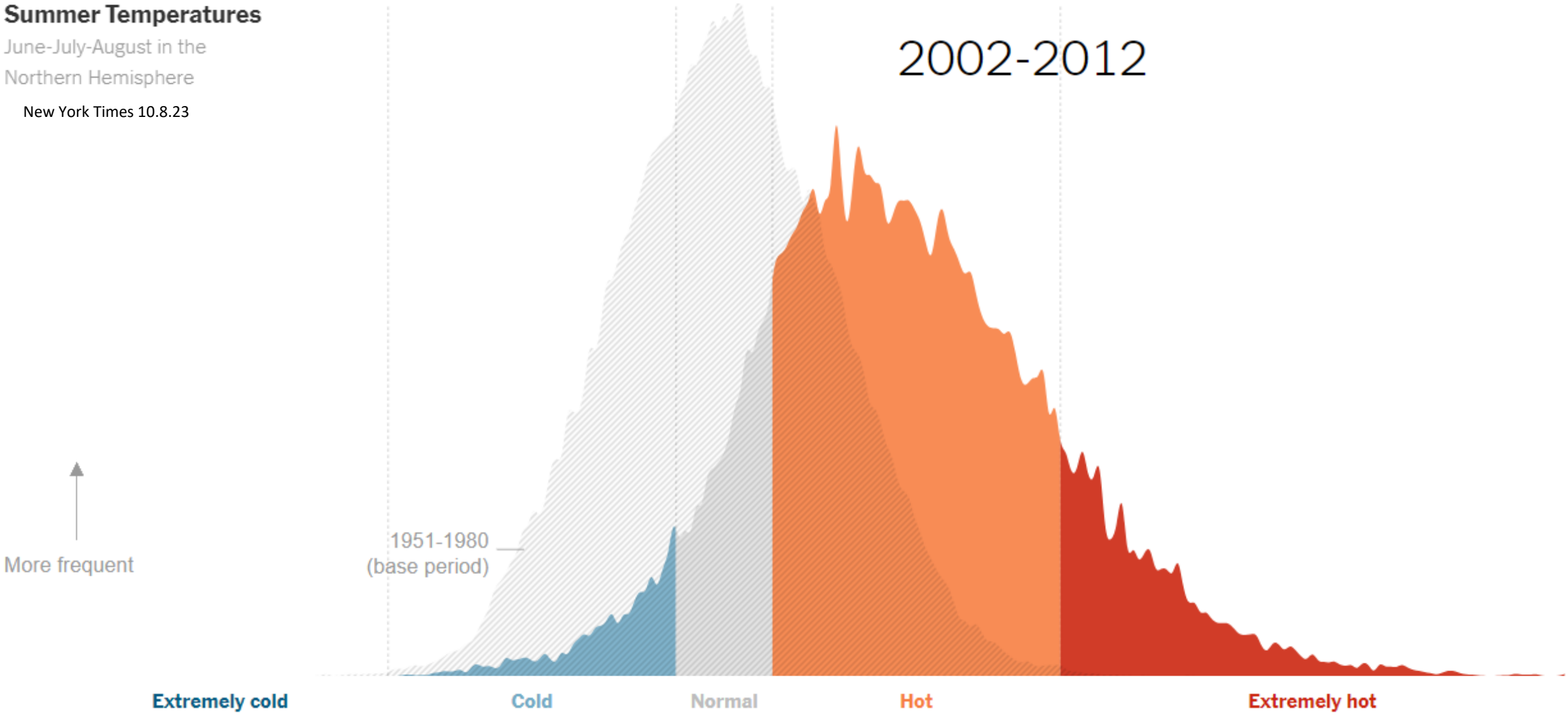

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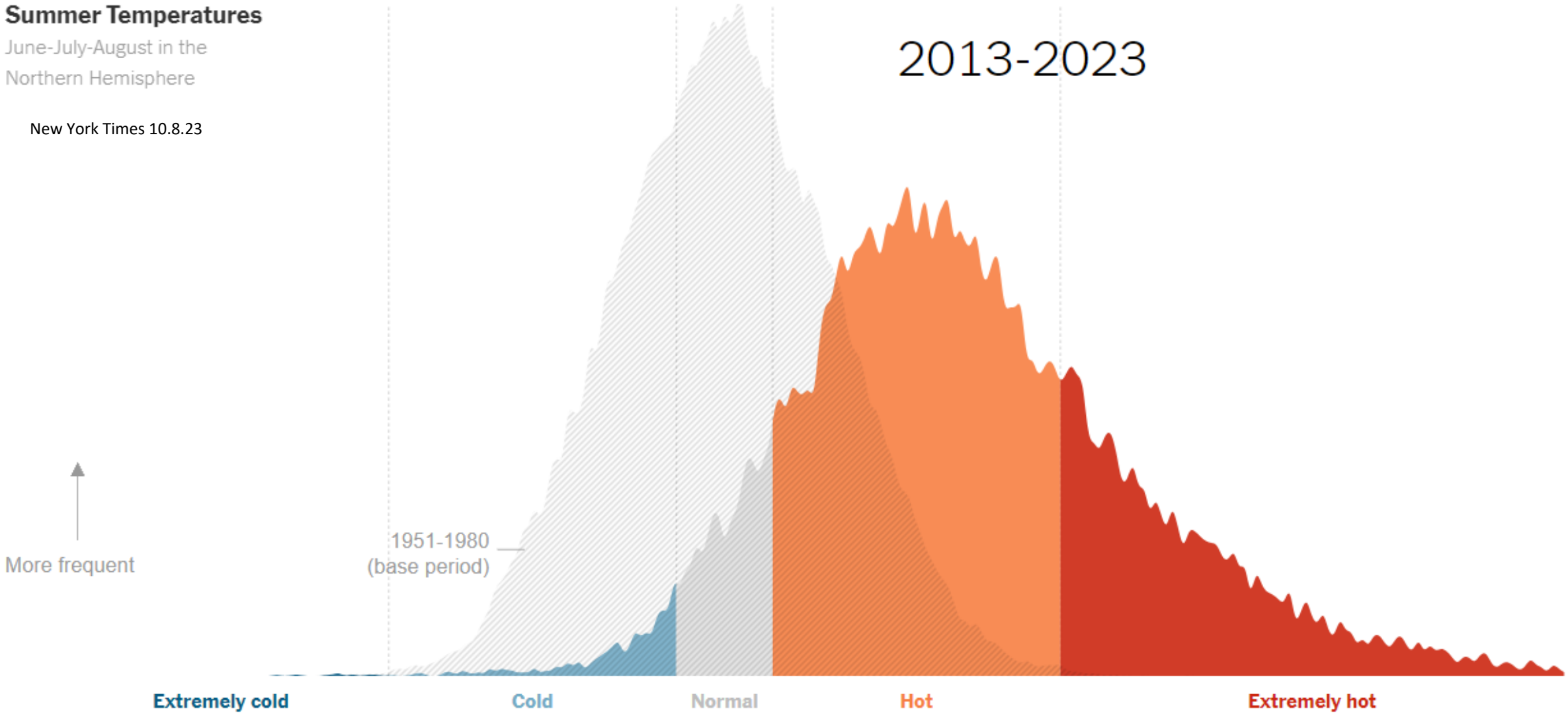
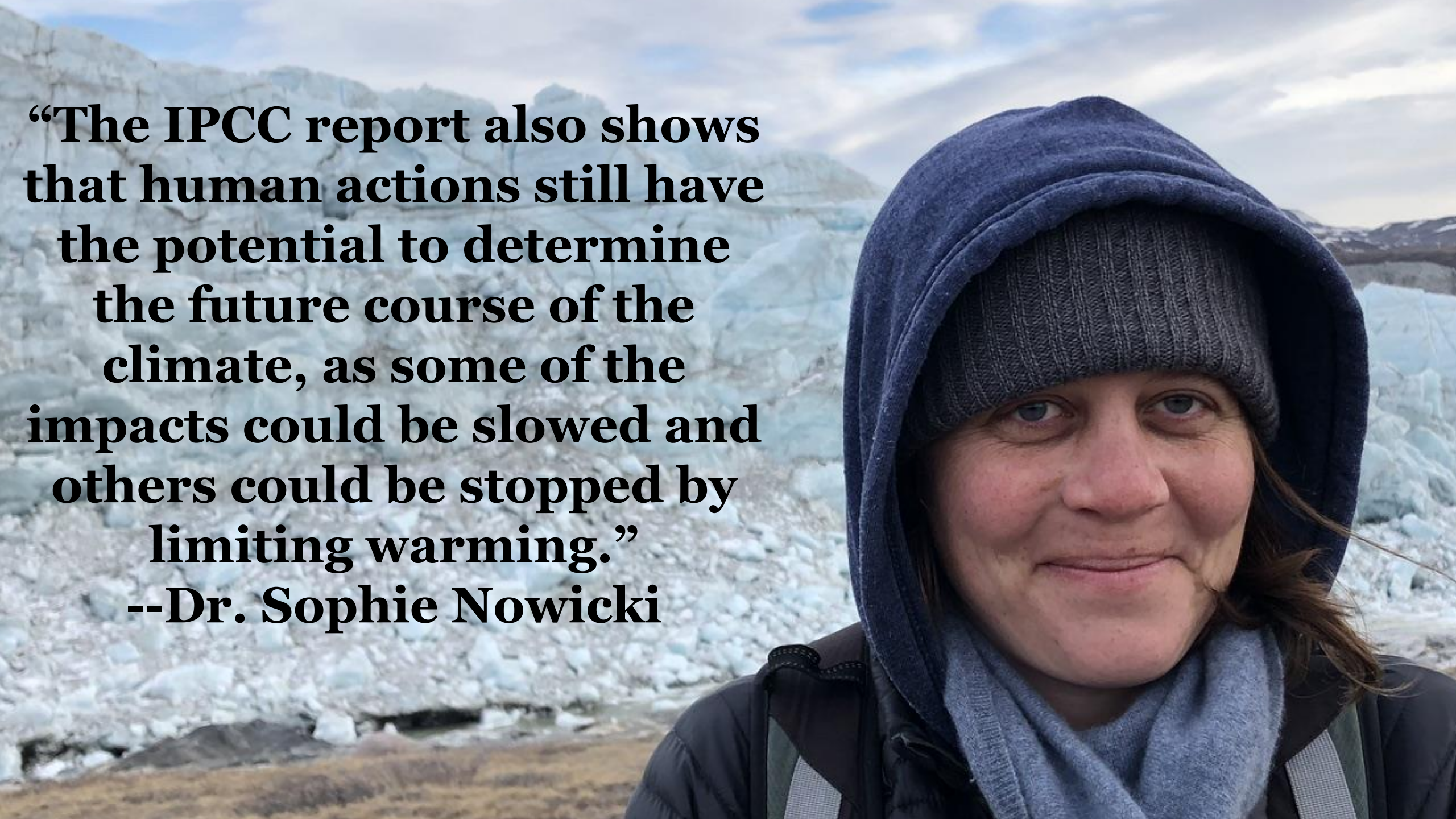



IT'S GAME TIME!
RPM
RACE PLAY MORE
STAMFORD, CT | JERSEY CITY, NJ
LONG ISLAND, NY
28


“The IPCC report also shows that human actions still have the potential to determine the future course of the climate, as some of the impacts could be slowed and others could be stopped by limiting warming.”
--Dr. Sophie Nowicki

MARKET DRIVERS

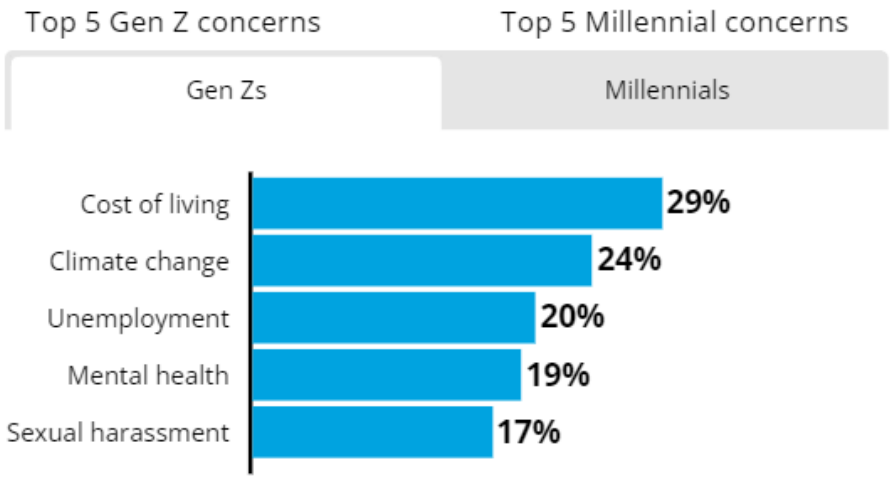
Student Demand.....

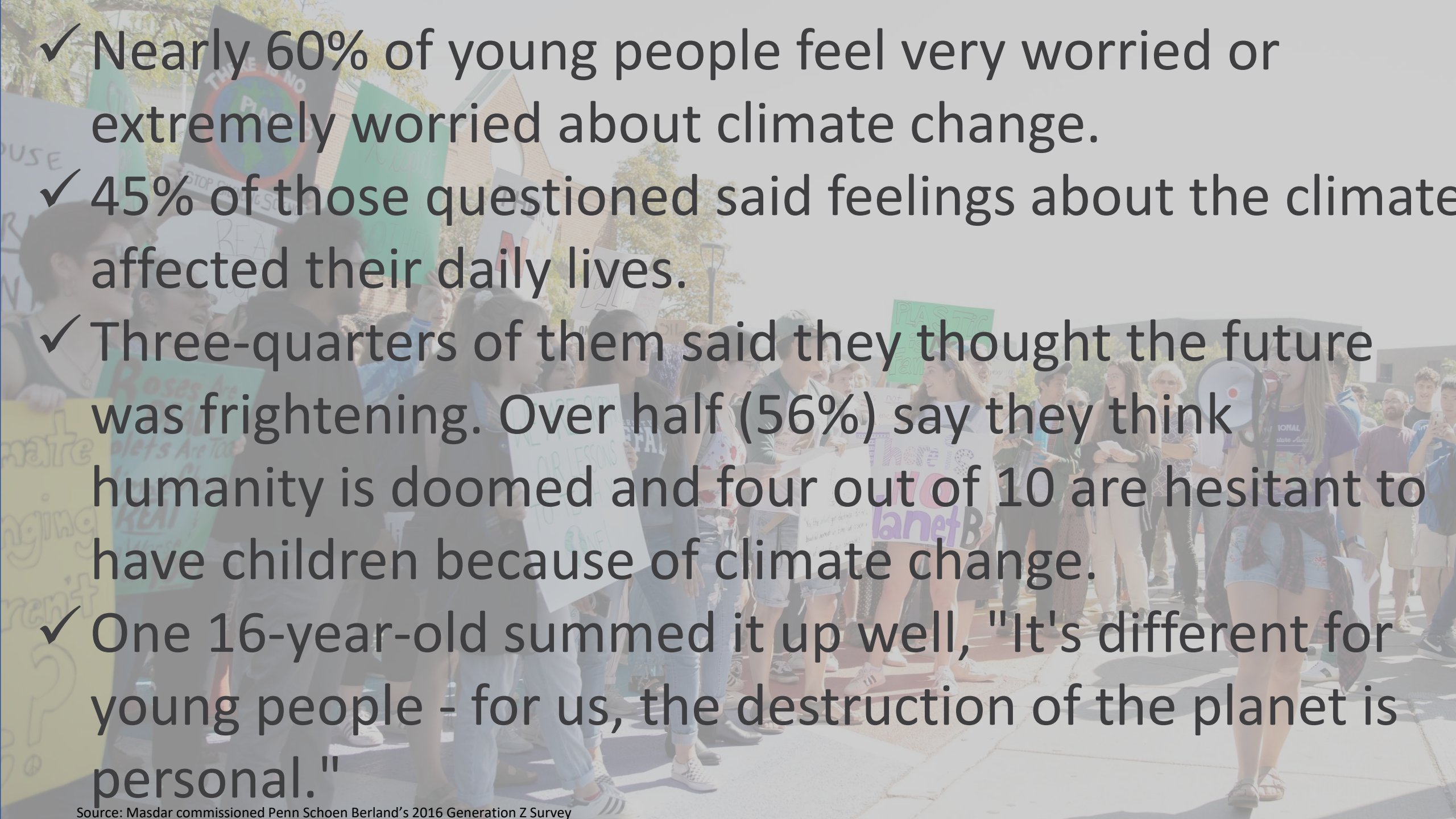
Deloitte Global 2022 Gen Z and Millennial Survey

Top concerns among Gen Zs and millennials

This year's survey finds Gen Zs and millennials deeply concerned about the state of the world, and actively trying to balance the challenges of their everyday lives with their desire to drive societal change.

They are struggling with financial concerns, while trying to invest in environmentally sustainable choices. They feel burned out, but many are taking on second jobs, while pushing for more purposeful—and more flexible—work. They press their employers to tackle climate change, particularly when it comes to efforts they can get directly involved in, but businesses may still be missing opportunities to drive deeper and broader climate action. And they have inspired organizations to take action to address workplace mental health challenges, but many don't feel this is resulting in any tangible change for employees.





- ✓ Nearly 60% of young people feel very worried or extremely worried about climate change.
- ✓ 45% of those questioned said feelings about the climate affected their daily lives.
- ✓ Three-quarters of them said they thought the future was frightening. Over half (56%) say they think humanity is doomed and four out of 10 are hesitant to have children because of climate change.
- ✓ One 16-year-old summed it up well, "It's different for young people - for us, the destruction of the planet is personal."

Source: Masdar commissioned Penn Schoen Berland's 2016 Generation Z Survey

72% of top students think how a university is working to take climate action is an important factor in deciding where to go to school!

THE WORLD UNIVERSITY RANKINGS

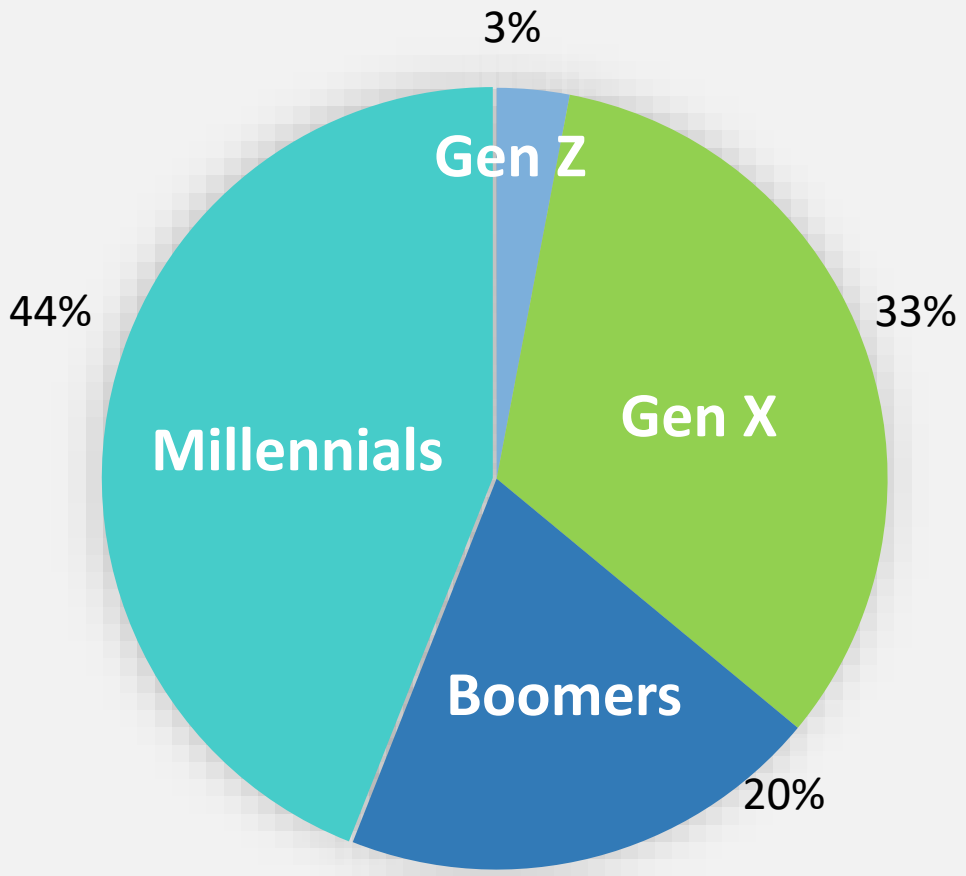
13 CLIMATE ACTION

QUALIFYING SDG - 26% OF OVERALL

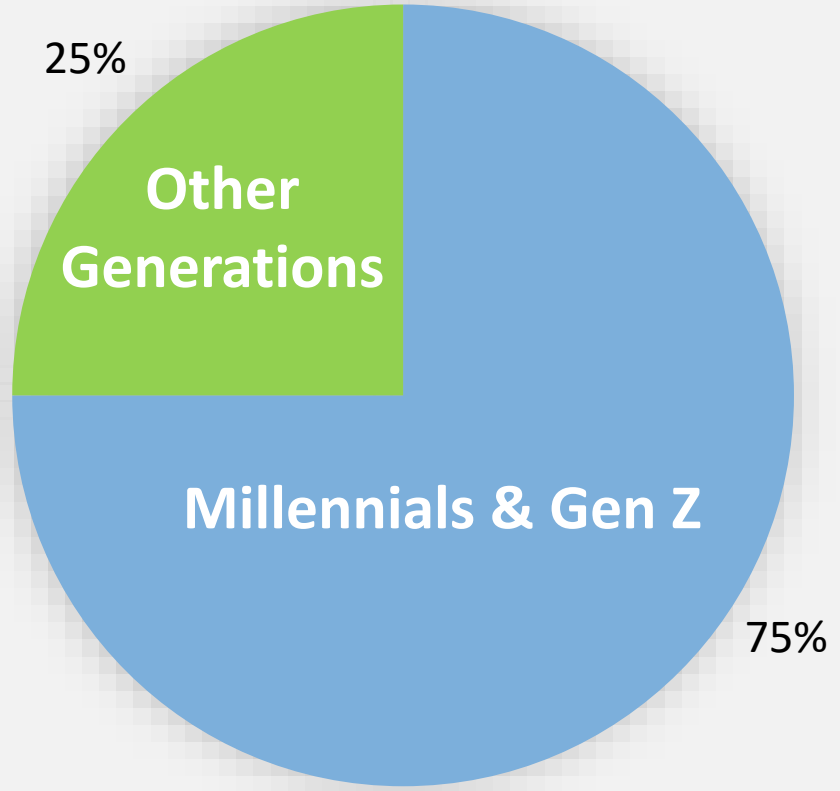
SCORE **87.8** RANK **1** out of **566** institutions

Rank	Name	Climate action	Overall
1	University at Buffalo United States	87.8	87.9
2	Miguel Hernández University of Elche Spain	82.4	77.5–85.2
3	University of British Columbia Canada	82.3	95.1
4	Arizona State University (Tempe) United States Explore	81.8	95.8
=5	University of Dundee United Kingdom	81.4	77.5–85.2
=7	KTH Royal Institute of Technology Sweden	80.6	90.3
=7	Simon Fraser University Canada Explore	80.6	90.1
9	University of Tasmania Australia	80.5	87.6
10	Lappeenranta-Lahti University of Technology LUT Finland	80.1	71.0–77.4

GENERATIONS IN THE WORKFORCE



2019



2025

“70% of US workers said that a firm’s environmental record is important to them and is a consideration when deciding whether to take a job with a company.”

--Gallup Poll 10/21


SUSTAINABILITY TRACKING, ASSESSMENT & RATING SYSTEM
stars
a program of aashe
GOLD
®

COERCIVE DRIVERS

Policy & Funding Shift

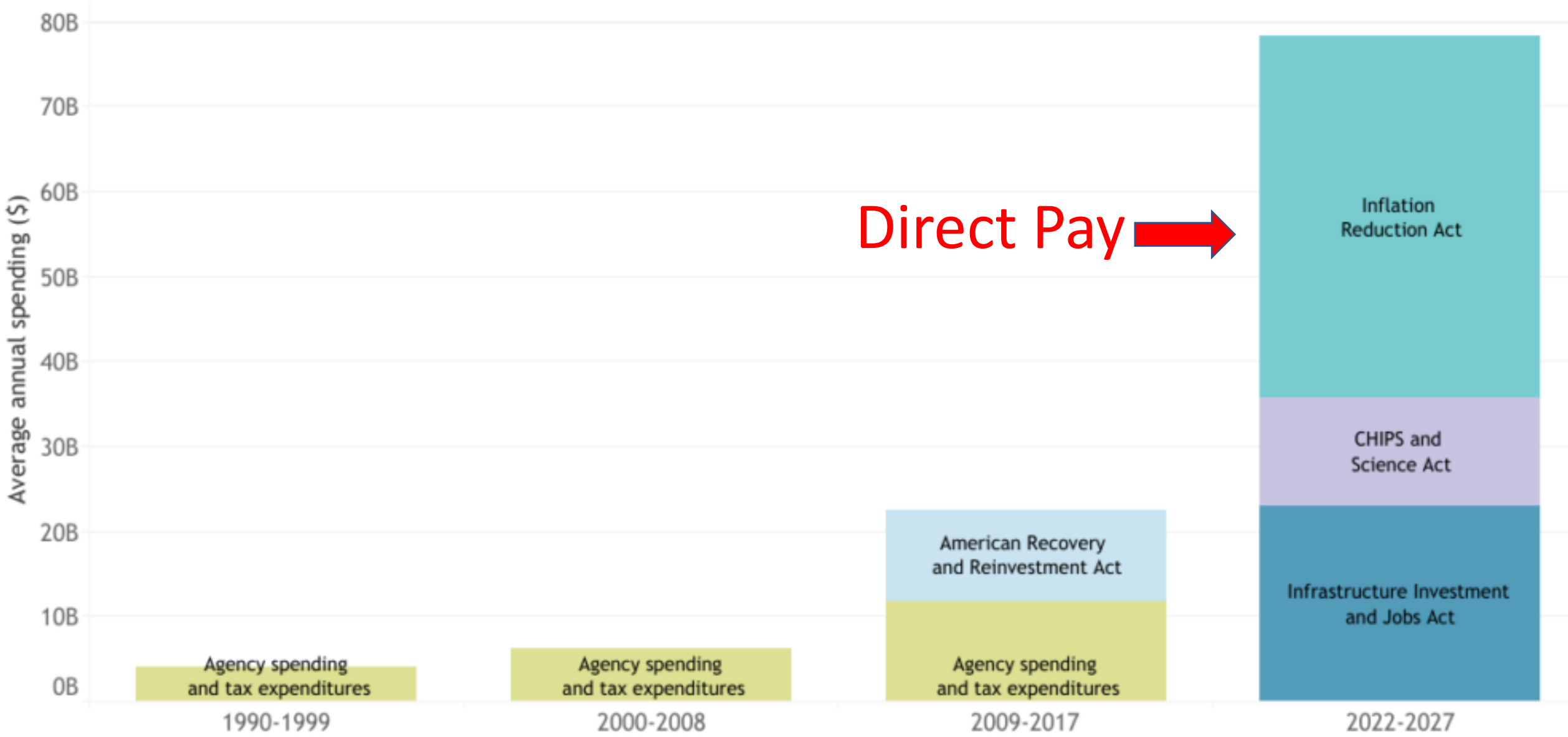
New York State Climate Goals

- Achieve Climate Neutrality by 2050 (Climate Leadership Community Protection Act)
- Mandate 70% renewable power by 2030
- Phased out coal power in 2020
- State Agencies to Decarbonize their Investment Funds and Investment in Clean Energy
- Phase out of fossil fueled vehicles banning sales after 2035 in NYS
- Zero Waste Initiatives (compost mandate and phasing out of single use plastics)

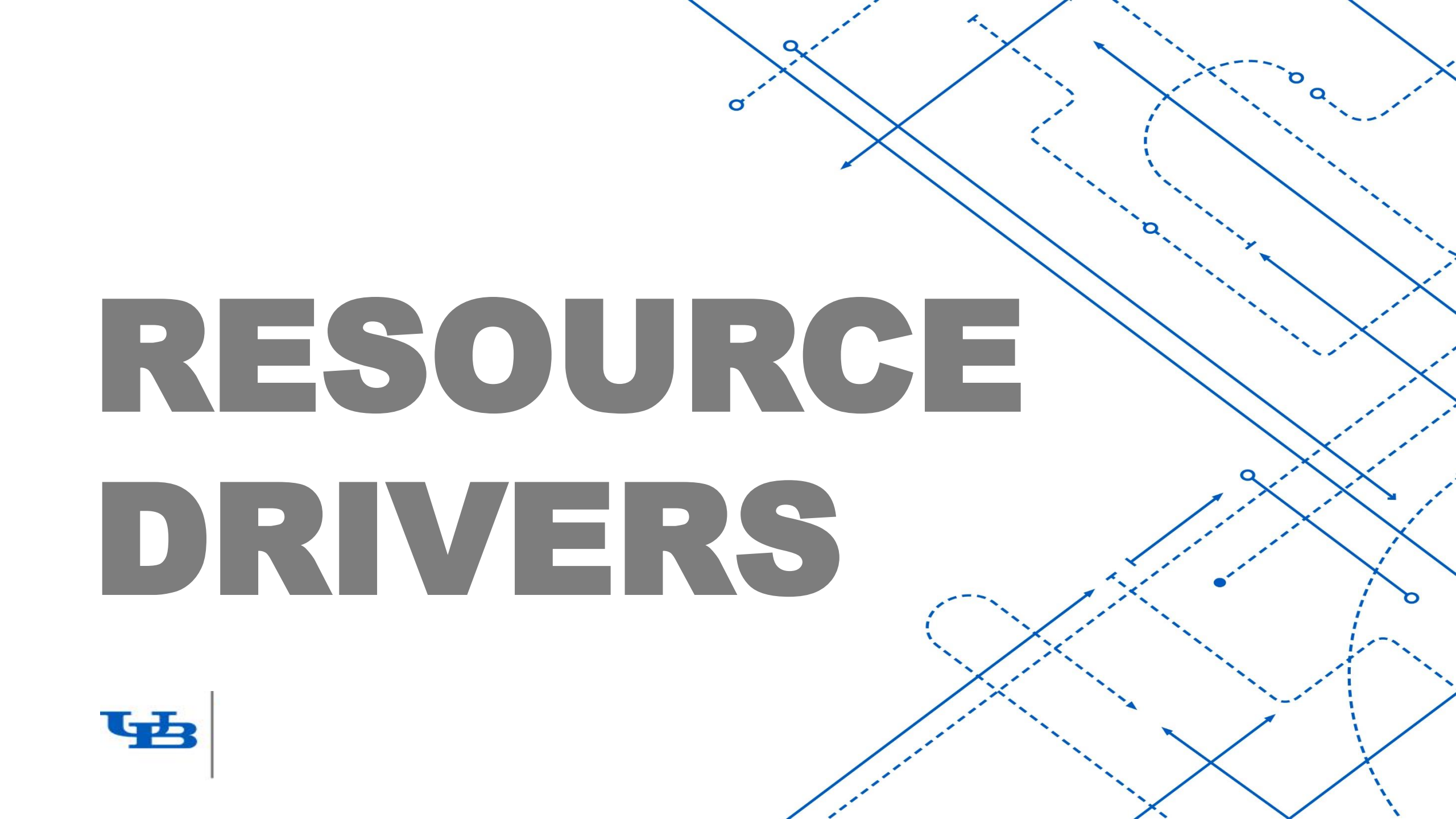

YEA 50 NAY 50
H.R. 5376,
the Inflation Reduction Act
BREAKING NEWS

VP Harris Visits UB to Promote IRA

Over the past 2 years, we have seen historic investment in federal climate spending.
Over the next decade, spending on climate will more than triple historic levels



RESOURCE DRIVERS




"Awareness is rapidly changing, and I believe we are on the edge of a fundamental reshaping of finance. The evidence on climate risk is compelling investors to reassess core assumptions about modern finance."
--Larry Fink, CEO of Blackrock
($7 trillion in assets)
WORLD ECONOMIC FORUM

Fifteenth Annual Survey of Emerging Risks: Summary of Findings

Table 1

Top Five Emerging Risks, 2018–2021

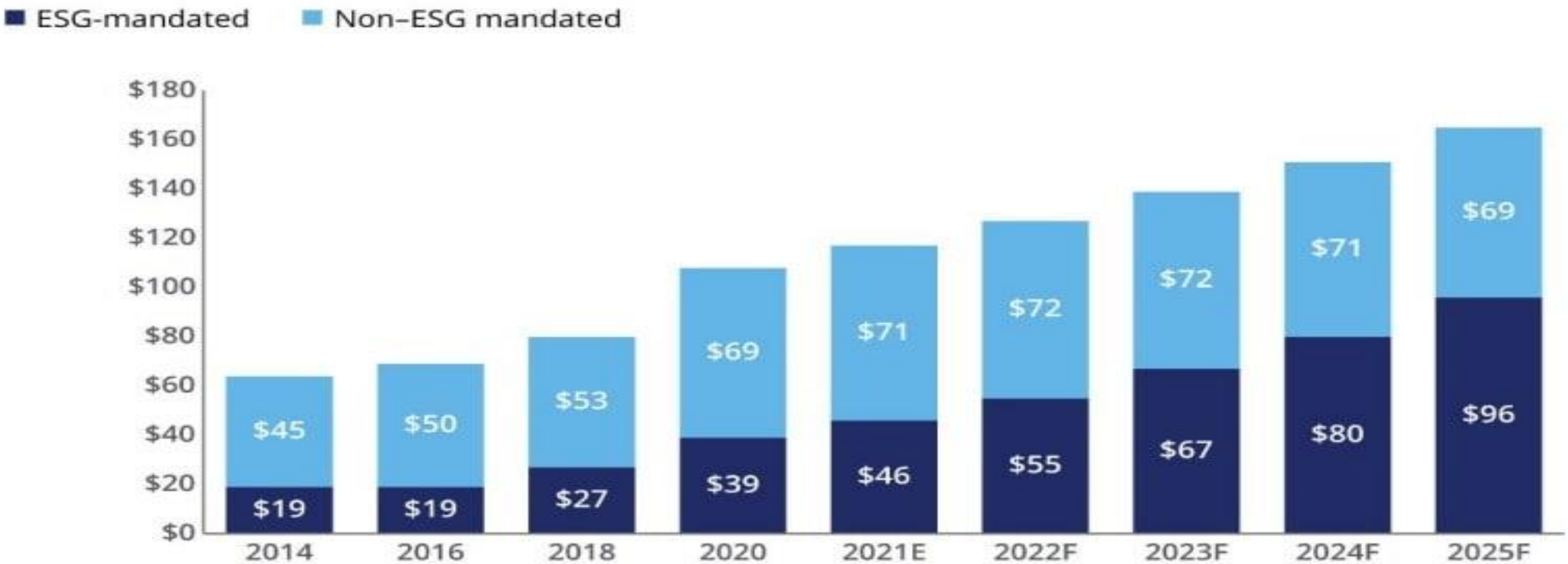
Year	2018	2019	2020	2021
1	Cyber/networks	Climate change	Climate change	Climate change
2	Climate change	Cyber/networks	Cyber/networks	Cyber/networks
3	Disruptive technology	Disruptive technology	Pandemics/ infectious diseases	Pandemics/ infectious diseases
4	Demographic shift	Demographic shift	Disruptive technology	Disruptive technology
5	Financial volatility	Financial volatility	Financial volatility	Financial volatility

Climate change surpassed cyber risk as the top current risk, top emerging risk, and top emerging risk combinations.

FIGURE 1

ESG-mandated assets are projected to make up half of all professionally managed assets globally by 2024

Global assets under professional management ($T)



Note: All amounts are in US dollars.

Source: Proportion of ESG-mandated data through 2020 from Global Sustainable Investment Alliance; DCFS analysis through 2025.

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FOR SAFER CHEMICALS

Walmart

Harmac
MEDICAL PRODUCTS

A Full-Service Medical Device Manufacturer That Works For You.

What...

Does Climate Action Look Like

(at least at UB)

UB 10 in 10

Not all Electricity is Created Equal

Increasing Efficiency

Climate Justice

Keeping it Cozy & Green

Every Action Counts

TBD

Investing Locally to Provide Flexibility

Zero Carbon Mobility

Resilience

Making it Happen

Put a Price on Pollution

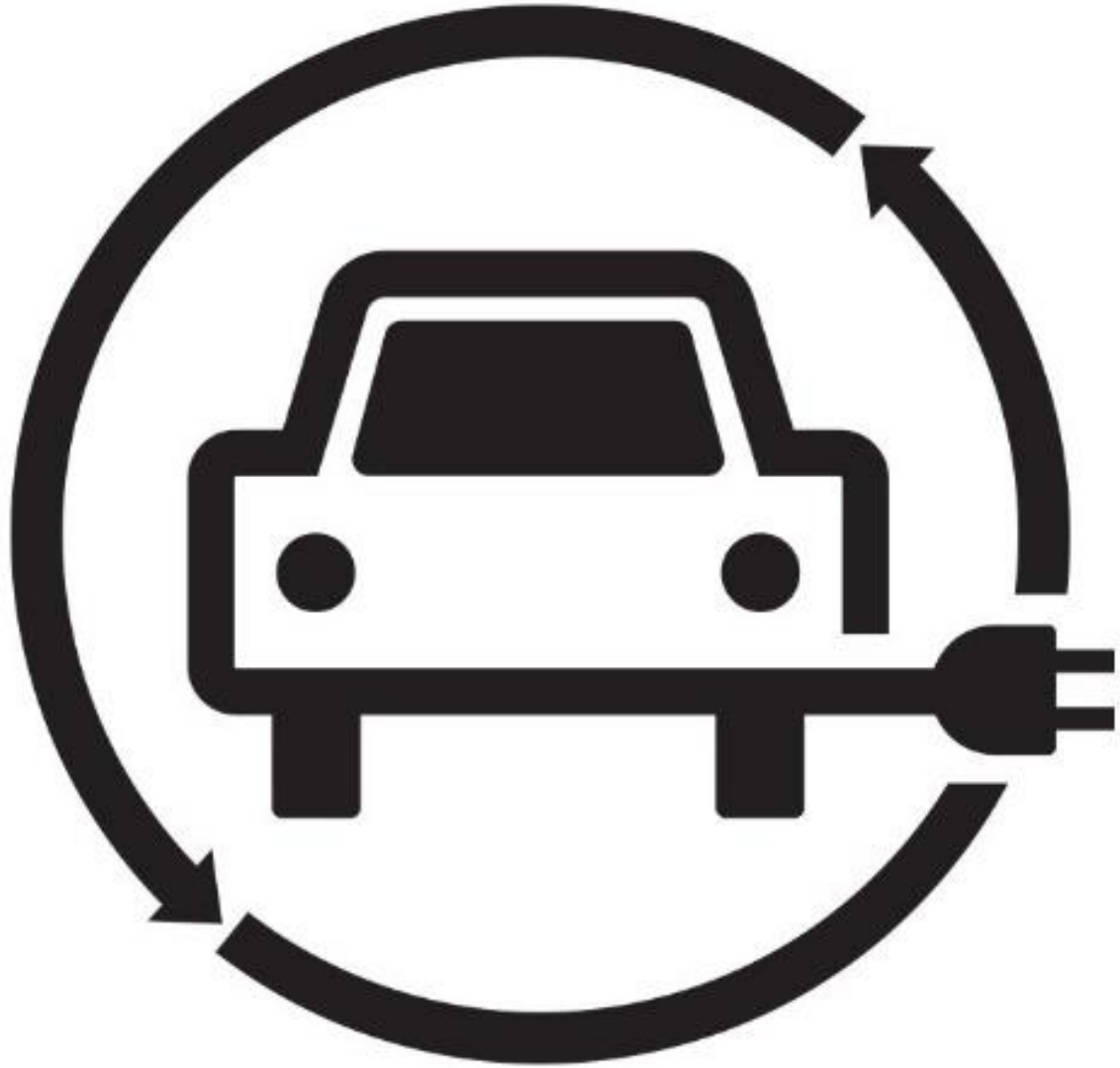
TBD

Waste Not

Responsible Investing

Taking Stock of Our Food System

We have reduced about a third of overall emissions

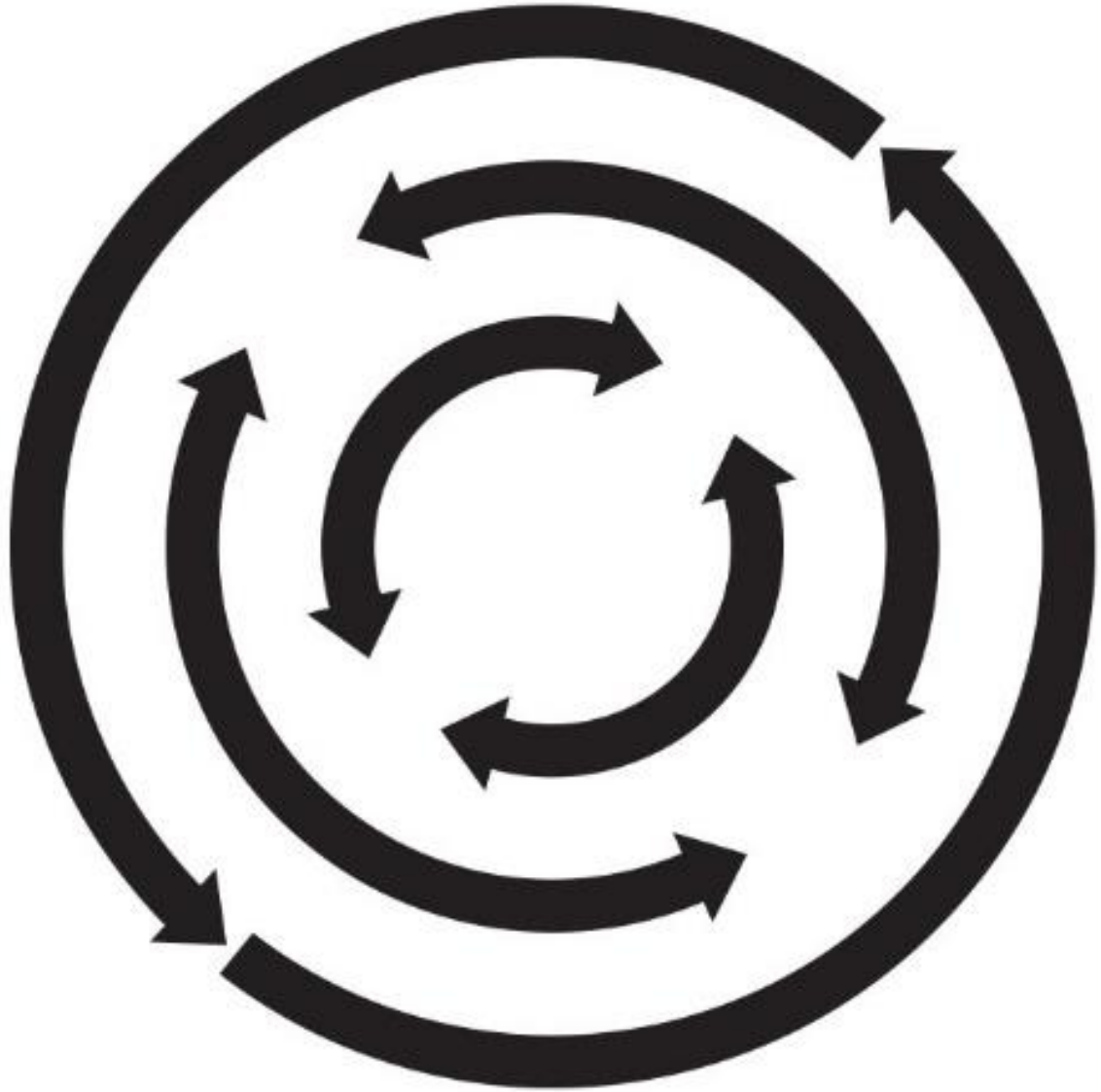



VEHICLE
PARKING
ONLY WHILE
CHARGING
EV


UB STAMPED
xcelsior
CHARGE

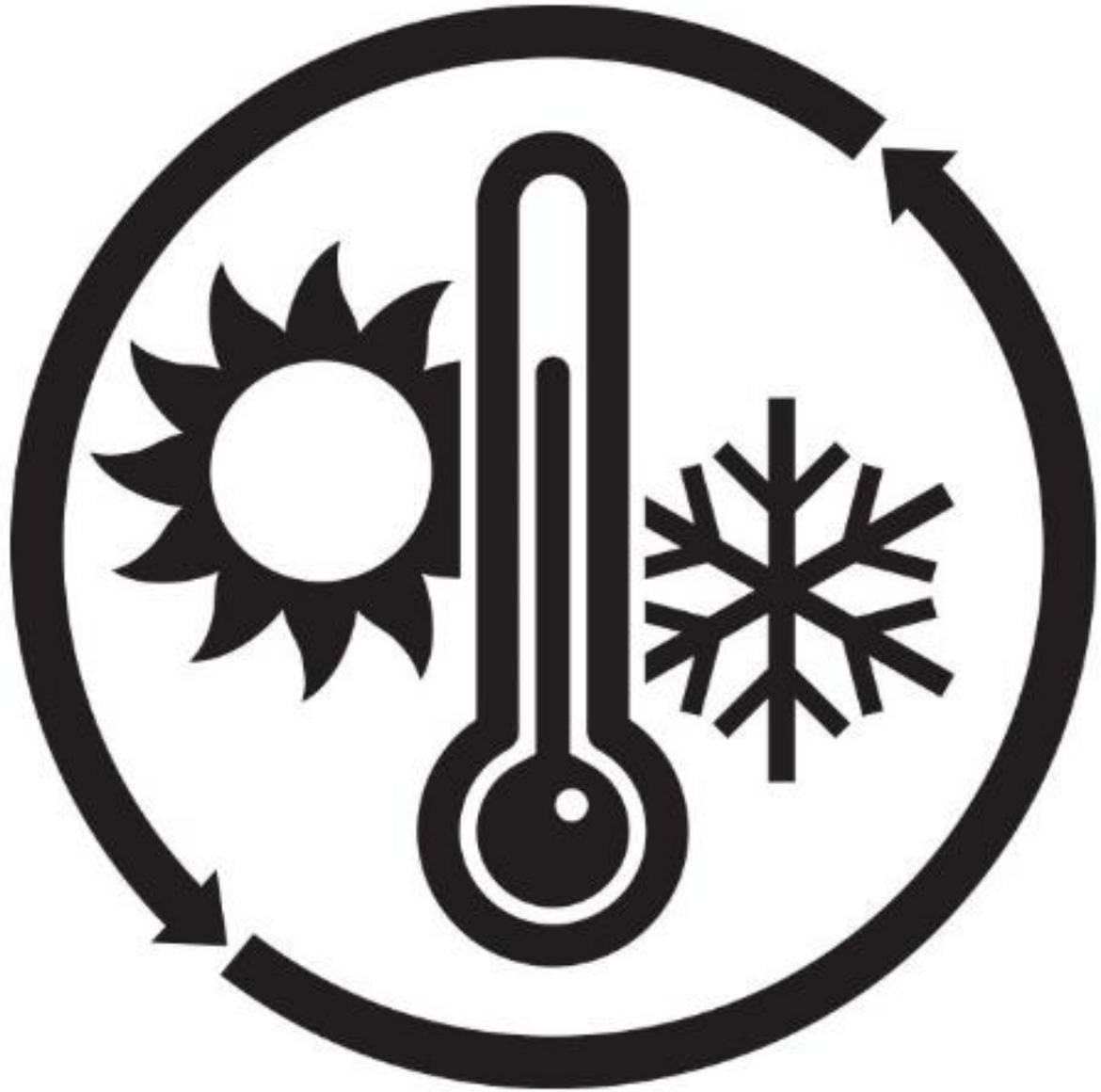

University at Buffalo
FOR OFFICIAL USE ONLY
NEW YORK
B F 3939
ERIE


SERVICE CENTER ROAD
1
22
3
4
1
24'
1
46
21'-9"
24'
52
22
1
24'
1
52
20'-5"
24'
2
26
1
24'
1
24'-5"
2
30
2




RECYCLE
Cans and Bottles, #1, #2 Plastics,
Aluminum Foil, Clean Paper and Cardboard
ORGANICS
All Food Scraps, Meat, Dairy and Cheese,
Compostable #7 PLA Containers, Compostable Cups and Dining Ware.
TRASH
ESW Composting Project
EXIT


OUTFINE

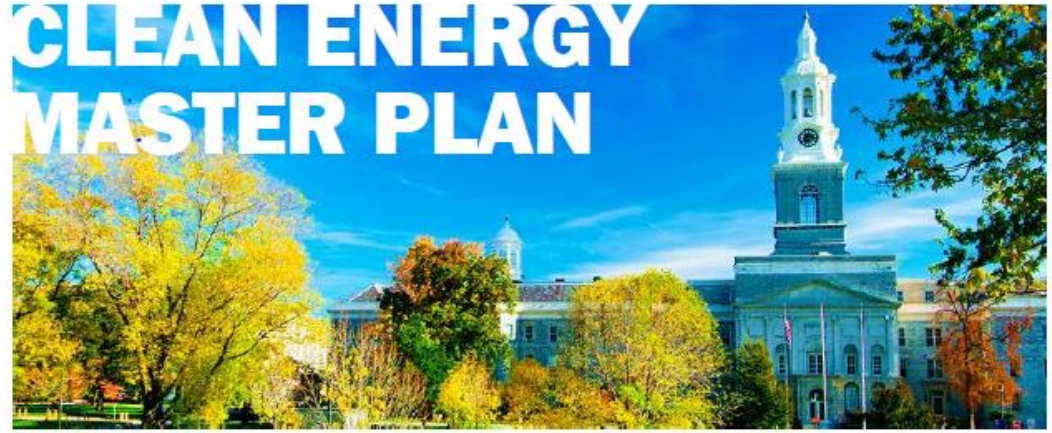


July 2023

CLEAN ENERGY MASTER PLAN
overview report

UNIVERSITY AT BUFFALO SOUTH CAMPUS

Prepared By wendel



VISION

The University at Buffalo understands the existential threat that climate change poses to our institution, our region, state, country and planet. That is why we have doubled down on our commitment to become climate neutral. To achieve this, we are standing on the shoulders of five decades of environmental leadership and focusing our climate action work on a holistic solutions-orientated approach.

Over the past five years, the University at Buffalo has reduced its carbon footprint by an average of 33% (as measured in metric tons of carbon dioxide equivalents) by replacing 671,594,561 kilowatt hours of electricity to renewable sources. This leadership was recently recognized by the Times Higher Education Impact Rankings, which rated UB #1 among U.S. universities in taking urgent action to combat climate change. This progress has been made possible through a series of innovative renewable energy projects that now provide 100% clean electricity to our campus. From our early on campus work with the creation of the most publicly accessible renewable energy landscape in the country (the UB Solar Strand) to our current REV Campus Challenge clean energy scaling work, we have methodically learned, continue to build upon our experiences and advance climate action across New York State and the nation. However, we recognize that these success stories are not the end, rather the foundation to build upon as we progress to a carbon neutral future.

UB's *10 in 10* is our roadmap of 10 innovative, engaging and digestible steps we are advancing to increase climate action throughout the University and put us on a path to net zero emissions by 2030. The strategy is holistic, inclusive, engages our broader community and leverages both a triple bottom line approach as well as the Sustainable Development Goals.

MISSION

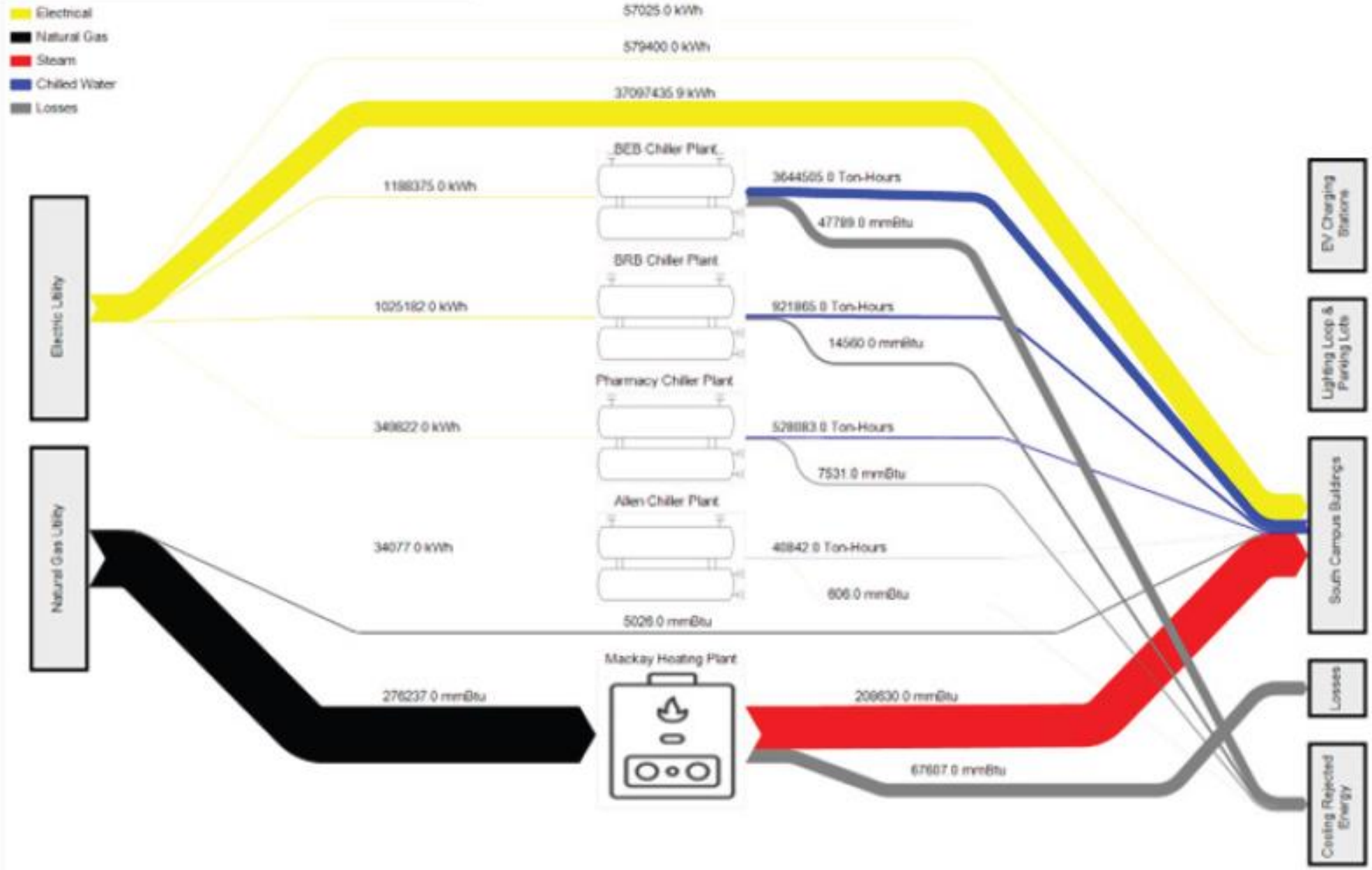
This Clean Energy Master Plan focused on a key strategy of UB's *10 in 10 Climate Action Plan* at the University at Buffalo's South Campus. The South Campus, or Main Street Campus, is a Western New York landmark dating back to the 1920s. Situated in a residential neighborhood in North Buffalo, the 153-acre parcel is home to classic ivy-covered buildings, as well as residence halls and cutting-edge research and teaching facilities. The schools of Architecture and Planning, Dental Medicine, Public Health and Health Professions, and Nursing are located here. In addition, the campus is heated centrally by the MacKay heating facility which is the largest central source of Scope 1 Greenhouse Gas (GHG)[1] emissions at UB. South Campus comprises of 46 Buildings totaling more than 2.8 million square feet with an annual energy cost of more than $3.8 Million. Like all entities seeking to achieve long-term impacts on our environment, our desire for sustainable results is balanced by the scarcity of capital funding. This plan seeks to develop a strategy that will maximize the amount of construction that can be done by cost effectively implementing sustainable improvements, aligned with campus planning, that maximize the life cycle cost value to the University.

GOAL

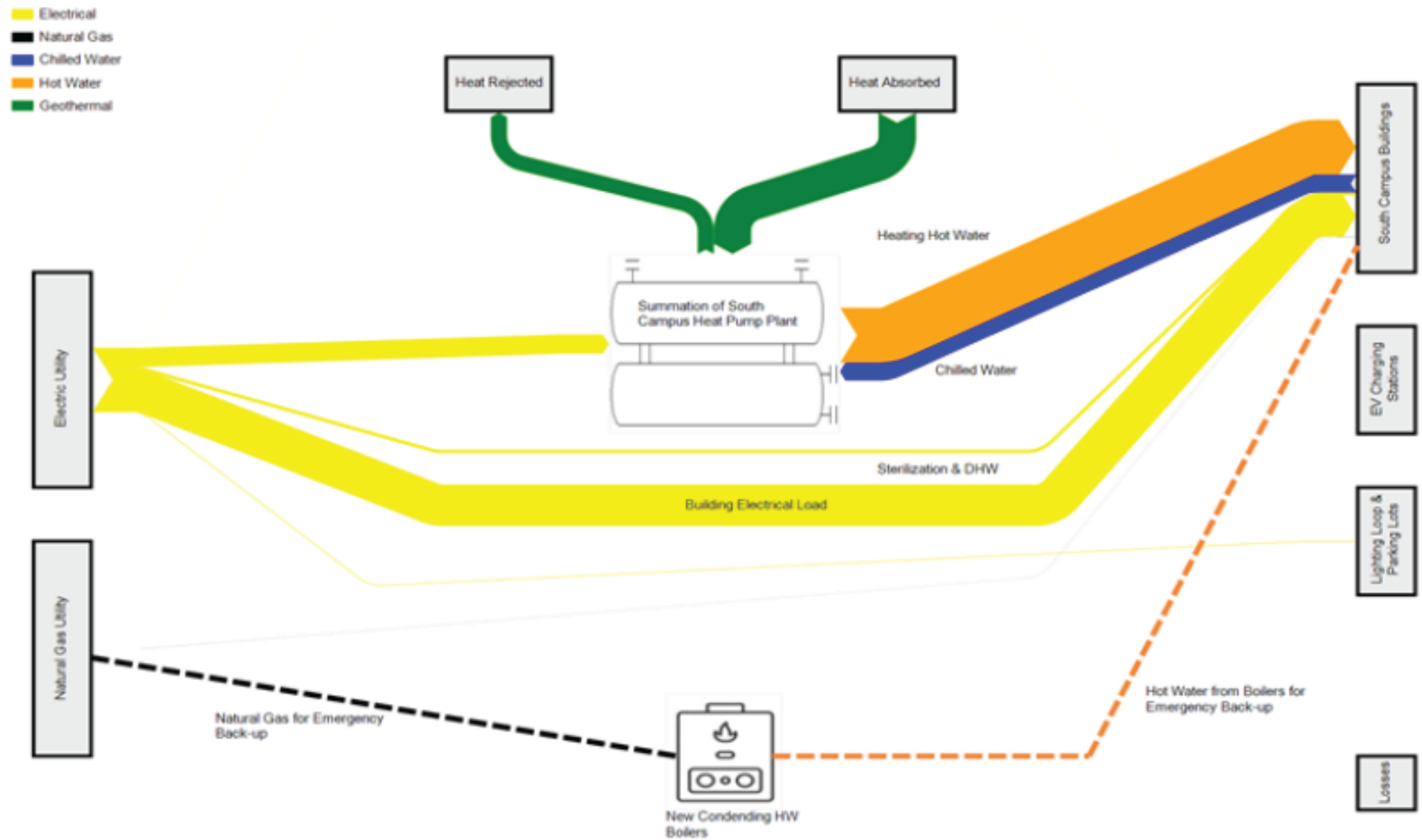
We entered into this Clean Energy Master Plan with the goal of developing a strategy that will:

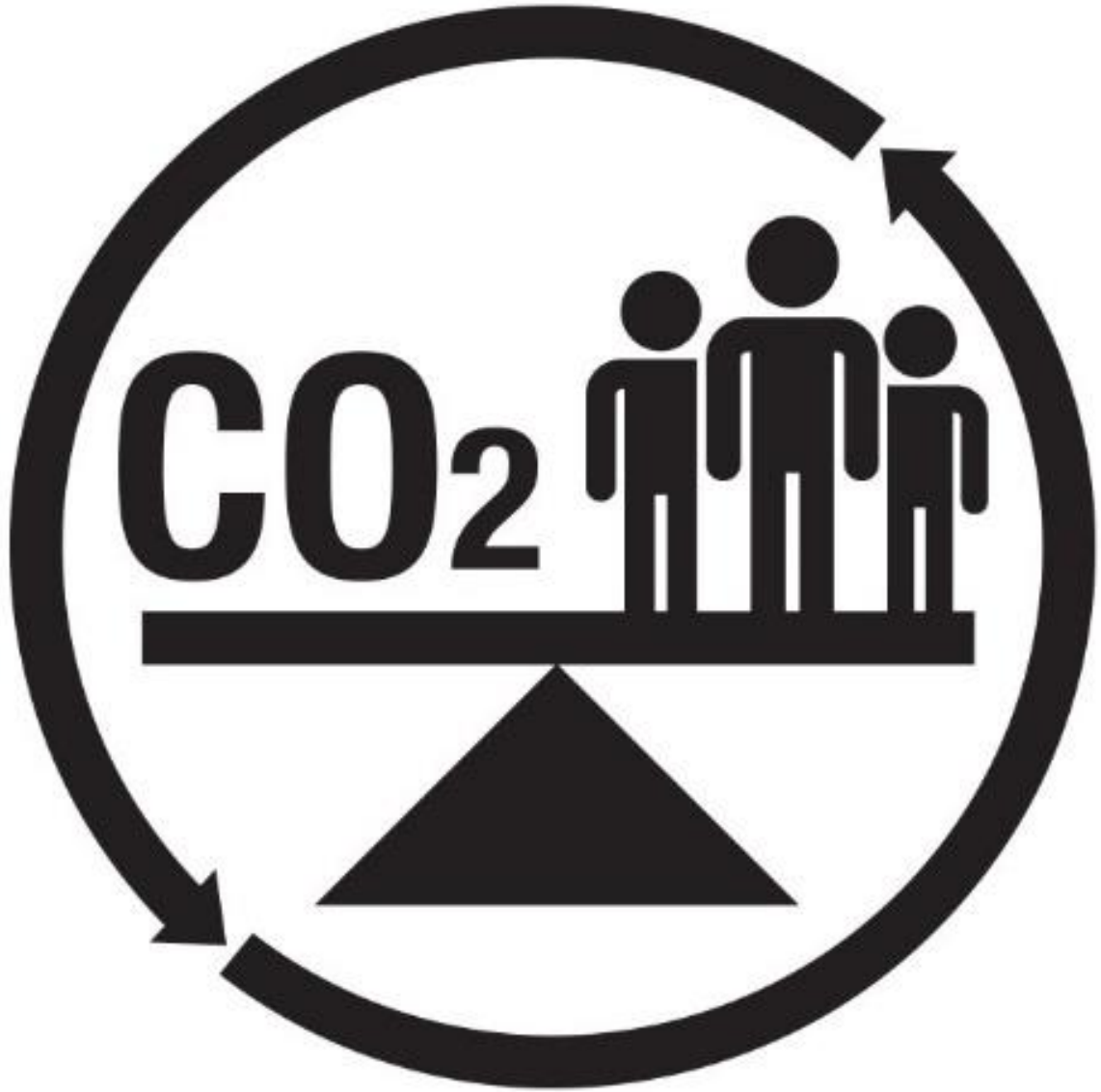
1. Lead to near term energy savings.
2. Provide a solution for electrification of heating systems on the South Campus.
3. Provide a solution for a 30% reduction in energy usage for the South Campus.
4. Provide a solution for a carbon neutral campus.

UB South | Plant [Existing]



UB South | Plant [Proposed]




CO2

The Offset Strategy

1. A certified market purchase aligning with UB values
2. Investing in a localized offset program with community partners
3. A campus/university experiential offset initiative


CO2
$

What is Carbon Pricing?

Carbon pricing is an instrument that captures the external costs of greenhouse gas (GHG) emissions—the costs of emissions that the public pays for, such as damage to crops, health care costs from heat waves and droughts, and loss of property from flooding and sea level rise—and ties them to their sources through a price, usually in the form of a price on the carbon dioxide (CO_2) emitted (World Bank)

Travel


Capital
Construction

Buildings

Commuting

Who | you are the change agents we seek

Sustainability is a Strategy not a Goal

what are the scopes of carbon emissions?

scope 1

PFCS SF6 CH4 CO2 HFCS N2O

GREENHOUSE GAS EMISSIONS

Scope 1 emissions are direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles).

SOURCE: EPA.GOV

SCOPE 1
Direct Emissions from Reporting Company

scope 2

CH4 CO2 PFCS SF6 N2O HFCS

GREENHOUSE GAS EMISSIONS

Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling and are a result of the organization's energy use.

SOURCE: EPA.GOV

SCOPE 2
Indirect Emissions from Upstream Activities

scope 3

CO2 CH4 SF6 PFCS HFCS N2O

GREENHOUSE GAS EMISSIONS

SCOPE 3
Indirect Emissions from

Upstream Activities
Purchased Goods & Services
Capital Goods
Fuel & Energy Related Activities
Transportation & Distribution
Waste Generated in Operations
Business Travel
Employee Commuting
Leased Assets
and...

Downstream Activities
Transportation & Distribution
Processing of Sold Products
Use of Sold Products
End-of-Life Treatment of Sold Products
Leased Assets
Franchises
Investments

Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

SOURCE: EPA.GOV

greenworldwide SHIPPING

Discussion & Questions