



U.S. DEPARTMENT OF
ENERGY

Fossil Energy and
Carbon Management

Explaining FECM's Societal Considerations and Impacts Framework: What are we doing and why?

Sept. 13, 2022

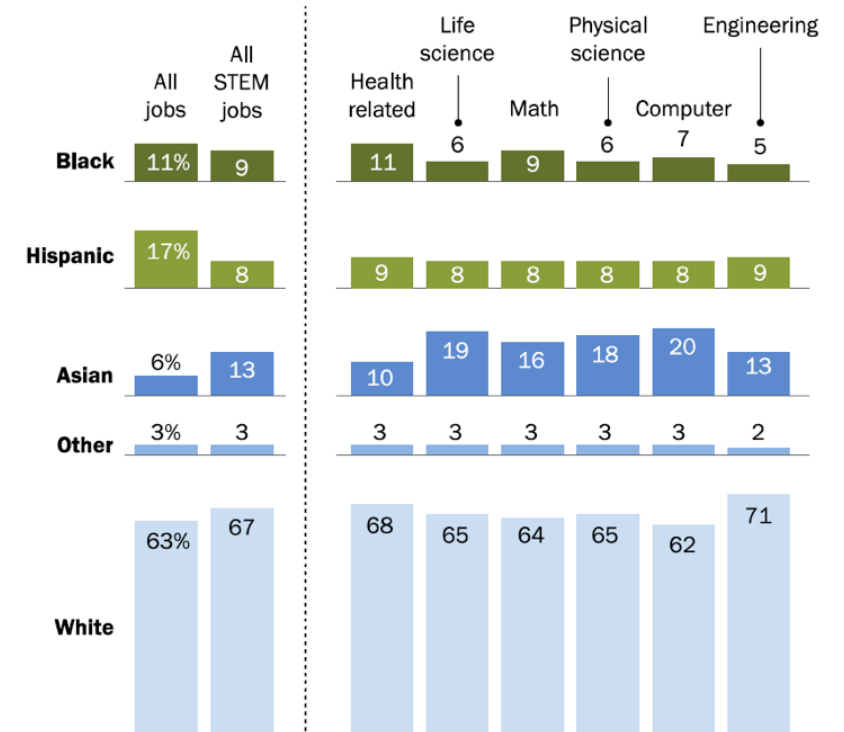
Dr. Holly Buck, Office of Carbon Management / Division of Strategic Engagement

Science and Technology is Awesome *but we have four big challenges*

1. There's a **lack of diversity in STEM** — which can lead to **continued inequality**, as well as lost opportunities for both workers and firms

Black and Hispanic workers remain underrepresented in the STEM workforce

% who are...



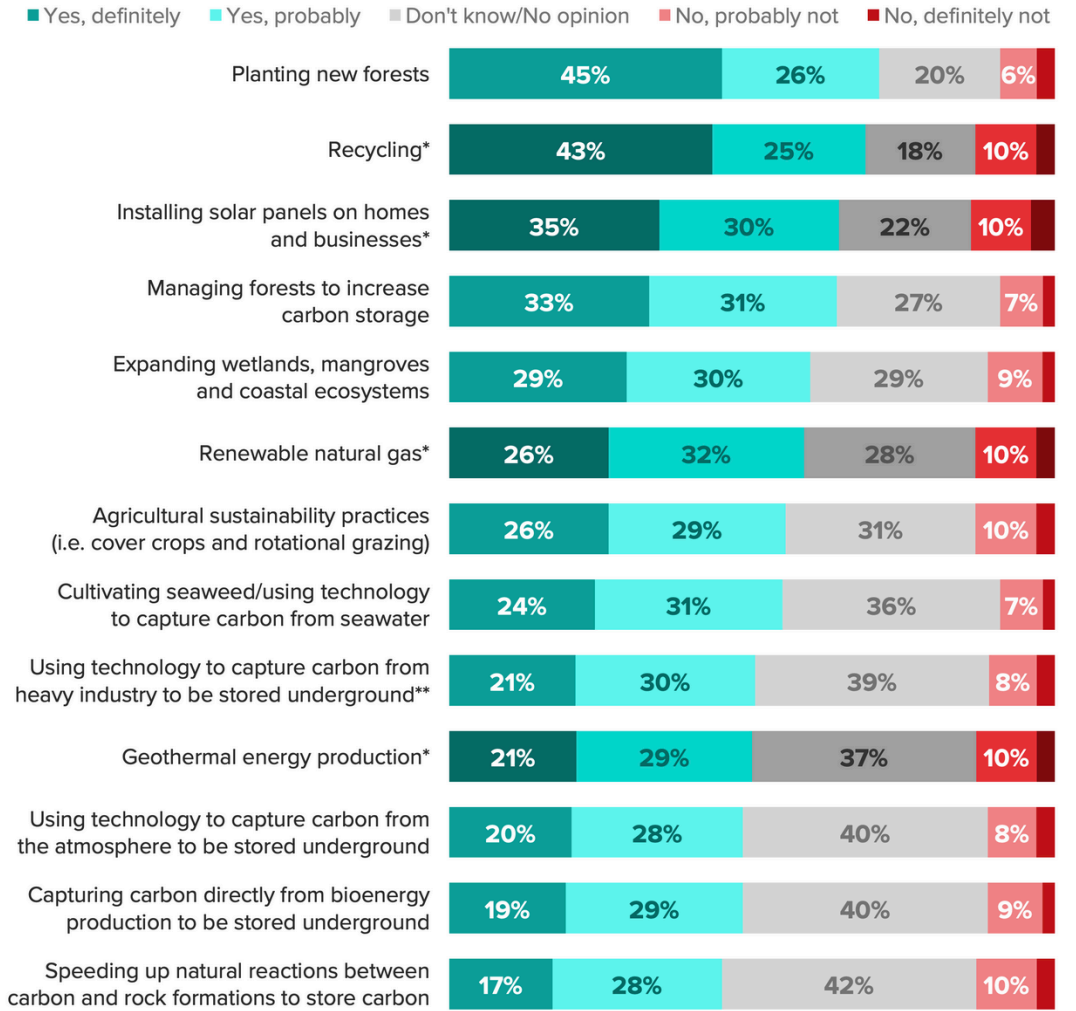
Notes: Based on employed adults ages 25 and older. STEM stands for science, technology, engineering and math occupations. Engineering includes architects. White, Black and Asian adults include those who report being only one race and are not Hispanic. Hispanics are of any race. Other includes non-Hispanic American Indian or Alaskan native, non-Hispanic Native Hawaiian or Pacific Islander and non-Hispanic two or more major racial groups. Source: Pew Research Center analysis of 2017-19 American Community Survey (IPUMS) "STEM Jobs See Uneven Progress in Increasing Gender, Racial and Ethnic Diversity"

PEW RESEARCH CENTER

2. People often don't know about our technology or why it is useful in the energy transition, and the **public is often left out of decision-making** — which can worsen trust between scientists and the public, and inhibit deployment

Carbon Confusion: What the Public Thinks Are Considered Carbon Removal Practices, Technologies

Do you consider the following to be carbon removal practices and technologies?



*Does not fit the definition of carbon removal, which describes technologies and practices that remove existing carbon from the atmosphere
**i.e. carbon capture and storage, or CCS

MORNING CONSULT

Poll conducted Oct. 23-25, 2020, among 2,200 adults, with a margin of error of +/-2%.

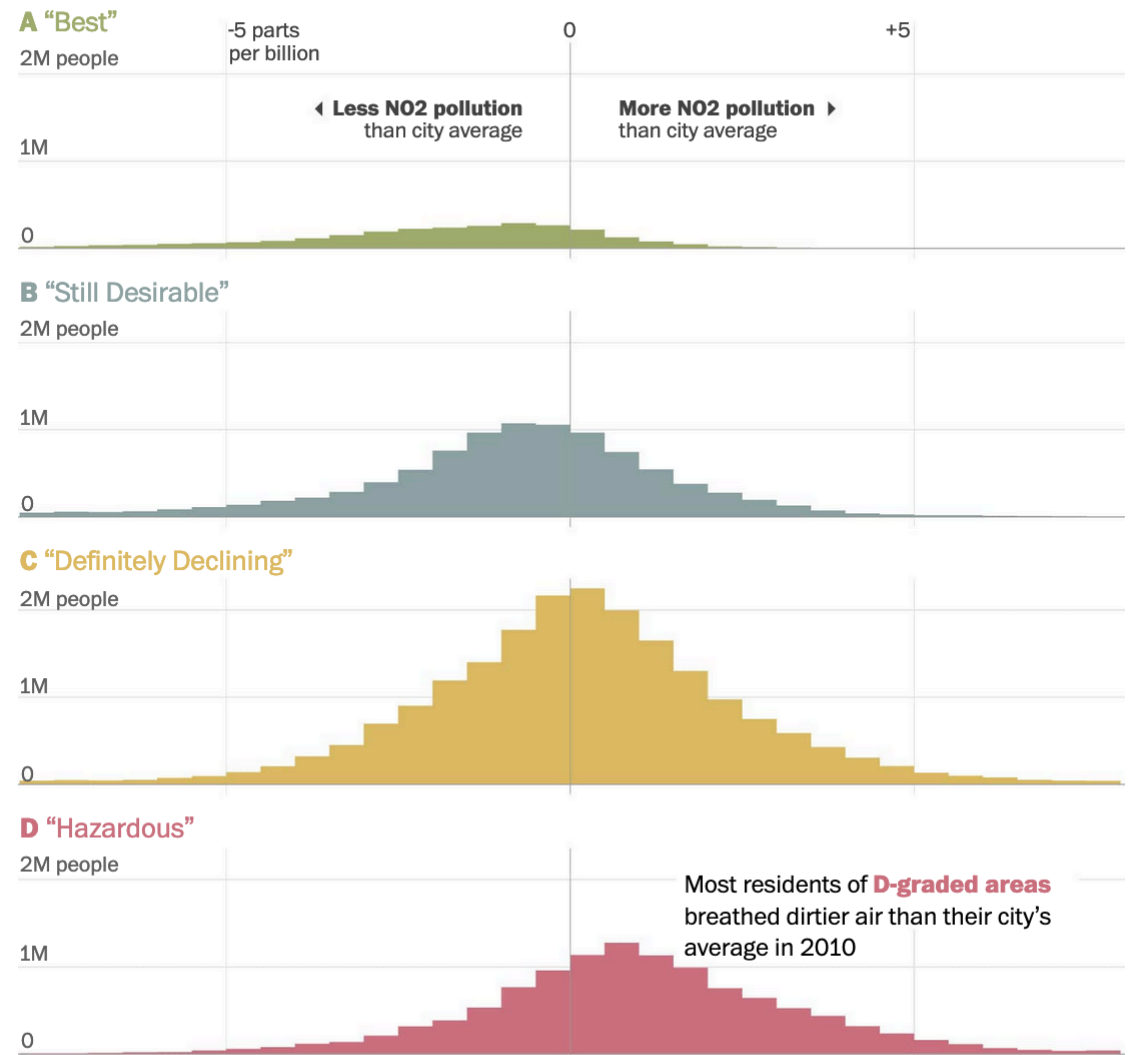


Fossil Energy and
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3. The **benefits, harms, and risks** from innovation and industrial development are often **unevenly distributed**

Redlining's fingerprint lingers in the nation's air

Levels of nitrogen dioxide pollution in 2010 tended to be worse in areas graded **C** or **D** than areas graded **A** or **B** on government mortgage maps dating to the 1930s.



Note: City averages are population-weighted mean values calculated for HOLC-graded blocks only.

Source: Lane et al., 2022

JOHN MUYSKENS/THE WASHINGTON POST

RETURN TO ISSUE < PREV SUSTAINABLE SYSTEMS NEXT >

Historical Redlining Is Associated with Present-Day Air Pollution Disparities in U.S. Cities

Haley M. Lane, Rachel Morello-Frosch, Julian D. Marshall, and Joshua S. Apté*

Cite this: *Environ. Sci. Technol. Lett.* 2022, 9, 4, 345–350

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Science and Technology is Awesome *but we have four big challenges*

1. There's a **lack of diversity in STEM** — which can lead to continued inequality, as well as lost opportunities for workers and firms
2. People often don't know about our technology or why it is useful in the energy transition, and the **public is often left out of decision-making** — which can worsen trust between scientists and the public, and inhibit deployment
3. The **benefits, harms, and risks** from innovation are often **unevenly distributed**
4. Many communities are struggling with a **lack of quality jobs** that pay a family-sustaining wage

The four parts of the Societal Considerations and Impacts framework:

- Diversity, Equity, Inclusion, and Accessibility (DEIA) plan
- Community and Stakeholder Engagement plan
- Justice40 Initiative plan
- Quality Jobs plan

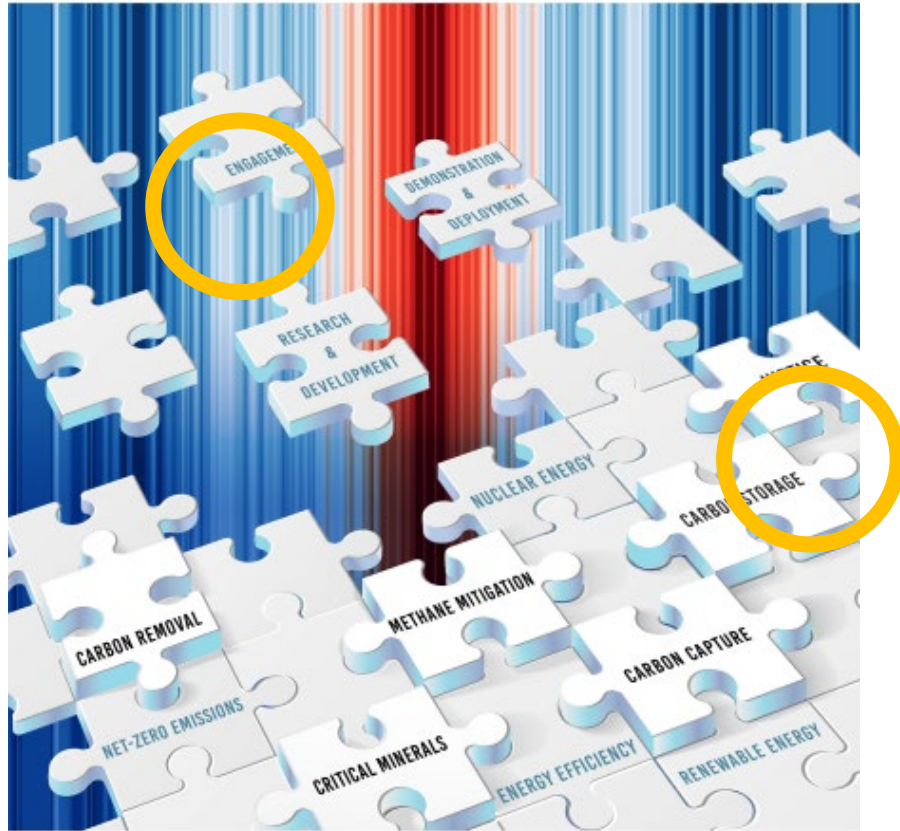
Why address these challenges in our programs? The short answer:

We know from experience that community and stakeholder engagement and addressing impacts is key to success

1. Office of Fossil Energy and Carbon Management priorities
2. Department and Administration priorities
3. **We want projects to be successful**

STRATEGIC VISION

The Role of Fossil Energy and Carbon Management
in Achieving Net-Zero Greenhouse Gas Emissions



“FECM is committed to incorporating **justice** principles throughout our work. FECM prioritizes the **meaningful participation** of communities, with special focus on disadvantaged communities; a just distribution of benefits; and emphasis on remediating legacy harms while also mitigating new impacts. These principles will be at the center of funding decisions, including implementation of Justice40, and partnership development.”

Prioritizing DEIA

Executive Order On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government

JANUARY 20, 2021 • PRESIDENTIAL ACTIONS

“[T]he Federal Government **should pursue a comprehensive approach to advancing equity for all**, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality. Affirmatively advancing equity, civil rights, racial justice, and equal opportunity is the responsibility of the whole of our Government. ...

By advancing equity across the Federal Government, we can create opportunities for the improvement of communities that have been historically underserved, which benefits everyone.”

The head of each Agency shall make advancing DEIA a priority component of the agency's **management agenda** and **agency strategic planning**.

Prioritizing DEIA

Diversity

(Welcome and engage all people and perspectives: “workforce looks like America”)

Federal Definition:

Hire and promote Nation’s best talent:

Diverse and representative workforce,
identify talent,
announce vacancies in multiple ways,
develop pipeline,
mitigate bias,
address potential barriers in accessing job opportunities.

Equity

(Ensure fair outcomes and access to opportunities and career advancement)

Federal Definition:

Consistent and systematic fair, just, impartial treatment of all, including underserved communities.

Opportunities parity to advance in careers and grow as leaders;
mitigate **biases/barriers**;
ensure **fair outcomes and access** to services.

Inclusion

(Create an environment where everyone belongs and can thrive)

Federal Definition:

Ensure **employees feel supported**; strengthen **feedback** loops.

Provide opportunities to learn/develop/grow
→

so that **employee talents** are supported/ utilized/ embraced →

and create **engaged and high-performing** workforce.

Accessibility

(Establish ease of use for all abilities)

Federal Definition:

Consistently design, construct, develop, and maintain **facilities, technology, programs, and services** so that all people, including people with disabilities, can fully and independently use them.

Modernize infrastructures to support rapid adoption of tech. innovations;

include accessibility in decision-making for physical and virtual environments.

Prioritizing DEIA

Addressing DEIA can:

- Improve employee retention and have more productive workplaces
- Support people from underrepresented groups in STEM
- Support collaboration – and share benefits – through stakeholder engagement, especially with underserved communities

DEIA: How to think about it?

Formulate why you are focusing on DEIA, beyond funding requirements.

- Cultivating a workplace that attracts and retains top talent
- Aligning practices with the values that members hold
- Acting on research that shows how more diverse organizations have higher levels of creativity and productivity

Assess the current state of DEIA in your project/company

Develop goals and desired outcomes: what would success look like?
Setting SMART goals.

Develop implementation strategies to reach those outcomes.

Community and Stakeholder Engagement

Why is stakeholder engagement important?

- Effective stakeholder engagement can improve community-employer relations, increase support for projects and provide the community and company an opportunity to leverage resources.
- Community engagement as a potential risk management strategy can help avoid losses from regulatory delays and litigation due to non-compliance, community opposition and negative public relations

Community and Stakeholder Engagement: Not just a plan for outreach or comms

Traditional Communications

Providing project updates
Maintaining a website
Sending email blasts to stakeholders
Developing talking points for staff

Making public presentations
Holding open houses

Community and stakeholder engagement

Holding listening sessions
One-on-one meetings with groups;
relationship building
Collaborating on community-based monitoring
Co-developing emergency response plans

Prioritizing Environmental Justice

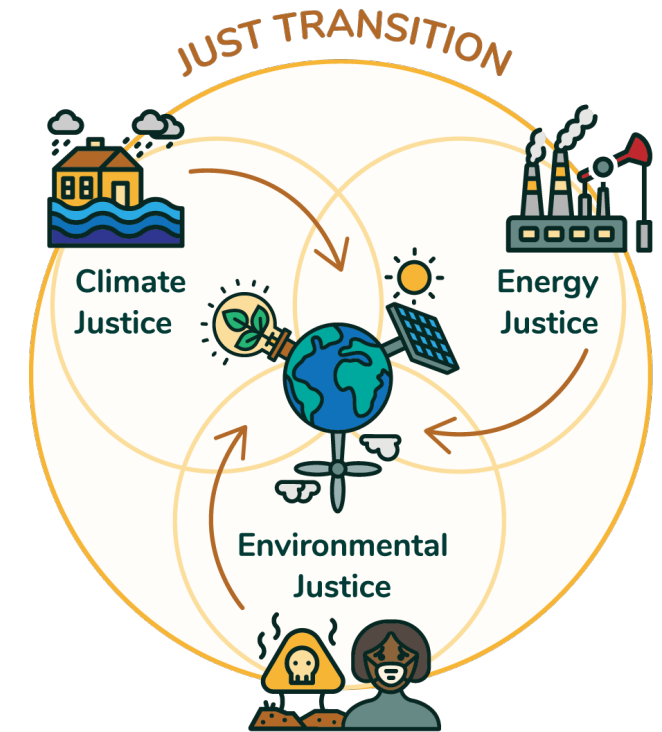
Environmental Justice

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys:

- The same degree of protection from environmental and health hazards, and
- Equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

Energy Justice

- Seeks equity in the social and economic participation in the energy system
- While remediating social, economic, and health burdens on “frontline communities” explicitly centering their concerns
- Aims to make energy more accessible, affordable, clean, and democratically managed for all communities.



Initiative for Energy Justice [Section 1 - Defining Energy Justice: Connections to Environmental Justice, Climate Justice, and the Just Transition](#) - Initiative for Energy Justice (iejusa.org)

What is Justice40?

EO 14008, *On Tackling the Climate Crisis at Home and Abroad*, establishes a goal that **40% of the overall benefits** of certain federal investments flow to disadvantaged communities (DACs).

Federal
investments



40% of the overall
benefits



Disadvantaged
communities



What does Justice40 Cover?

All FECM programs!

Federal Investments:

- ✓ Federal grant and procurements
- ✓ Financing (credit, loans, and guarantees)
- ✓ Staffing costs
- ✓ Provision of goods and services
- ✓ Others per OMB

In these areas:

- ✓ Climate change
- ✓ Clean energy and energy efficiency
- ✓ Clean transportation
- ✓ Affordable and sustainable housing
- ✓ Training and workforce development
- ✓ Remediation of legacy pollution
- ✓ Clean water and waste infrastructure

DOE Disadvantaged Community Definition

Cumulative Burden. Census tract must have at least 30% low-income households and rank in the 80th percentile of cumulative sum of 36 indicators, where each input is equally weighted. Rankings are state-relative.

ENERGY BURDEN (5)

Transportation Burden
Energy Burden
Non-grid connected home
heating fuel
Power outages
Duration of outages

FOSSIL DEPENDENCE (2)

IWG coal jobs ratio
IWG fossil energy jobs ratio

VULNERABLE POPULATIONS (19)

Housing burden	Renters*
Food desert	No internet
Job access (-)	Uninsured
Park access (-)	Disability
Commutes > 30 mins*	Incomplete plumbing
No vehicle*	Single parents
Unemployed	Mobile homes
Low Income*	Unhoused
No GED*	Age over 65*
Linguistic Isolation*	

ENVIRONMENTAL/ CLIMATE HAZARDS (10)

Lead paint
Diesel particulates
Cancer
Traffic volume
Water discharge
NPL sites
RMP facilities
TSD facilities
FEMA climate risk
PM 2.5

Addressing project impacts – Simple Example

A project will result in a permanent increase in truck traffic.

Disbenefits:

1. Increase in safety risk from accidents
2. Increase in dust and noise pollution
3. Increase in tailpipe emissions
4. Potential decrease in home values



- Define metrics and units corresponding to each impact (number of accidents, change in noise level (dB) and visibility, NOx, HC, SO2, PM Ozone; home values)
- Determine who experiences these impacts and their cumulative burden
- Examine alternative routes

Prioritizing Quality Jobs

"We want these good-paying, union-friendly jobs in every pocket of the country." - *Center for Energy Workforce Development EnergyCareers 2021*

"I agreed to serve as Secretary of Energy in this administration because I am absolutely obsessed with creating good-paying, union jobs... And I am absolutely convinced that clean energy will be the most powerful engine for job creation this century." - *United Brotherhood of Carpenters and Joiners Executive Secretary-Treasurer Meeting, Oct. 2021*



Prioritizing Quality Jobs

- Majority of jobs created by the Bipartisan Infrastructure Law (BIL) won't require a traditional four-year degree
- These jobs will increase opportunities for earn-as-you-learn, on-the-job training, including apprenticeships (which lead to a nationally recognized credential)
- Opportunities to create on-ramps to jobs (especially permanent, full-time jobs) with competitive wages and long-term career potential, especially for disadvantaged and underrepresented workers.

Prioritizing Quality Jobs

Incorporation of strong labor standards:

- Strong health and safety standards, predictable work schedules, clear processes for dispute resolution

High-road workforce development programs:

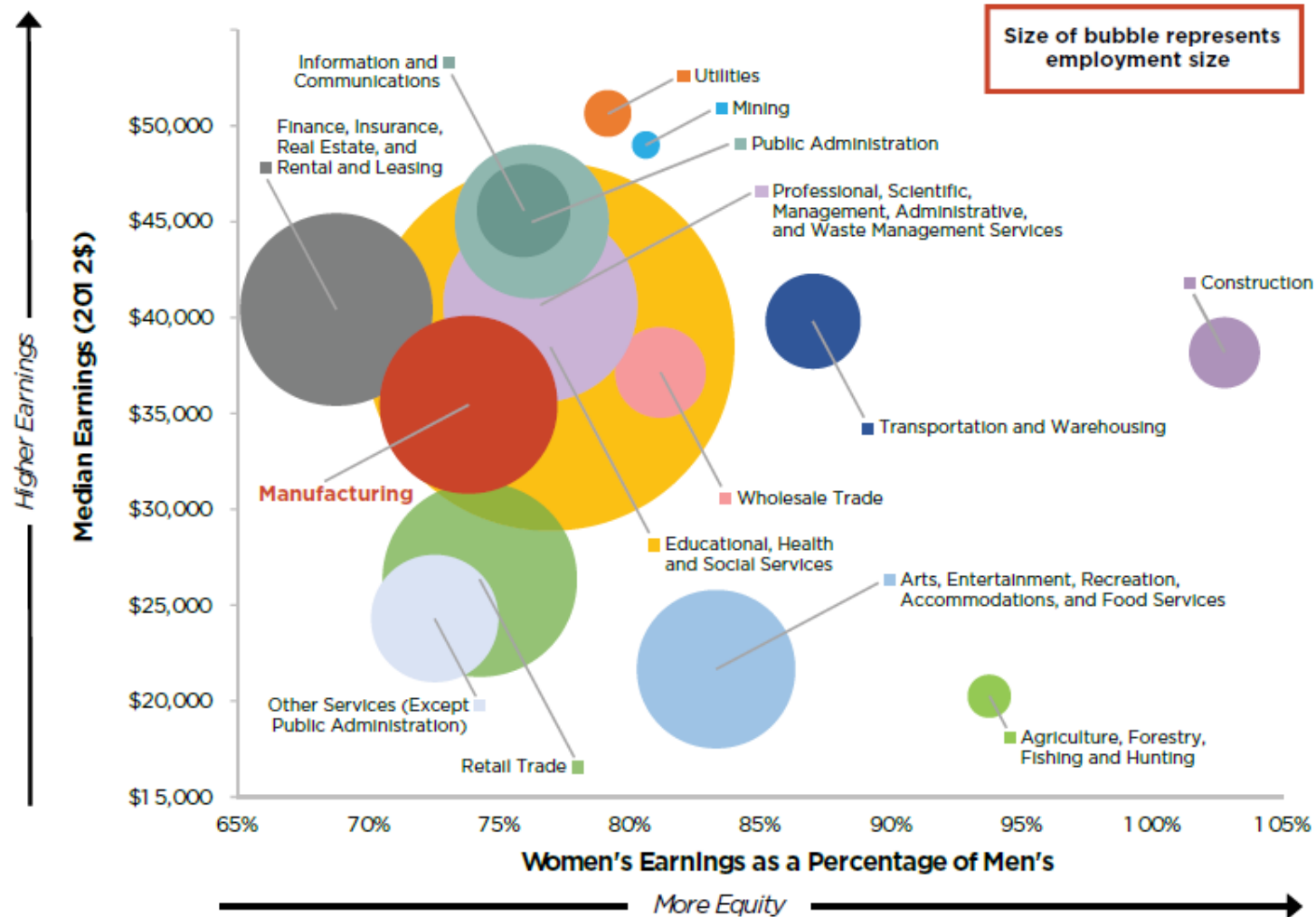
- Improving job access for marginalized and historically underrepresented workers; registered apprenticeship and quality pre-apprenticeship programs

Supporting the creation of good-paying jobs with the free and fair choice to join a union.



Photo credit: NREL 46193 / Dennis Schroeder

Pay Equity



*Pastor and Sanchez,
 "#WomenCanBuild: Including
 women in the resurgence of good
 U.S. manufacturing jobs,"
 University of Southern California
 Program for Environmental and
 Regional Equity, 2015*

How DOE and the Administration is supporting jobs and manufacturing

- Prioritizing domestic content
 - Now required as per Build America, Buy America Act
 - Goal of strengthening domestic production and domestic supply chains
 - Developing tools to preference domestically made products
- DOL's Good Jobs Initiative (and MOU with DOE)
- Construction work on BIL projects covered by Davis-Bacon
- Use of the Defense Production Act (DPA) to accelerate domestic production of solar PV, grid hardware, heat pumps, insulation, and electrolyzers

Moving from these priorities to **action-oriented plans**



Vision: We affirm we care about justice / engagement / DEIA

Assessment: We mapped or assessed underserved communities / stakeholders / DEIA

Goals: From our assessment, we know X is lacking, so we want to improve in X

Outcomes: We know we have succeeded when Y (specific target) is reached

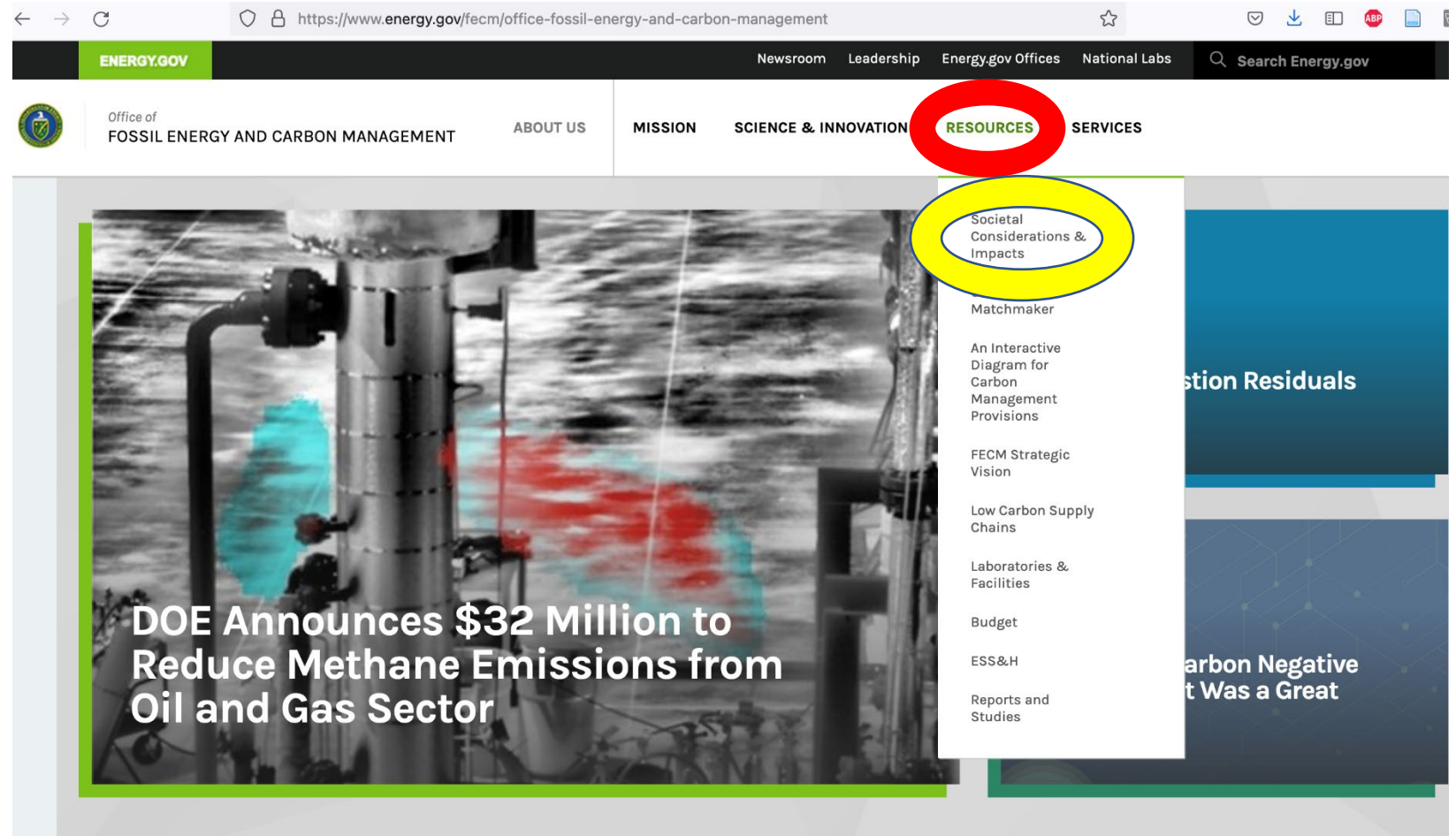
Implementation: To achieve Y, [specific actor] has to do Z [in specific timeframe]

Increased effort in societal considerations and impacts can...

- Benefit projects via increased productivity and ownership among team members
- Create more robust pipelines for worker readiness and training, especially for disadvantaged workers
- Increase opportunities for small and disadvantaged businesses, and for people who are underrepresented in STEM and other careers
- Help local and regional economies to become more resilient, equitable, and sustainable
- And more!

Further resources

- Guidance documents for project teams include advice on:
 - **Process:** Steps for creating a plan and advice on how to go about it
 - **Content:** A walk-through of required elements, with details about what they might look like
 - **Frequently asked questions and resources**





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Questions?

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Legend:

- Light Rare Earth Elements
- Heavy Rare Earth Elements
- Critical Rare Earth Elements
- Critical Minerals

H	He																	He														
Li	Be																	B	C	N	O	F	Ne									
Mg																	Al	Si	P	S	Cl	Ar										
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr															
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe															
Cs	Ba		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn															
Fr	Ra		Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og															
																		La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
																		Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

* Gas: K, Ar, Ne, Xe, Rn, He. ** Included with rare earth elements.

