



# GREEN JOBS

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STEVE STELZER, AIA, LEED AP, ICC CSP

HOUSTON PERMITTING CENTER

CITY OF HOUSTON GREEN BUILDING RESOURCE CENTER



**WE NEED GREEN JOBS FOR  
SUSTAINABLE DEVELOPMENT.**

**DEVELOPMENT IS MOSTLY:  
*BUSINESS AS USUAL.***

**WHAT DOES SUSTAINABILITY  
MEAN?**

**USE RESOURCES** below a level  
that our planet can provide in perpetuity.

**EMIT WASTES** below a level  
that our planet can safely absorb in perpetuity.

# SUSTAINABILITY PRIMER



## Sustainability Primer

Research project proposals should embody sustainability. The goal of sustainability, derived from the U.S. National Environmental Policy Act of 1969 (NEPA), is to, “create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations.” A sustainable approach is a systems-based approach that seeks to understand the interactions which exist among environmental, social, and economic pillars in an effort to better understand the consequences of our actions. Ideally, research that seeks sustainable solutions to protect the environment *also* strengthens our communities and fosters prosperity.

**Sustainability Criteria** Below are the three pillars of sustainability, each with six broad topics that relate to its respective pillar. A brief explanation and example are provided for each topic. The examples are not intended to be inclusive.

### Environmental

#### Ecosystem Services

Protect, sustain, and restore the health of critical natural habitats and ecosystems

*Example: Innovative nutrient management techniques (Green Infrastructure)*

#### Green Engineering & Chemistry

Design chemical products and processes to: eliminate toxic hazards, reuse or recycle chemicals, and reduce total lifecycle costs.

*Example: Lifecycle Assessments in molecular design*

#### Air Quality

Attain and maintain air-quality standards and reduce the risk from toxic air pollutants

*Example: Investigate potential greenhouse gas emissions reduction strategies*

#### Water Quality

Reduce exposure to contaminants in water systems and infrastructure (including protecting source waters), optimizing aging systems, and next generation treatment technologies & approaches.

*Example: Purpose driven water reuse and innovative treatment technologies*

#### Stressors

Reduce effects by stressors (e.g. pollutants, greenhouse gas emissions, genetically modified organisms) to the ecosystem and vulnerable populations

*Example: Fate of modified nanoparticles in aqueous media*

#### Resource Integrity

Reduce adverse effects by minimizing waste generation to prevent accidental release and future cleanup.

*Example: Innovative technologies and processes to prevent environmental impact*

### Social

#### Environmental Justice

Protect health of communities over-burdened by pollution by empowering them to take action to improve their health and environment

*Example: Establish partnerships with local, state, tribal, and Federal organizations to achieve healthy and sustainable communities*

#### Human Health

Protect, sustain, and improve human health

*Example: Parameterize model which predicts developmental toxicology*

#### Participation

Use open and transparent processes that engage relevant stakeholders

*Example: Develop database of reduced-risk pesticides for commonly used products, create greater public access and understanding about sustainability*

#### Education

Enhance the education about sustainability of the general public, stakeholders, and potentially affected groups.

*Example: Provide opportunities for students and communities to learn about sustainability*

#### Resource Security

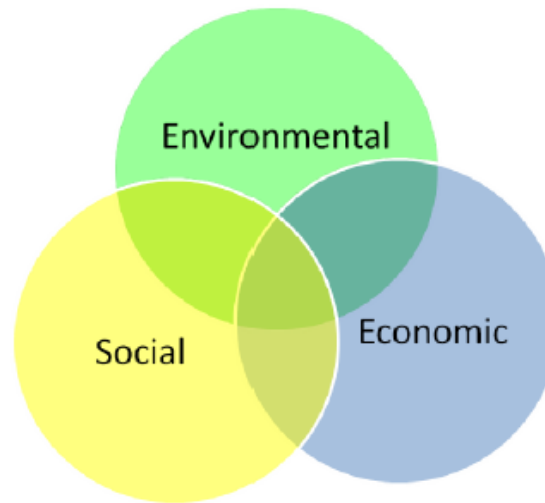
Protect, maintain, and restore access to basic resources (e.g. water, food, land, and energy) for current and future generations

*Example: Study impact of dispersants/oil combination on natural waterways*

#### Sustainable Communities

Promote the development, planning, building, or modification of communities to promote sustainable living

*Example: Landscape with native plant species, green buildings*



### Economic

#### Jobs

Strengthen and maintain current and future jobs

*Example: Promote jobs through introduction of innovative technologies and practices that provide multiple benefits to communities and the environment*

#### Incentives

Promote incentives that work with human nature to encourage sustainable practices.

*Example: Collaborative urban stormwater management approaches—Chesapeake Bay Partnership*

#### Supply and Demand

Promote fully informed accounting and market practices to promote environmental health and social prosperity.

*Example: Full lifecycle cost and benefit accounting techniques*

#### Natural Resource Accounting

Improve understanding and quantification of ecosystem services in cost benefit analysis.

*Example: Sustainability Assessments*

#### Costs

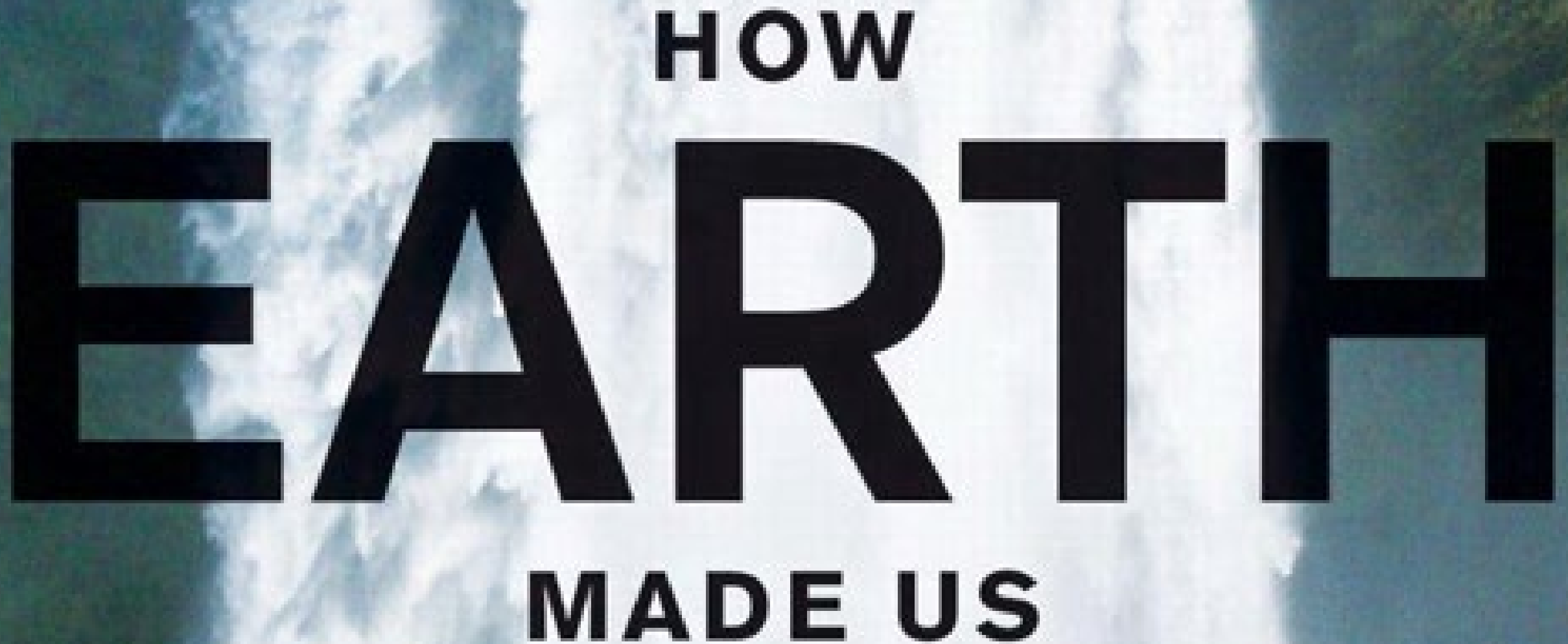
Positively impact costs of processes, services, and products throughout the full lifecycle

*Example: Strive to develop waste-free processes—eliminating need for regulation, treatment, and disposal costs throughout systems*

#### Prices

Promote cost structures that reduce risk and premium for new technologies.

*Example: Speed innovative technologies and approaches to the market through demonstration and testing with community partners*

An aerial photograph of a wide waterfall cascading down a rocky ledge. The water is white and frothy, contrasting with the dark, mossy rocks. The background shows a lush green forest. Large, bold, black text is overlaid on the image.

**HOW**

**EARTH**

**MADE US**

**WE ARE FORMULATED  
TO LIVE ON EARTH,**

**WHICH WE ARE DEGRADING.**

**MAYBE WE SHOULD STOP THAT.**



**More Plastic Than Fish**



**THAT'S NOT SUSTAINABLE.**



**THAT'S NOT SUSTAINABLE**



The background of the slide features two identical, semi-transparent images of the Earth, positioned side-by-side. The Earths are shown from a perspective that highlights the continents and oceans, with a blue tint overlaid on the entire image. The text is centered over the two Earths.

**WE NEED 1.75 PLANETS** to support our consumption now. *That's not sustainable.*

We toxify the air & water with our waste. *That's not sustainable.*

The background of the slide features two overlapping globes of the Earth, showing continents and oceans, set against a dark blue gradient. The text is overlaid on this background.

**LET'S REPHRASE THIS:**

**WE NEED 1.75 PLANETS** to support  
extraction & manufacturing industries.  
*That's not sustainable.*

**Manufacturers** toxify the air & water with their  
waste. *That's not sustainable.*



**WHY DO WE KEEP DOING THIS?**

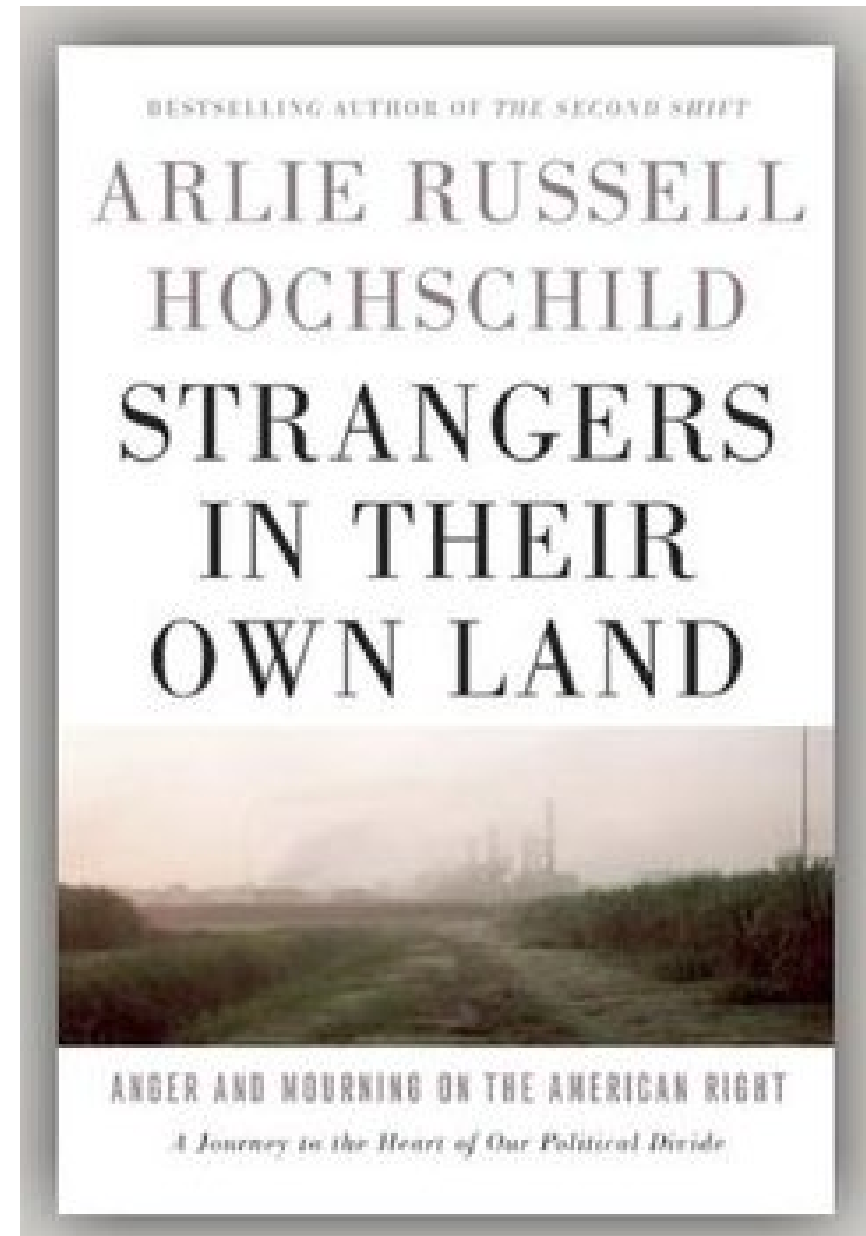


**WHY DO WE KEEP  
DOING THIS?**

**BECAUSE OUR GOVERNMENT WORKS FOR  
INDUSTRY, AND THIS IS CHEAPER FOR THEM.**

**AND BECAUSE WE WORK FOR INDUSTRY AND  
WANT TO KEEP OUR JOBS,  
WE DO WHAT INDUSTRY WANTS.**

**AND BECAUSE WE  
WORK FOR INDUSTRY  
AND WANT TO KEEP  
OUR JOBS,  
WE DO WHAT  
INDUSTRY WANTS.**





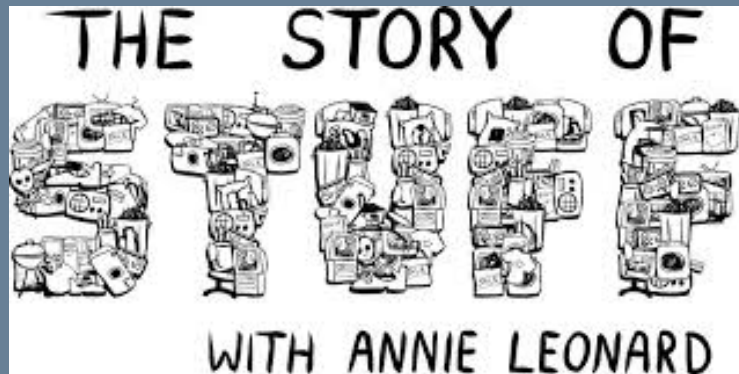
**WHY DO WE KEEP DOING THIS?**

**HOW ABOUT: TO GET TO OUR JOBS?**



# THE EARTH IS NOT HEALTHY

What if we quit trashing it so much?





**BUT WHAT WE REALLY WANT**

**Is for our lifestyle to JUST BE sustainable.**

**But we're going to have to face it, we're**



# ADDICTED TO STUFF

# AND SOME OF US WANT OUR JOBS TO BE **GREEN** JOBS.

This damage is being done by:

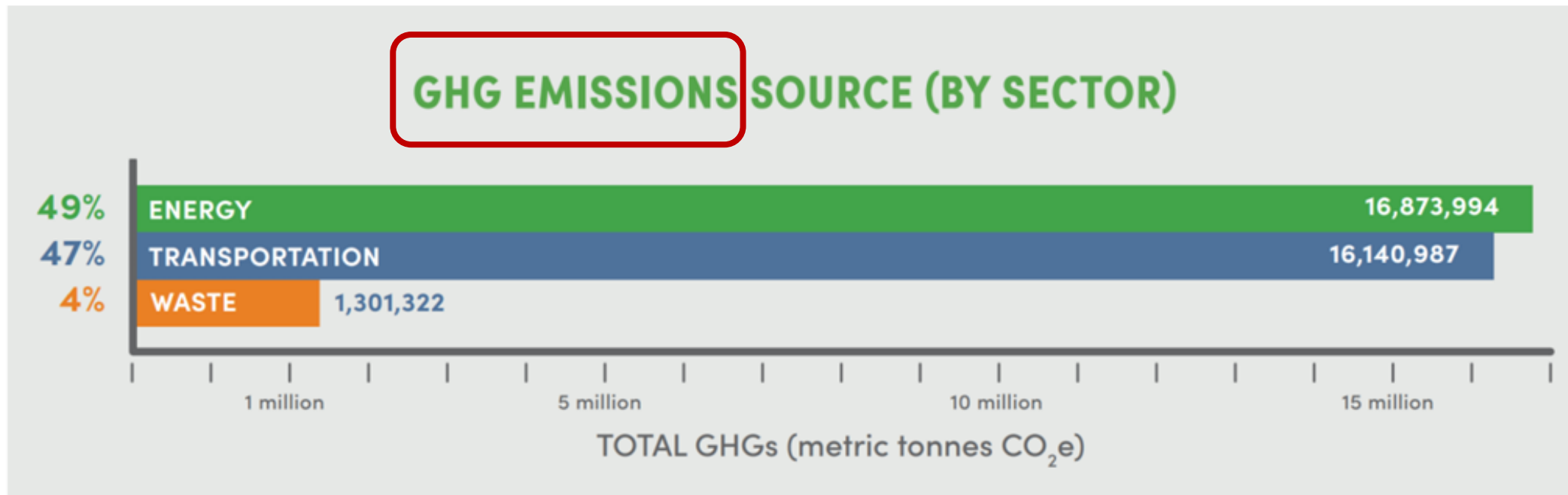
**people working at their jobs.**




## What is the Climate Action Plan?

The Houston Climate Action Plan (HCAP) establishes how the city will achieve carbon neutrality by 2050 and remain consistent with the 2015 Paris Climate Accords. The objective is to fulfill Houston's role in climate change mitigation and build the city's resilience to climate disasters through internal city policies and community organizing efforts.

## Major Plan Components



# WHAT WE DO TO REDUCE GHG'S

TRANSPORTATION		TARGET	
	Goal 1: Shift regional fleet to electric and low-emission vehicles.		Convert non-emergency, light-duty municipal fleet to 100% EV by 2030.
	Goal 2: Reduce vehicle miles traveled (VMT) per capita.		Reduce VMT per capita 20% by 2050.
	Goal 3: Provide equitable and safe mobility choices.		Zero traffic-related fatalities and serious injuries on Houston streets by 2030. 500 miles of high-comfort bike lanes by 2025.
ENERGY TRANSITION		TARGET	
	Goal 1: Grow Houston's investment in renewable and resilient energy.		5 million MWh local solar per year by 2050.
	Goal 2: Make Houston the leader in carbon capture technology and energy innovation.		Attract or incubate 50 Energy 2.0 companies in Greater Houston by 2025.
	Goal 3: Restore, protect, and enhance Houston's natural ability to capture and store carbon.		4.6 million new native trees planted by 2030.
BUILDING OPTIMIZATION		TARGET	
	Goal 1: Reduce building energy use and maximize savings.		Adopt the 2021 ICC model building code by 2025 with a minimum 5-year update.
	Goal 2: Expand investment in energy efficiency.		Double the current number of PACE projects by 2025.
	Goal 3: Invest in skilled local jobs to optimize building operations.		70% of non-residential buildings operated by trained building operator by 2030.
MATERIALS MANAGEMENT		TARGET	
	Goal 1: Reduce waste and transform the circular economy.		Reduce residential waste 50% by 2040.
	Goal 2: Optimize waste operations and create power from waste.		Convert municipal solid waste fleet to low-emission vehicles by 2030.
	Goal 3: Ensure safe and cost-effective long-term disposal capacity.		Adopt Long Range Solid Waste Plan in 2020.

WORLD & NATION

# Global carbon emissions dropped a record 7% due to COVID-19. Don't count on it to last



CORONAVIRUS AND PANDEMIC >

Orange County healthcare system  
COVID-19 hospitalizations hit rec

ICU capacity explained: What to l  
key coronavirus metric in Californ

Congress passes one-week fundi  
government shutdown

Huntington Harbour Boat Parade  
traveling to see it is discouraged

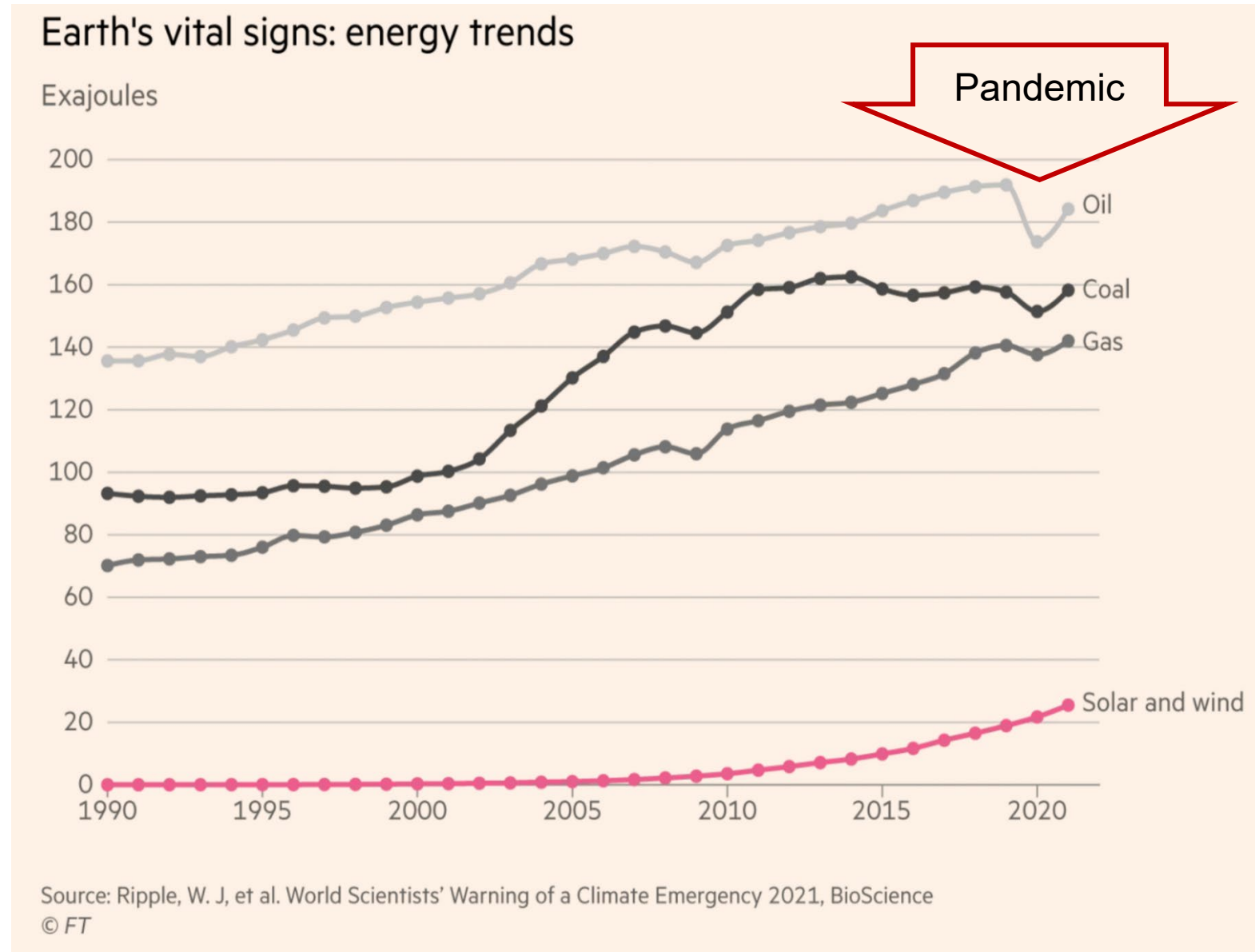
Guy Fieri and many others hate c  
restaurant ban. Here's why some  
essential

By TONY BARBOZA | STAFF WRITER

DEC. 10, 2020 | 5:10 PM

**SO IT TAKES A  
PANDEMIC TO  
REDUCE  
EMISSIONS.**

**NOBODY LIKES A  
PANDEMIC AND  
NOBODY LIKES TO  
REDUCE  
EMISSIONS.**



# Report: Texas Isn't Prepared For Climate Change's Impact

A new report looks at how states are preparing to deal with public health issues that are worsened by climate change.



David J. Phillip/AP

In this Aug. 29, 2017 photo, water from Addicks Reservoir flows into neighborhoods from floodwaters brought on by Tropical Storm Harvey in Houston. Repeated flooding events can lead to negative health impacts, like mental problems, gastrointestinal issues, drowning and other injuries.

"Texas can have a little bit of everything when it comes to weather," she said. "You have coastlines, so you have to deal with sea-level rise. You can have wildfires, you can have flooding — the geography of Texas leads to a lot of climate threats."

Though Texas faces a wide array of climate threats, the report identified drought and severe storms as the two biggest. The report noted that Harris County had one 500-year rainfall event and two 100-year events in a span of just three years, making it hard for governments and communities to recover in between.

<https://www.houstonpublicmedia.org/articles/news/energy-environment/2020/12/09/387491/report-texas-isnt-prepared-for-climate-changes-impact/>



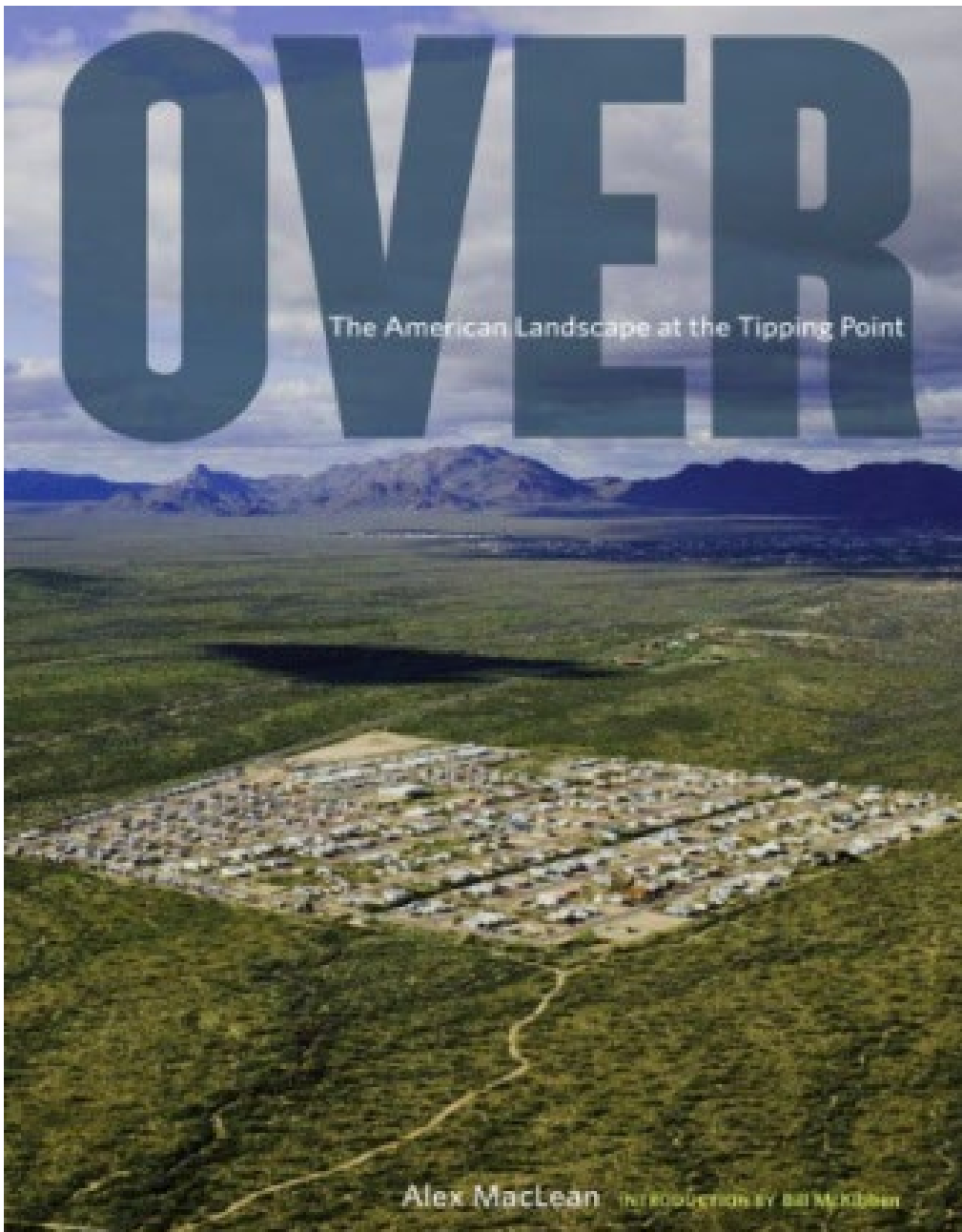


**SO, THE PLANET IS NOT HEALTHY,  
THE ECONOMY IS HAVING A MOMENT,  
AND THE PEOPLE ARE NOT  
ALL MOVING IN UNISON TO FIX IT.**

Any thoughts?

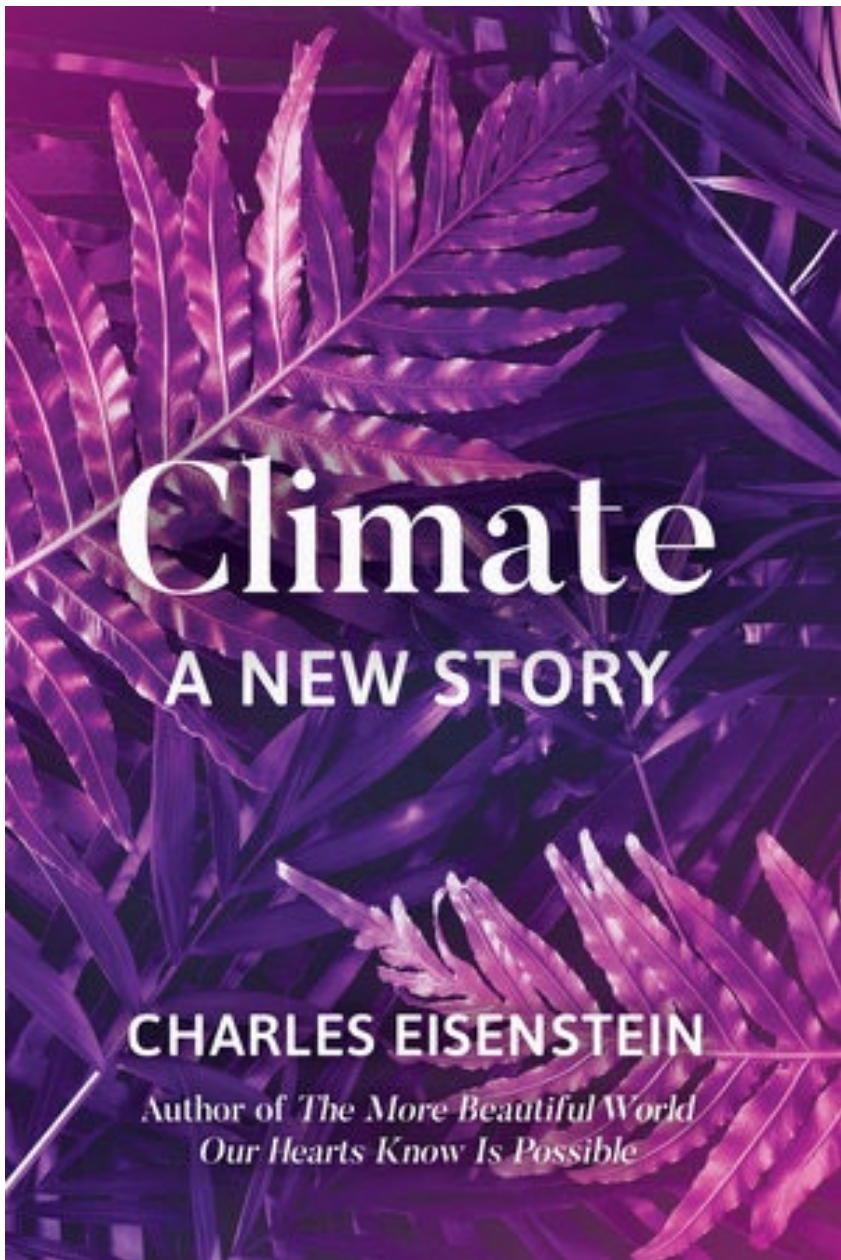
# **AND THIS IS HAPPENING MOSTLY AT WORK**

Hence the Green Jobs viewpoint.



**SERIOUSLY, THE DAMAGE  
WAS DONE ALREADY  
WHEN YOU BOUGHT YOUR  
HOUSE.**

**THERE'S A LOT OF GUILT  
TRIPPING ABOUT YOU  
AND WHAT YOU SHOULD  
DO.**



Ecological healing therefore requires our society to look beneath its consumptive symptoms and reorient toward qualitative development. To do so requires significant reprogramming, since our guiding narratives, from economic to scientific, embody quantitative thinking.

**Charles Eisenstein**  
*Climate--A New Story*

# **OK ALREADY, WHAT IS A GREEN JOB?**

Well, let's google it...

## Here are the 10 most in-demand jobs with an environmental focus and how much they pay:

- Environmental specialist. Average salary: \$63,915. ...
- Civil engineer. Average salary: \$83,970. ...
- Environmental health and safety specialist. ...
- Forester. ...
- Environmental technician. ...
- Solar photovoltaic installer. ...
- Arborist. ...
- Environmental manager.

**8 OF THE TOP TEN AT  
LEAST.  
WHO ARE THESE PEOPLE  
WHO POST THESE THINGS  
ANYWAY?**

[More items...](#) • Oct 19, 2021

# TOP 10 GREEN JOBS

## CHIEF SUSTAINABILITY OFFICER

Senior member of an organisation that is able to provide high-level, strategic, expert management around environmental, social and economic impacts and actions.

## RENEWABLE ENERGY EXPERTS

Those who can engineer, advise and manage the way renewable energy systems are set up and operated.

## SUSTAINABLE DESIGN

Can design closed-loop, resource-reduced products that fit within a circular economy, understand full life cycles, closed-loop business strategies, have a

## SUSTAINABLE INVESTMENT

## SERVICE SYSTEM CUSTOMER SUPPORT

Employees able to provide customer service for take back, return and closed-loop systems as both B2C and B2B.

Managers who can create and manage the end-to-end integrated systems that are part of the circular economy.

## REVERSE LOGISTICS MANAGERS

Know the full life cycle, manage how products a company produces move through the economy, from production to use and then recapture. Can identify and fix supply chain gaps, support design teams to create closed loop-products and ensure materials are being used to their maximum once being recaptured.

## PRODUCT LIFECYCLE MANAGERS

Are able to assess, monitor and manage the operational impacts of a company

## IMPACT ASSESSMENT

# WHAT IS A GREEN JOB? FROM THE BLOGOSPHERE:

## IMPACT ADVISORS

Advanced skills in impact assessment, circular economy principles, green offices, environmental management and general expertise around sustainability methods and initiatives who can advise at all levels of industry to support in decision making and implementation.

## GREEN ADVISORS

**CHIEF  
SUSTAINABILITY  
OFFICER**

Senior member of an organisation that is able to provide high-level, strategic, expert management around environmental, social and economic impacts and actions.

**RENEWABLE  
ENERGY  
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Those who can engineer, advise and manage the way renewable energy systems are set up and operated.



## **SUSTAINABLE DESIGNERS**

Can design closed-loop, resource-reduced products that fit within a circular economy, understand full life cycles, closed-loop business strategies, have a keen sense of customer satisfaction and design for behaviour change.

## **SUSTAINABLE INVESTMENT ADVISORS**

People providing expert financial advice from changing markets in relation to environment, sustainability and governance (ESG) reporting and investments.



**SERVICE SYSTEM  
CUSTOMER  
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Employees able to provide customer service for take back, return and closed-loop systems as both B2C and B2B.

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**PRODUCT  
LIFECYCLE  
MANAGERS**

Are able to assess, monitor and manage the operational impacts of a company and report on this publicly and for regulatory requirements.

**IMPACT  
ASSESSMENT  
OFFICERS**

Can grow or source low-impact food, provide it in package-free systems and ensure that the carbon impact of catering and food delivery is low or zero.

**LOW IMPACT  
FOOD ADVISORS**

**LEED  
GREEN  
ASSOCIATE**

**LEED  
AP**

**BD+C**

**LEED  
AP**

**ID+C**

**LEED  
AP**

**O+M**

**LEED  
AP**

**ND**

**LEED  
AP**

**HOMES**

**NOT JOBS, BUT COULD HELP...**

**BECOMING A LEED AP MIGHT HELP  
YOU GET A GREEN JOB....  
HEY, IF YOU ARE A LEED GA OR AP,  
PUT THAT IN THE CHAT...**



## Green Jobs

### The BLS Green Jobs Definition

BLS has developed this definition of green jobs for use in data collection. Green jobs are either:

- A. Jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources.
- B. Jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources.



1. *Energy from renewable sources.* Electricity, heat, or fuel generated from renewable sources. These energy sources include wind, biomass, geothermal, solar, ocean, hydropower, and landfill gas and municipal solid waste.
2. *Energy efficiency.* Products and services that improve energy efficiency. Included in this group are energy-efficient equipment, appliances, buildings, and vehicles, as well as products and services that improve the energy efficiency of buildings and the efficiency of energy storage and distribution, such as Smart Grid technologies.
3. *Pollution reduction and removal, greenhouse gas reduction, and recycling and reuse.* These are products and services that:
  - Reduce or eliminate the creation or release of pollutants or toxic compounds, or remove pollutants or hazardous waste from the environment.
  - Reduce greenhouse gas emissions through methods other than renewable energy generation and energy efficiency, such as electricity generated from nuclear sources.
  - Reduce or eliminate the creation of waste materials; collect, reuse, remanufacture, recycle, or compost waste materials or wastewater.





4. *Natural resources conservation.* Products and services that conserve natural resources. Included in this group are products and services related to organic agriculture and sustainable forestry; land management; soil, water, or wildlife conservation; and stormwater management.
5. *Environmental compliance, education and training, and public awareness.* These are products and services that:
  - Enforce environmental regulations.
  - Provide education and training related to green technologies and practices.
  - Increase public awareness of environmental issues.

**NEEDLESS TO SAY, I HAVE A GREEN JOB.**



B. *Jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources.* These workers research, develop, or use technologies and practices to lessen the environmental impact of their establishment, or train the establishment's workers or contractors in these technologies and practices. This definition will be used in the BLS survey of establishments across all industries to identify jobs related to green technologies and practices used within the establishment. These technologies and practices fall into one or more of four groups:

1. *Energy from renewable sources.* Generating electricity, heat, or fuel from renewable sources primarily for use within the establishment. These energy sources include wind, biomass, geothermal, solar, ocean, hydropower, and landfill gas and municipal solid waste.
2. *Energy efficiency.* Using technologies and practices to improve energy efficiency within the establishment. Included in this group is cogeneration (combined heat and power).



## Green Jobs

3. *Pollution reduction and removal, greenhouse gas reduction, and recycling and reuse.* Using technologies and practices within the establishment to:
  - Reduce or eliminate the creation or release of pollutants or toxic compounds, or remove pollutants or hazardous waste from the environment.
  - Reduce greenhouse gas emissions through methods other than renewable energy generation and energy efficiency.
  - Reduce or eliminate the creation of waste materials; collect, reuse, remanufacture, recycle, or compost waste materials or wastewater.
4. *Natural resources conservation.* Using technologies and practices within the establishment to conserve natural resources. Included in this group are technologies and practices related to organic agriculture and sustainable forestry; land management; soil, water, or wildlife conservation; and stormwater management.

**Last Modified Date:** January 25, 2013

**LET'S LOOK FOR SOME GREEN JOBS  
ON THE INTERNET**

# New Grad Environmental Planner I – December 2021 & May 2022



HNTB  
Houston, TX

[Apply on LinkedIn](#)

 Full-time

## Job highlights

Identified by Google from the original job post

## Qualifications

- Bachelor's Degree in Landscape Architecture, Planning, Environmental Planning, Urban Design, Architecture, Engineering or related field
- In compliance with the Immigration Reform and Control Act of 1986, we will hire only U.S. citizens and aliens lawfully authorized to work in the United States (if the position is or will be one which is subject to U.S. law)

## Responsibilities

- Assists with research, development and documentation of projects, including preparation of technical documents supporting the National Environmental Policy Act (NEPA)
- Assists with analysis of environmental impacts as assigned

The [NOAA](#) Office of National Marine Sanctuaries is accepting applications for a Program Analyst position based in Galveson.


The Program Analyst will lead and coordinate resource management and restoration

projects related to the Deepwater Horizon oil spill. Among other responsibilities, the Program Analyst will conduct analyses of strategic short and long-term resourcing needs related to restoration projects, and evaluate programs, metrics, and methodologies, and their relevance to Department of Commerce/National Oceanic and Atmospheric Administration goals and missions. Applications will be accepted until Dec. 6, 2021. For the full job description and application instructions, visit [usajobs.gov](https://usajobs.gov).

# NOAA seeks Program Analyst

Posted on [November 30, 2021](#) by [Ken Fountain](#)



 <https://www.ziprecruiter.com> › Jobs

## \$35k-\$123k Green Jobs in Houston, TX | ZipRecruiter

1,310 Green Jobs in Houston, TX · SALES REPRESENTATIVE · Sales Rep - BMF · Customer Service F  
Customer Service Rep(06789) - 1721 Spring Green #150.

 <https://www.linkedin.com> › jobs › g...

## 64,000+ Green jobs in United States (1,100 new) - LinkedIn

64,000+ Green Jobs in United States (1,100 new) · Energy Analyst · Managing Director · Sustainability  
Analyst · Energy Engineer · Business Development ...



 <https://www.hereinhouston.org> › car...

## Student Internships & Careers - HERE in Houston

Part of a series on Green Jobs in Houston. Laura is an arborist for Harris County Precinct 4 and the Le  
Project. Learn more at [hereinhouston.org](https://www.hereinhouston.org).



## Assistant Kitchen Manager

HS Green

Houston, TX (On-site)

Promoted · **2 applicants** · Apply easily

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## Volunteer: Facilitated Strategy Session for Green Building United

Catchafire

Houston, TX (Remote)

Promoted

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## Seasonal Sales Associate-GREEN TREE SHOPPING CENTER

Bath & Body Works

Houston, TX (On-site)

Actively recruiting

Promoted · **1 applicant**

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## Estimator

The Green Recruitment Company

Houston, TX (On-site)

\$150K/yr - \$160K/yr

Actively recruiting

Promoted · **4 applicants** · Apply easily

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**SO, GREEN JOBS CAN BE WITH:  
FIRMS WITH GREEN IN THEIR NAME,  
OIL AND MINING COMPANIES,  
FOR ENGINEERS AND PHDS,  
AND KITCHEN MANAGERS**

Any thoughts?

**WHAT IS STEVE'S IDEA OF THE GREENEST AND MOST RESILIENT JOB OUT THERE?**

**A CSA JOB. COMMUNITY SUPPORTED AGRICULTURE.**

**WE DON'T KNOW HOW LONG CALIFORNIA CAN SUPPLY OUR GROCERY STORES.**

**AGRIBUSINESS AND THE BEEF INDUSTRY ARE KILLING THE PLANET, FYI.**

**WHAT IS YOUR IDEA OF THE  
GREENEST OF JOBS?**

**PUT THAT IN THE CHAT...**



# Environmental Headlines for the Houston Region: February 17, 2022

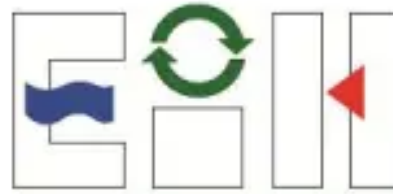
Posted on [February 17, 2022](#) by [Carlotta Robson](#)

CONNED



Houston Zoo seeks Teen Programs Specialist

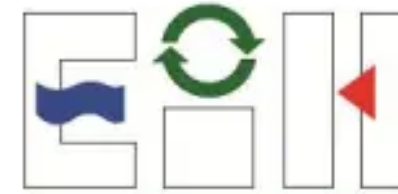
March 15, 2022



Environmental Institute of Houston

Environmental Institute of Houston seeks Lentic Ecology Field Technicians/Interns

March 15, 2022



Environmental Institute of Houston

Environmental Institute of Houston seeks Equipment Maintenance Technician

March 14, 2022



Delores Fenwick Nature Center seeks Summer Camp Coordinator and Counselors

March 14, 2022



Keep Pearland Beautiful seeks Recycling Attendant

March 8, 2022



Houston Arboretum & Nature Center seeks Forestry Natural Resource Specialist

March 7, 2022

## Green Jobs

# Green Jobs

TWRC Wildlife Center seeks  
Animal Care Program

Supervisors

February 14, 2022



Artist Boat seeks Executive  
Assistant

Turtle Island Restoration  
Network seeks  
Development Manager  
February 8, 2022



Nature's Way Resources  
seeks Sales Associates  
February 8, 2022



American Bird Conservancy  
seeks Rangeland  
Monitoring Technicians  
February 8, 2022



Turtle Island Restoration  
Network seeks Membership  
Specialist

# Green Jobs



Houston Parks and Recreation Department seeks Natural Resources Technicians

February 7, 2022



HARC seeks Grants and Contracts Specialist

February 2, 2022



Galveston Bay Foundation seeks Governmental Affairs Manager

February 7, 2022



Galveston Bay Foundation seeks part-time Environmental Educators

February 7, 2022



TEXAS WATER FOUNDATION

Texas Water Foundation seeks Policy Program Manager

February 2, 2022



Public Citizen seeks Press Officer

January 26, 2022

# Preparing the Workforce for a Clean Energy Economy: LEED Cities Advancing a Just Transition

# FREE WEBINAR FROM USGBC



Need help? [Access Education FAQs](#)

1562 completions

Trouble viewing course? [Download the video](#)

GBCI: 0920023500

Local governments are connecting their climate and sustainability goals with programs to develop and train the workforce and build career pathways. These efforts are also engaging workers from low income communities and communities of color.



Program: LEED for Cities and Communities, LEED v4.1

1 <sup>C</sup> <sub>E</sub>

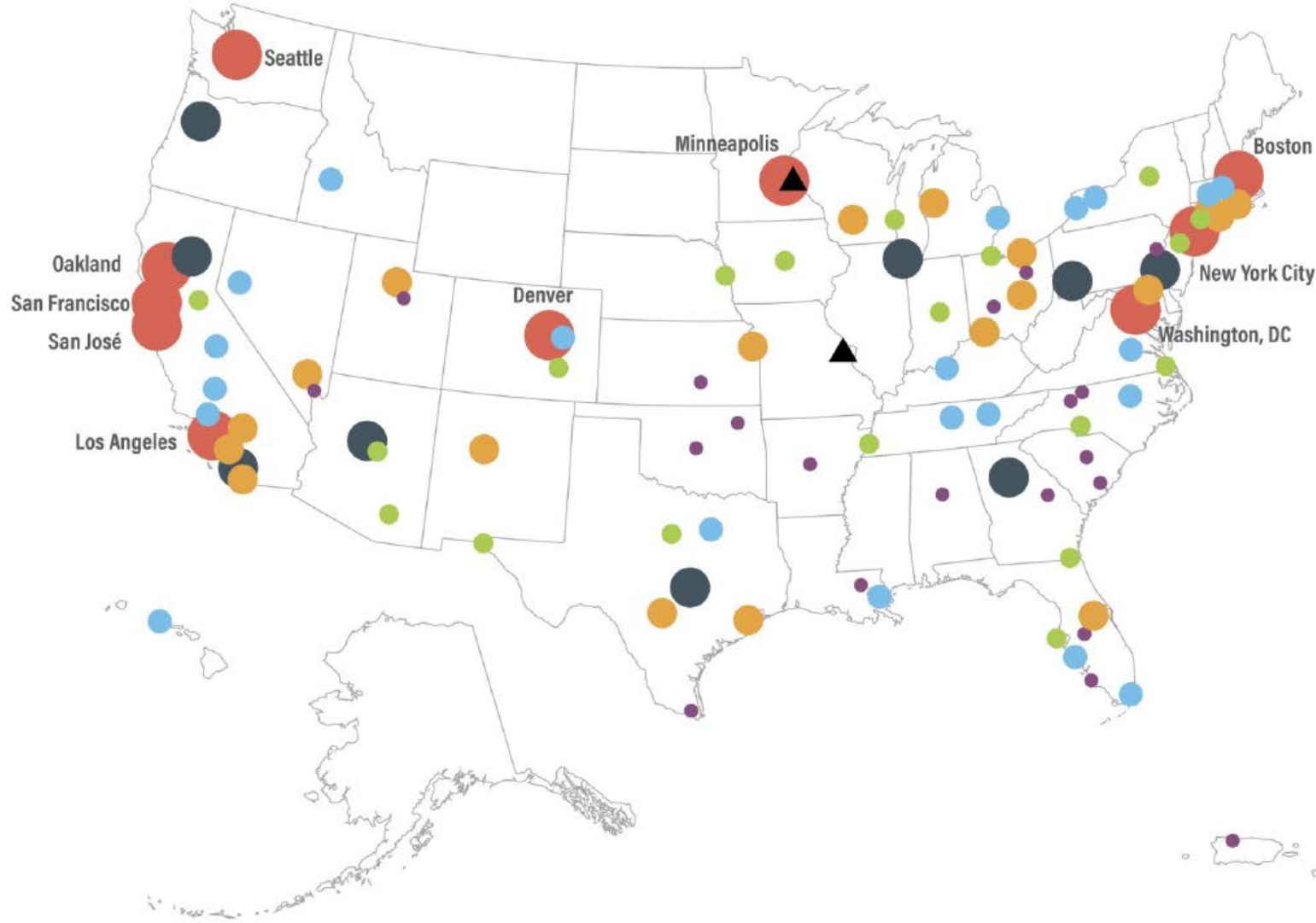
TAKE QUIZ

## About

Local governments are connecting their climate and sustainability goals with programs to develop and train the workforce and build career pathways. These efforts are also engaging workers from low income communities and communities of color. From St. Louis' green jobs workforce development pilot program to Charlotte's RENEW program to Denver's Green Jobs strategy, we will hear directly from local government leaders and their partners. How were their programs initiated and funded? What outcomes do they seek to improve? How are they engaging the community in the work? And what does a just transition to a climate resilient, sustainable city look like?



# 2020 City Clean Energy Scorecard



● 1-10      ● 11-20

- 1. New York, NY
- 2. Boston, MA
- 2. Seattle, WA
- 4. Minneapolis, MN
- 4. San Francisco, CA
- 6. Washington, DC
- 7. Denver, CO
- 8. Los Angeles, CA
- 9. San José, CA
- 10. Oakland, CA
- 11. Portland, OR
- 12. Austin, TX
- 13. Chicago, IL
- 14. Atlanta, GA
- 15. Philadelphia, PA
- 16. St. Paul, MN
- 17. Sacramento, CA
- 18. San Diego, CA
- 19. Phoenix, AZ
- 19. Pittsburgh, PA

▲ Most Improved Cities:  
St. Paul, St. Louis

● 21-40

- 21. Orlando, FL
- 22. Chula Vista, CA
- 23. Hartford, CT
- 23. Providence, RI
- 25. Kansas City, MO
- 26. Long Beach, CA
- 27. Salt Lake City, UT
- 28. St. Louis, MO
- 29. Cleveland, OH
- 29. Columbus, OH
- 31. San Antonio, TX
- 32. Baltimore, MD
- 33. Grand Rapids, MI
- 34. Houston, TX
- 34. Riverside, CA
- 36. Cincinnati, OH
- 36. Las Vegas, NV
- 36. Milwaukee, WI
- 36. New Haven, CT
- 40. Albuquerque, NM

● 41-60

- 41. Honolulu, HI
- 42. Boise, ID
- 43. Aurora, CO
- 43. Buffalo, NY
- 43. Richmond, VA
- 43. Rochester, NY
- 43. Springfield, MA
- 48. Dallas, TX
- 48. Louisville, KY
- 50. Worcester, MA
- 51. Knoxville, TN
- 51. Miami, FL
- 51. New Orleans, LA
- 51. St. Petersburg, FL
- 55. Detroit, MI
- 55. Oxnard, CA
- 55. Raleigh, NC
- 58. Nashville, TN
- 58. Reno, NV
- 60. Bakersfield, CA
- 60. Fresno, CA

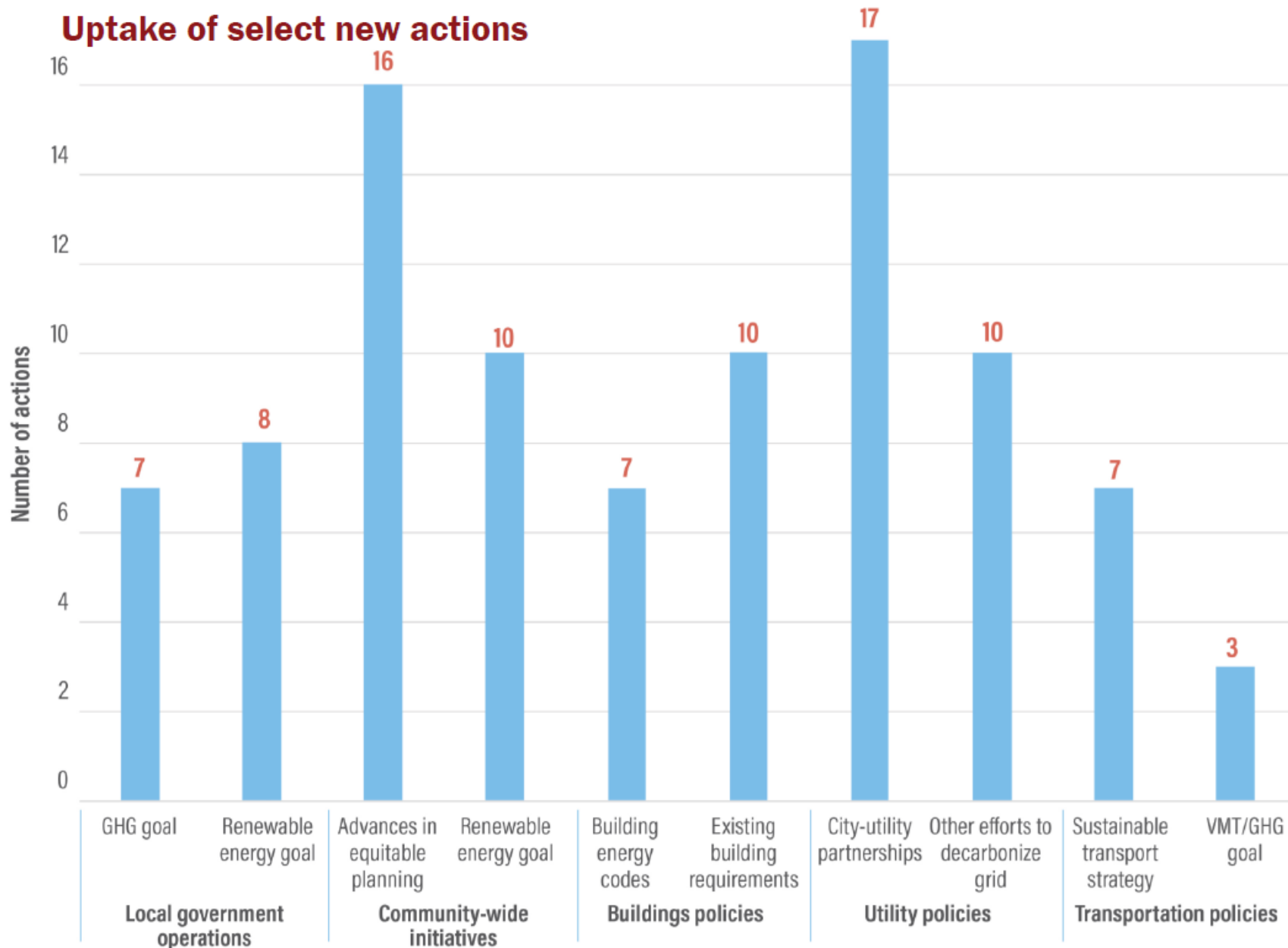
● 61-80

- 62. Des Moines, IA
- 62. Indianapolis, IN
- 64. Madison, WI
- 65. Charlotte, NC
- 66. Fort Worth, TX
- 66. Stockton, CA
- 68. Bridgeport, CT
- 68. Tucson, AZ
- 70. Memphis, TN
- 70. Syracuse, NY
- 72. Colorado Springs, CO
- 72. Virginia Beach, VA
- 74. Jacksonville, FL
- 75. Tampa, FL
- 76. Mesa, AZ
- 76. Newark, NJ
- 78. Omaha, NE
- 79. Toledo, OH
- 80. El Paso, TX

● 81-100

- 81. Dayton, OH
- 82. Lakeland, FL
- 83. Akron, OH
- 83. Winston-Salem, NC
- 85. Tulsa, OK
- 86. Allentown, PA
- 86. Henderson, NV
- 88. Birmingham, AL
- 89. Charleston, SC
- 89. Greensboro, NC
- 91. Columbia, SC
- 91. Little Rock, AR
- 93. Cape Coral, FL
- 93. Provo, UT
- 95. McAllen, TX
- 96. San Juan, PR
- 97. Baton Rouge, LA
- 97. Oklahoma City, OK
- 99. Wichita, KS
- 100. Augusta, GA

## Uptake of select new actions



## Cities continue to pursue new initiatives

Cities took more than **160 new actions** to advance energy efficiency or renewable energy, or to integrate equity into policies and programs between April 2019 and May 2020

# 5 CATEGORIES

CITY OF ST. LOUIS AMERICAN CITIES CLIMATE CHALLENGE WORK  
2019-2021

Building Energy Efficiency

- Develop a Building Energy Performance Standard "BEPS" Ordinance for buildings 10,000 square feet or larger
- BEPS oversight board implementation program
- Building performance audits
- Outreach / enforce Building Energy Standards "Benchmarking" Ordinance

Renewable Energy

- Evaluate municipal options for renewable energy procurement and on-site solar generation
- Develop a Solar Readiness Ordinance for new construction projects that are 5 stories or lower
- Launch a solar workforce development pilot to better promote diversity, equity and inclusion in the regional green economy

Low-Carbon Transportation

- Prioritize municipal purchases of Electric Vehicles (EVs) & charging stations using VW Trust Funds
- Issue a clean vehicle purchasing strategy for municipal fleet
- Develop an EV Ordinance
- Conduct an EV pilot that centers equity considerations
- Map a network of calm streets corridors that improves cycling & mobility

Launch a solar workforce development pilot to better promote diversity, equity and inclusion in the regional green economy

American Cities  
Climate Challenge

February 2021



# Elements Recommended for the St. Louis Pilot



ARE YOU INTERESTED IN A GOOD-PAYING "GREEN JOB" OR PURSUING A CAREER IN THE ELECTRICAL TRADES?

## PAID TRAINING: SOLAR PANEL INSTALLATION

FALL 2020 | ST. LOUIS

APPLY TODAY TO JOIN  
OUR PILOT COHORT

JOIN US AS WE PROMOTE EQUITY  
IN THE GREEN JOBS WORKFORCE  
OF ST. LOUIS CITY

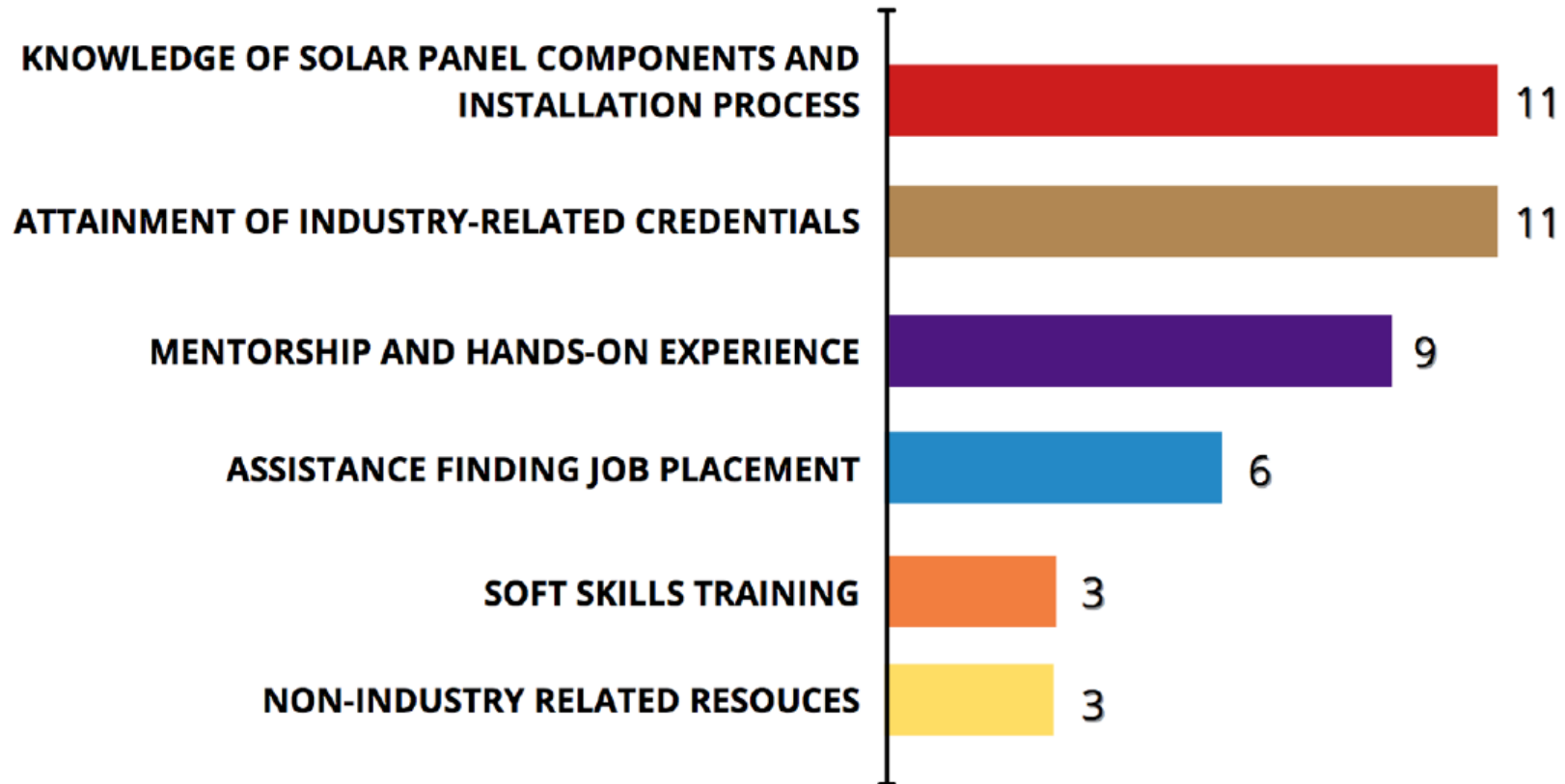
TO LEARN MORE CALL  
(314) 333-JOBS (5627)  
OR VISIT  
EMPLOYMENTSTL.ORG/GREENJOBS



- Soft Skills
- Job Readiness
- On The Job Experience
- Mentoring
- Technical Training
- Wrap Around Services
- Job Placement / Retention

# Surveyed Needs of Pilot 1.0 Participants

## TOP NEEDS OF PILOT PROGRAM PARTICIPANTS



\*Based on pre-program survey of 14 participants

# Curriculum

- Occupational skills covered include:
  - Basic heating, ventilation, and air conditioning (“HVAC”) training, with an emphasis on energy efficiency and sustainable technologies.
  - Basic electrical training.
  - General energy management accounting concepts including:
    - Energy use intensity;
    - Energy bills;
    - Enthalpy;
    - Power Factor;
    - EPA EnergyStar;
    - Degree day calculations;
    - Rate structures; and
    - Renewable Energy sources.

## CHARLOTTE, NC

*In conversation with the Association of Building Controls, our Community College System and University of North Carolina Charlotte to explore adding building automation technologies. This would provide an enhanced pathway for career development and commercial building maintenance.*

## Characteristics

- High **growth**
- Existing **relationships** and **levers**
- High skill **transferability**
- High % **unionized**
- Opportunities for **training**, **upskilling**, and **apprenticeships**

Key industries

Construction trades

Operations and maintenance

**DENVER, CO**

Key sectors

Green building, building electrification, and energy efficiency

Distributed energy resources (Renewables and storage)

Electric vehicle infrastructure

# **SO, GREEN JOBS (A) NEED TRAINING?**

Next is a USGBC suggestion that is not free....



TOPICS

# GREEN JOBS

Cultivating the green economy in an era of climate change



GREEN JOBS

### Recuperación verde y transición justa

25 APRIL–13 MAY 2022

Online. Spanish



GREEN JOBS

### Youth and Climate Academy: Creating jobs for future generations

6–17 JUNE 2022

Online. English, Spanish



GREEN JOBS

### Green construction: Building the future with sustainable jobs

20 JUNE–8 JULY 2022

Online. English



GREEN JOBS

### Green jobs for sustainable development: Concepts and practices

5 SEPTEMBER–14 OCTOBER 2022

Online. English, Spanish



GREEN JOBS

### Promoting green jobs in a circular economy

3–14 OCTOBER 2022

Online. English



GREEN JOBS

### Fostering Green Business Growth

21 NOVEMBER–2 DECEMBER 2022

Online. English

# Who attends this course?

The course is addressed to a **mixed audience of professionals interested gaining a deeper understanding of the basic concepts** around green jobs, the linkages with the ILO agenda and the sustainable development framework. This includes:

- ✓ Government representatives
- ✓ Social partners
- ✓ Practitioners engaged in the fields of sustainable development and employment promotion
- ✓ Staff from national and international development agencies, and
- ✓ Representatives from civil society organizations and academia

## Course objectives

The overall objective of the course is **to improve the understanding of green jobs key concepts and definitions** as part of the world of work's contribution to sustainable development, through a review of tools, selected literature and on-going practices.

More specifically, at the end of the course, it is expected that participants:

- ✓ **Understand** the links between environment, economy and society and are able to explain their interrelated challenges;
- ✓ Can **argue** why green jobs are key to promote sustainable development;
- ✓ Are able to **describe** what green and decent jobs are;
- ✓ **Know** in which sectors green jobs are mostly concentrated and can provide examples from different regions and countries;
- ✓ **Recognize** the role of governments and social partners in the promotion of policy coherence for the transition to greener and more sustainable economies;
- ✓ **Appreciate** best practices and useful case studies that illustrate the variety of approaches to fully exploit the business growth and job creation potential, while promoting environmental and social sustainability.

## Structure and methodology

The e-learning course “*Green jobs for sustainable development: concepts and practices*” is conceived to be implemented over a period of **6 weeks**, as described below:

Module	Week
Pre-course activities & Module 1	Week 1
Module 2	Week 2
Module 3	Week 3
Module 4	Week 4
End of course activities Submission of final assignment	Week 5
Revision of final assignments	Week 6

The course is structured around 4 learning modules, addressing 4 fundamental questions:

- ✓ **Why** are green jobs key to sustainable development?
- ✓ **What** are green and decent jobs?
- ✓ **Where** can green jobs be found and/or created?
- ✓ **How** can green jobs be promoted and by whom?

# GREEN JOBS FOR SUSTAINABLE DEVELOPMENT: CONCEPTS AND PRACTICES

5 SEPTEMBER–14 OCTOBER 2022

The course is available in [English](#), [Español](#)



**ONLINE**  
Online (E-Campus)  
5 September–14 October 2022



**APPLICATION DEADLINE**  
26 August 2022



**CONTACT**  
[greenjobs@itcilo.org](mailto:greenjobs@itcilo.org)

[DOWNLOAD INFORMATION NOTE](#)



**PRICE**  
Tuition: €980  
Total: €980



**CODE**  
A9715000

[APPLY NOW](#)



**LANGUAGES**  
English, Spanish

## APPROX \$1000

### Introduction to the course

The **environment and the world of work are inherently inter-connected**. Businesses and jobs depend on natural resources, ecosystem services and nature at large. Thus, economic and social development hinge on a healthy environment. Already today the effects from climate change and

# WHAT ABOUT HIGHER EDUCATION?

## UNIVERSITY OF HOUSTON DOWNTOWN

1. Minor in Sustainability,
2. Center for Urban Agriculture and Sustainability
  - Internships
  - Community Education

## Sustainability Minor

---

The **Minor in Sustainability** is open to UHD students in all majors and colleges. The minor was designed with a multidisciplinary approach to prepare students to lead in their own communities. Students must complete 9 hours of required courses and 9 hours of additional courses in areas of emphasis.

### Careers in sustainability:

- Research
- Government Organizations
- Green Business Consulting Firms
- Resource Management
- Renewable and Alternative Energy
- Education
- Engineering
- Corporate Responsibility
- Clean Technologies
- Environmental Science and Management
- Policy Making
- Public Health
- Urban Planning
- Sustainable Agriculture
- Ecotourism, etc.



## About



The vision of the CUAS is that Houston citizens will apply their knowledge and resources to create sustainable neighborhoods throughout the city. The mission of the CUAS will be to create and support sustainable neighborhoods throughout Houston by engaging UHD and the external community in teaching, research and professional development and promoting best practices in business, technology, science and engagement. In order to accomplish the mission and support the vision of the CUAS the center has several objectives. These objectives include supporting teaching of agriculture and sustainable practices relevant to living in an urban environment. The CUAS will also support academic research related to optimization of agriculture and food distribution in urban settings. Finally, the CUAS will serve as a hub to organize sustainability and urban agricultural initiatives and service opportunities both at UHD and throughout the greater Houston community.

## COLLEGE OF SCIENCES & TECHNOLOGY

### SUSTAIN Scholars

The SUSTAIN program includes involvement to a hybrid course on sustainability and summer on-line curriculum in renewable energy as part of the program. Students work collaboratively in mentoring activities and designing, and implementing a solution to a real-world problem. The program also involves a paid summer internship for 6-8 weeks at a local agency, non-profit or company that is of interest to each particular student. Students are expected to be engaged in the program for 6 to 8 weeks during the summer free for both the internship and the online course. For more information about this program please contact the Sustainability Coordinator, Juan Martinez at [martinezju@uhd.edu](mailto:martinezju@uhd.edu).

# **PARADIGM SHIFT:**

**JOBS NEED TO GO GREEN, OR GO HOME.**

**IF YOU CAN'T LAND A 'GREEN JOB' -**

**WHAT CAN YOU DO TO GREEN YOUR COMPANY  
FROM THE INSIDE? (GREEN JOBS B)**

# THE 'E' WORD: EDUCATION

Is there some reason why high school graduates do not fully understand what *is* recyclable and what *isn't*?

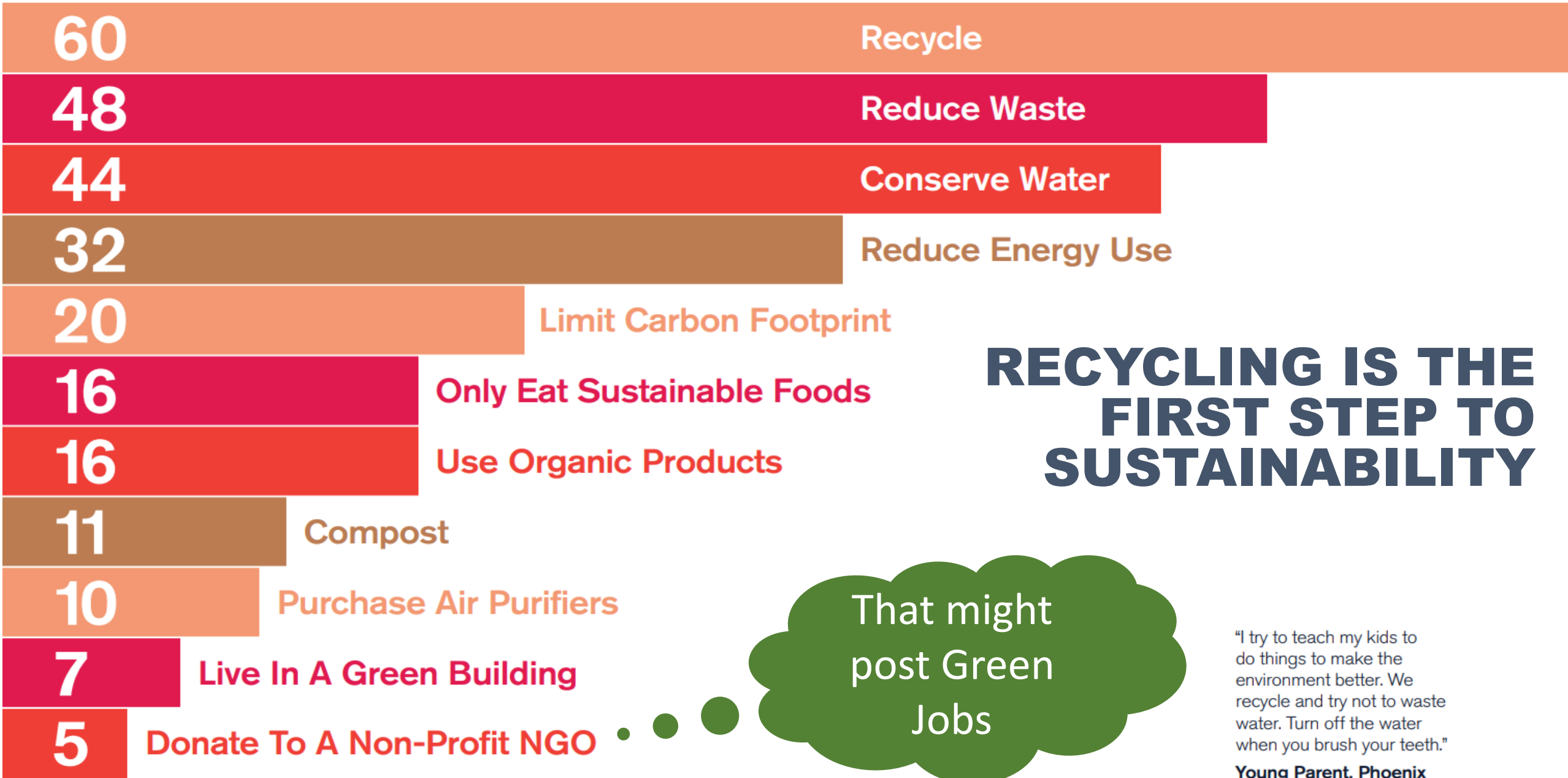
Could it be we are not teaching about this?

DO YOU KNOW WHAT IS  
RECYCLABLE IN YOUR TOWN?



## People are focused on day-to-day actions in their control



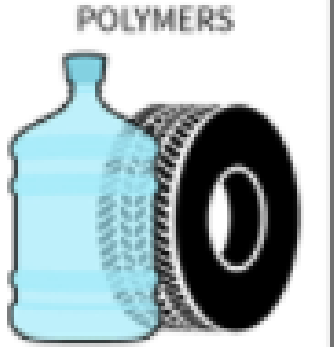
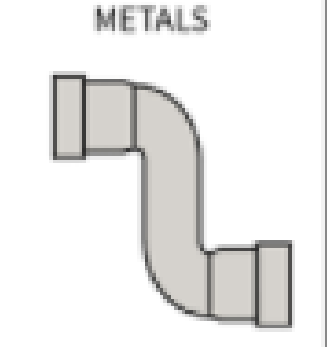

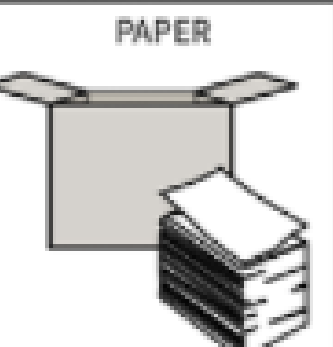


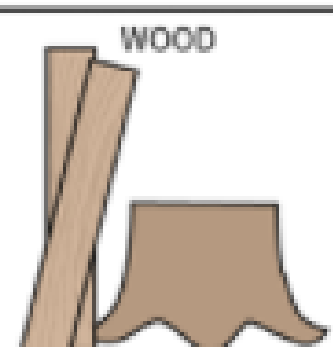
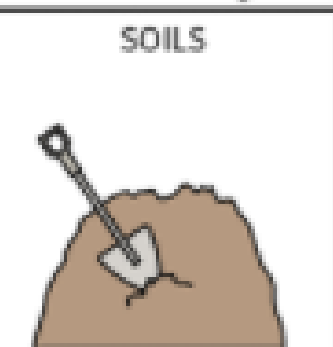
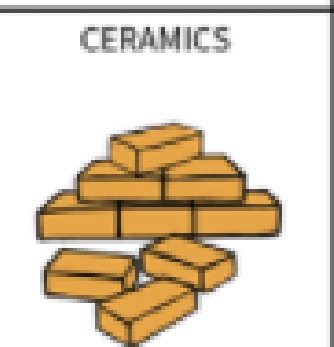
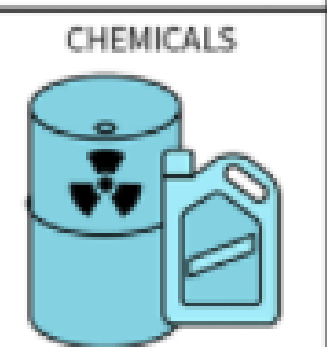
What are the top three ways you try to create a local environment that lets you live a longer and healthier life?



To understand generation of every commodity or waste at the facility and how these materials are processed.

What is TRUE Zero Waste Certification?



<b>REUSEABLES</b> 	<b>TEXTILES</b> 	<b>POLYMERS</b> 	<b>METALS</b> 
<b>GLASS</b> 	<b>PAPER</b> 	<b>PUTRESCIBLES/ FOOD</b> 	<b>PLANT DEBRIS</b> 
<b>WOOD</b> 	<b>SOILS</b> 	<b>CERAMICS</b> 	<b>CHEMICALS</b> 

HERE IS ONE THING TO 'GREEN UP' YOUR JOB FROM THE INSIDE...

# DON'T LET EDUCATION LAPSE!

Trash goes here



Recycling goes here.  
NOT TRASH.

**QUESTION: WHAT'S THIS?**

**ANSWER: IT DEPENDS\***

**IF YOU HAD A GREEN JOB,  
YOU WOULD IMPROVE  
THIS SITUATION, RIGHT?**

**\*A lone container in America is a trash can.**





**YOUR EMPLOYER WANTS YOU TO  
PERFORM YOUR JOB DUTIES.**

**GREEN JOBS (B) HAVE GREEN JOB DUTIES.**

DOES YOURS?

YOU'LL HAVE TO BE CREATIVE TO CHANGE THE STATUS  
QUO.

In our minds, this is STILL normal.

**EPIC  
FAIL!**



**HERE ARE SOME GREEN JOBS WE NEED  
MORE OF AROUND HERE**

**WE NEED  
FOOD WASTE  
DIVERSION  
FOR  
COMPOSTING**



**“\$165 Billion  
Worth of Food  
Waste enters  
Landfills each  
Year!”**

**WE NEED  
CONSTRUCTION &  
DEMOLITION  
WASTE  
DIVERSION**





# BATTERIES

## AND THESE ARE END-OF-PIPE PROBLEMS



# TOP 10 GREEN JOBS

## CHIEF SUSTAINABILITY OFFICER

Senior member of an organisation that is able to provide high-level, strategic, expert management around environmental, social and economic impacts and actions.

## RENEWABLE ENERGY EXPERTS

Those who can engineer, advise and manage the way renewable energy systems are set up and operated.

## SUSTAINABLE DESIGN

Can design closed-loop, resource-reduced products that fit within a circular economy, understand full life cycles, closed-loop business strategies, have a

## SUSTAINABLE INVESTMENT ADVISORS

## SERVICE SYSTEM CUSTOMER SUPPORT

Employees able to provide customer service for take back, return and closed-loop systems as both B2C and B2B.

Managers who can create and manage the end-to-end integrated systems that are part of the circular economy.

## REVERSE LOGISTICS MANAGERS

Know the full life cycle, manage how products a company produces move through the economy, from production to use and then recapture. Can identify and fix supply chain gaps, support design teams to create closed loop-products and ensure materials are being used to their maximum once being recaptured.

## PRODUCT LIFECYCLE MANAGERS

Are able to assess, monitor and manage the operational impacts of a company

## IMPACT ASSESSMENT MANAGERS

# A LOT MORE OF THESE

## IMPACT ADVISORS

Advanced skills in impact assessment, circular economy principles, green offices, environmental management and general expertise around sustainability methods and initiatives who can advise at all levels of industry to support in decision making and implementation.

## GREEN ADVISORS



# THE CIRCULAR ECONOMY IS MORE THAN END-OF-PIPE



## **DESIGN OUT WASTE AND POLLUTION**

A circular economy reveals and designs out the negative impacts of economic activity that cause damage to human health and natural systems. These costs include: the release of greenhouse gases and hazardous



## **KEEP PRODUCTS AND MATERIALS IN USE**

A circular economy favours activities that preserve value in the form of energy, labour, and materials. This means designing for durability, reuse, remanufacturing, and recycling to keep products, components, and



## **REGENERATE NATURAL SYSTEMS**

A circular economy avoids the use of non-renewable resources where possible and preserves or enhances renewable ones, for example by returning valuable nutrients to the soil to support natural regeneration.

# HOW TO NOT BE FOOLED BY GREENWASHING

"earth  
friendly"

"certified  
green"

"nontoxic"

"chemical  
free"

"bio"

"natural"

"eco"

## PUSHING THE ECO BUTTON



# 7 Vague Statements

Companies Use to Greenwash Products

## SUSTAINABLE



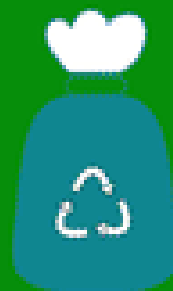
There is no consistent definition of what it means for a practice to be sustainable, and there are usually hidden tradeoffs.

## RECYCLABLE

Many materials are technically recyclable, but are not practically recyclable. The question is not can it be recycled, but WILL it be recycled.



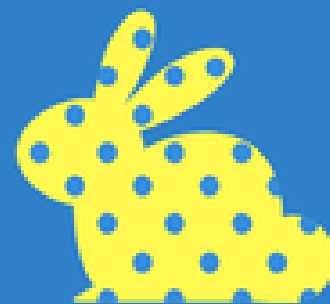
## BIODEGRADABLE



This statement is not as meaningful as you think. Most materials are biodegradable! This does not mean they will not harm the environment, and it may take a very long time for them to actually break down.

## CRUELTY-FREE

Cruelty-free also is not legally defined and anyone can claim it on a product label. Look for a legitimate certification logo such as the 'Leaping Bunny'



## NONTOXIC



Non-toxic is an unregulated term. It has no legal definition when used on a product label. "Green" and non-toxic household cleaners often contain potentially dangerous chemicals.

## ECO-FRIENDLY/ ENVIRONMENTALLY FRIENDLY

Vague, and often meaningless unless explained in concrete terms. And, is the manufacturing process eco-friendly?

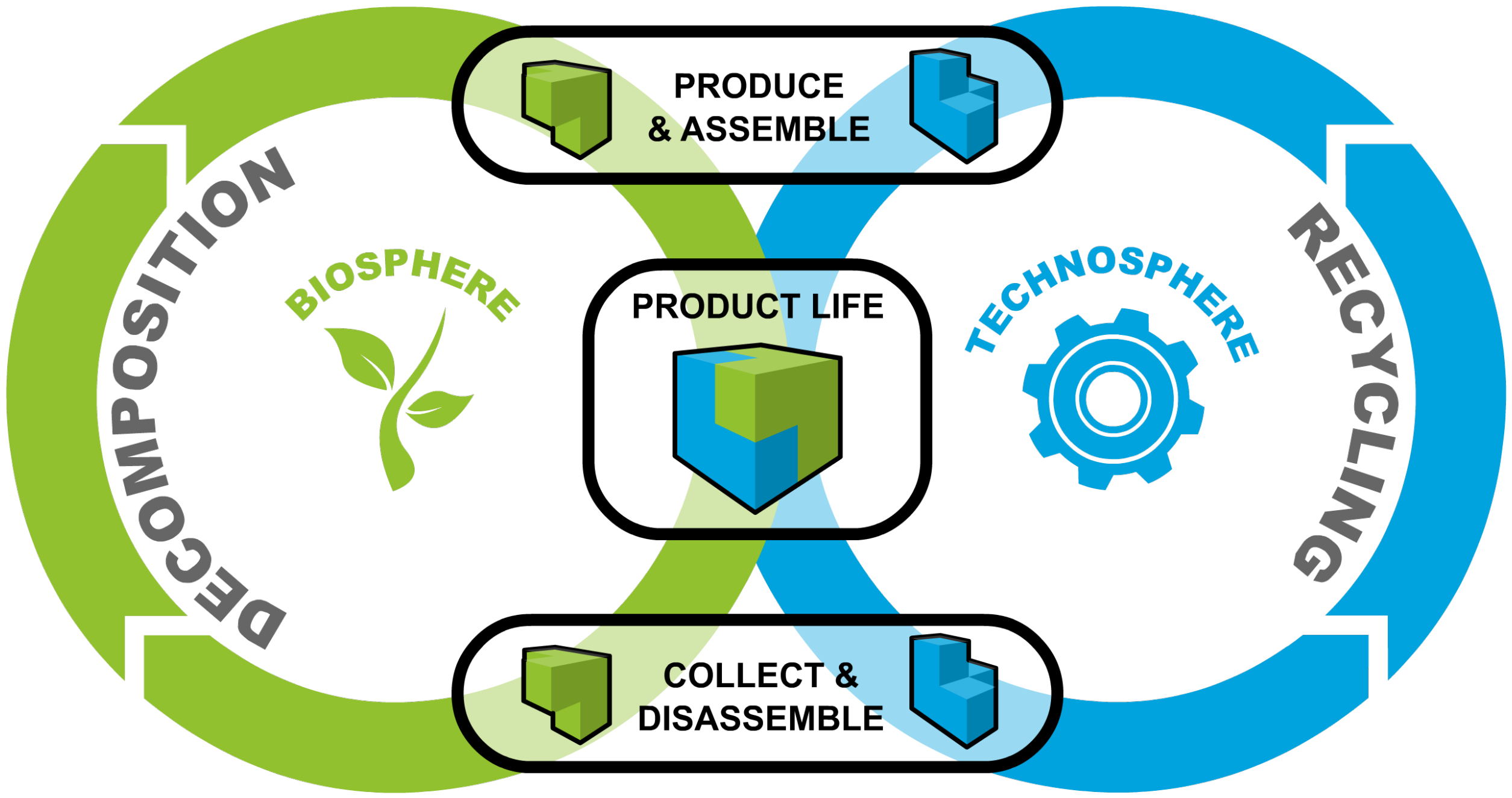


**WE AREN'T GOING TO  
CONSUME OUR WAY OUT OF THIS.**

We have thousands of manufacturing corporations and  
billions of people.

Think about it.

**BUT IT'S THE FIRST STEP.**



**DECOMPOSITION**

**BIOSPHERE**



**PRODUCE & ASSEMBLE**



**PRODUCT LIFE**



**TECHNOSPHERE**



**COLLECT & DISASSEMBLE**



**RECYCLING**



Our Story

Our Materials

Our Values



## Virtuous Circle Program

Although our shoes are built for sustainability and longevity, nothing can last forever. Send your Nothing New shoes back to us. We'll pay for shipping, give you \$20 off your next purchase, and make sure nothing goes to waste.

[GET STARTED](#)

We started Nothing New to make a positive impact while creating products we love.

- **MANY BRANDS ARE USING RECOVERED PLASTICS.**
- **SO FAR, *NOTHING NEW* IS ONE OF TWO BRANDS ALSO WITH A *TAKE-BACK PROGRAM.***

GREEN  
JOBS!

# RIGHT AFTER I SET UP THIS WEBINAR, THIS:

The Houston Green Opportunities Expo has two main objectives:

1. Increase access to training and employment opportunities for Houstonians in underserved communities.
2. Maintain collaborations between the City of Houston and green industry organizations and employers.

We're looking for:

- Energy, Environment, Tech, and Construction jobs
- Employment opportunities that compensate at least \$15/hr
- Paid training programs i.e. internships and apprenticeships

Green opportunities are:

- Jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources.
- Jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources.
- Education and training that increase Houstonians awareness of green jobs, entrepreneurship, and sustainability.

## Green Opportunities Houston Expo Details

**Location:** Houston Community College ([HCC South Campus](#))

**Date:** April 22 - 23, 2022 11AM – 3PM

**Set-Up** 10AM-11AM

**Vendor Fee:** \$150 Includes 6ft. table and 2 chairs

(Vendor fee is waived for companies who sponsor this event for

**DEADLINE TO REGISTER: MARCH 30, 2022**

WHERE'D  
THIS COME  
FROM?



**GREEN OPPORTUNITIES HOUSTON CAREER EXPO**  
APRIL 22-23, 2022  
11AM - 3PM

**GREEN OPPORTUNITIES HOUSTON**

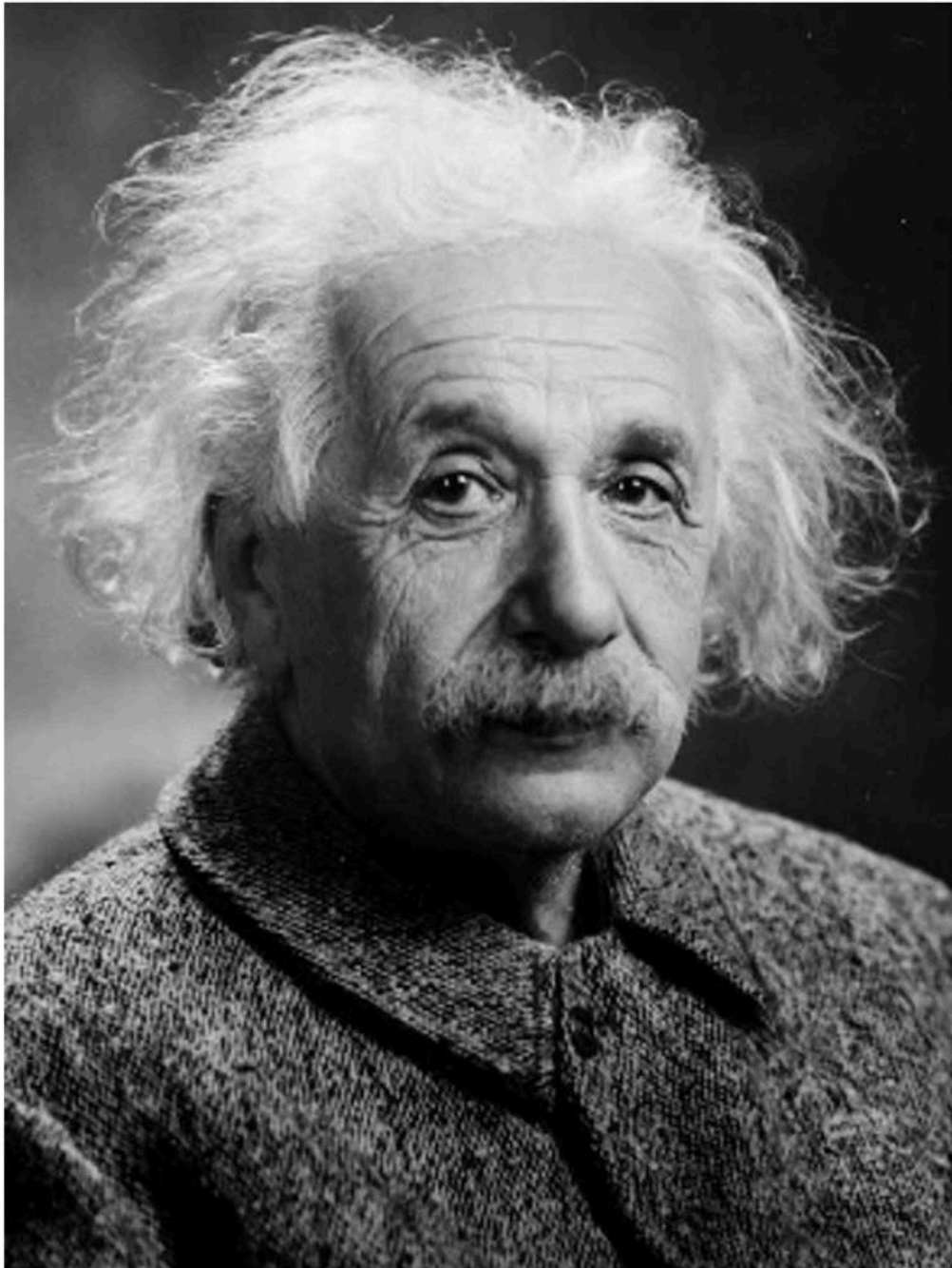
Come learn about a variety of paid training programs  
**EXPLORE** career opportunities  
**CONNECT** with employers  
**SHARE** your resume  
**GET HIRED** for internships, apprenticeships, and careers starting at \$15/hr

Green Opportunities Houston Career Expo

Create new education and employment opportunities for Houstonians in Complete Communities  
Maintain collaborations between the City of Houston and green industry organizations and companies

**SCAN FOR A CHANCE TO RECEIVE A FREE LAPTOP, TABLET, or VR HEADSET**

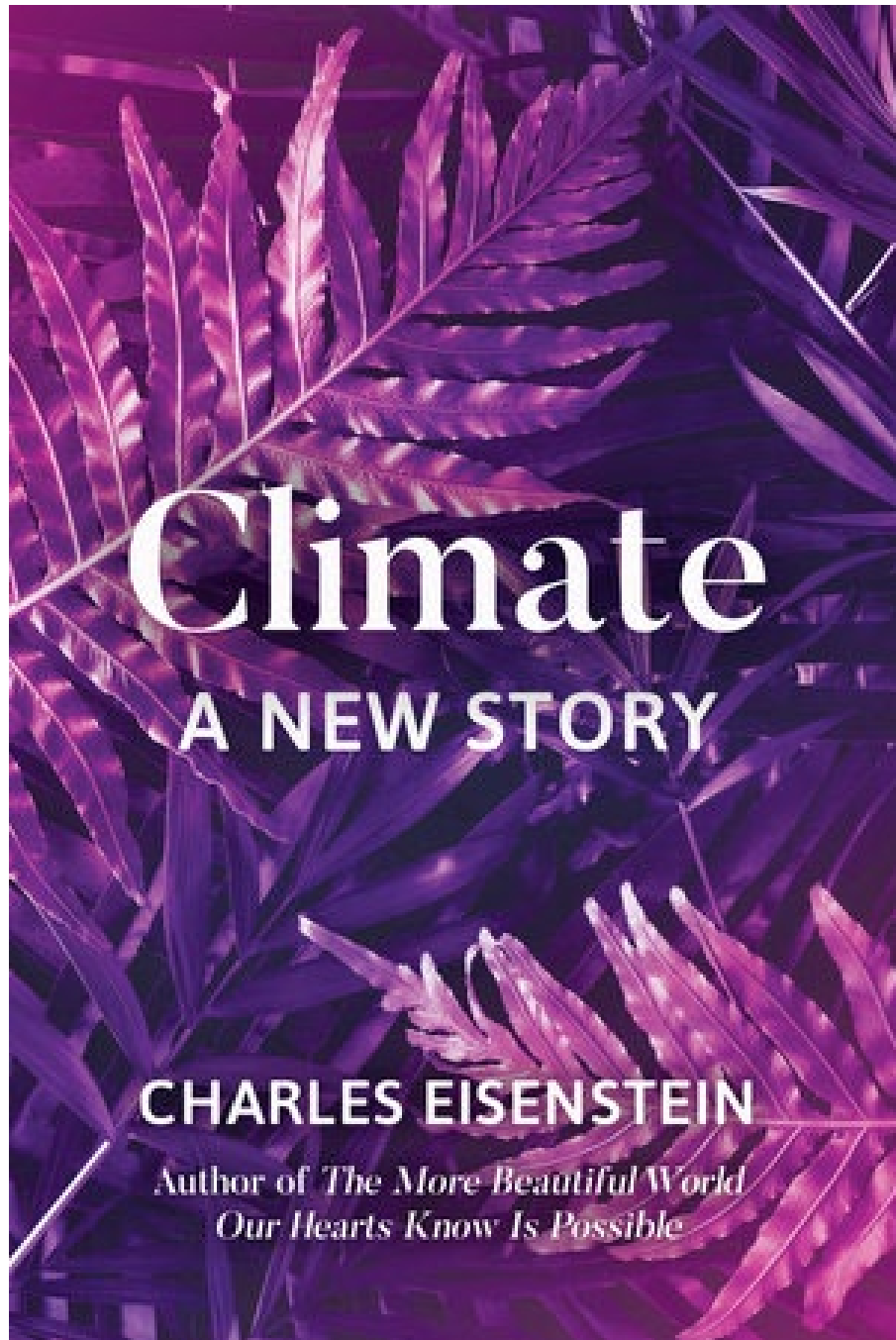




“We cannot solve our problems with the same thinking we used when we created them.”

- Albert Einstein





“Respect for nature is inseparable from respect for all beings, including the human. It is impossible to cultivate one without the other. Climate change, therefore, calls us to a greater transformation than a mere change in our energy sources. It calls us to transform the fundamental relationship between self and other, including but not limited to the relation between the collective self of humanity and its “other,” nature.”



**GET YOUR HEAD  
IN THE GAME.**



# READ MORE



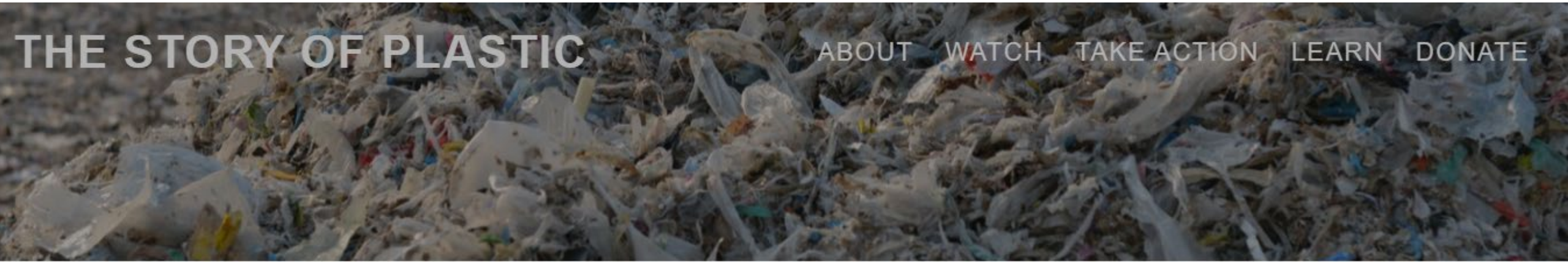
AMERICAN DARK

Kurt Anderson  
Joel Bakan  
Mark Bittman  
Erin Brockovich  
Emily Guendelsberger  
Paul Hawken  
Arlie Hochschild  
Jensen, Keith, Wilbert  
James H Kunstler  
Matthew Stewart  
David Wallace-Wells  
Tim Wu

**Evil Geniuses**  
**The New Corporation**  
**Animal, Vegetable, Junk**  
Superman's Not Coming  
On the Clock  
Regeneration  
Strangers In Their Own Land  
**Bright Green Lies**  
Too Much Magic  
The 9.9 Percent  
The Uninhabitable Earth  
The Attention Merchants

THEN: GLADWELL'S THE TIPPING POINT

# WATCH



THE STORY OF PLASTIC

ABOUT WATCH TAKE ACTION LEARN DONATE



HOW TO WATCH



TAKE ACTION

**WHAT CAN ONE PERSON DO?**

**DON'T BE ONE PERSON.**

**KATHLEEN DEAN MOORE**

# TAKE YOUR PICK

**raise  
your  
voice.**

**DON'T RAISE  
YOUR  
VOICE.  
IMPROVE  
YOUR  
ARGUMENT.**





thank you!



[houstonpublicworks.org](http://houstonpublicworks.org)

  @houpublicworks