



# Introduction to Brightfields & EPA Brownfield Grants: Opportunities & Challenges

October 2023

*In partnership with*



**TAB**  
Technical Assistance  
to Brownfields

**KANSAS STATE**  
UNIVERSITY

# Today's Agenda

**Welcome & Introductions**

**Brightfields Basics**

**Brightfields' Potential**

**Brightfields' Benefits and Challenges**

*Break*

**Introduction to EPA Brownfields Grant Program**

**Selecting Your Brightfield Site**

**Wrap-up & Next Steps**



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# Technical Assistance to Brownfields (TAB)

- Nationally funding program by U.S. EPA
- Technical assistance for communities and tribes revitalizing communities through brownfields redevelopment
- Services provided are free and tailored to meet specific needs



**TAB**  
Technical Assistance  
to Brownfields

**KANSAS STATE**  
UNIVERSITY



# Technical Assistance to Brownfields (TAB)

University of Connecticut EPA Region 1

New Jersey Institute of Technology (NJIT)

EPA Region 2 (Region 4 beginning 1 Oct. 2023)

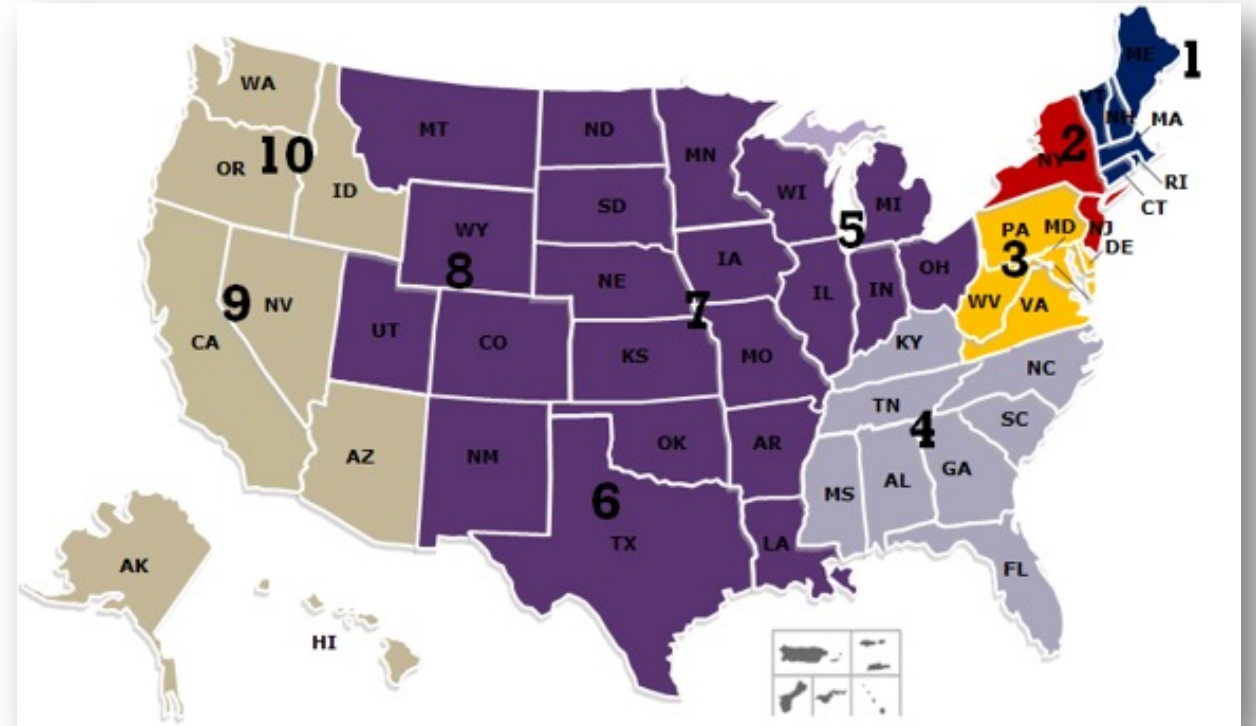
The West Virginia University EPA Region 3

The International City/County Management Association EPA Region 4

Kansas State University – EPA Regions 5, 6, 7 & 8

Center for Creative Land Recycling (CCLR)

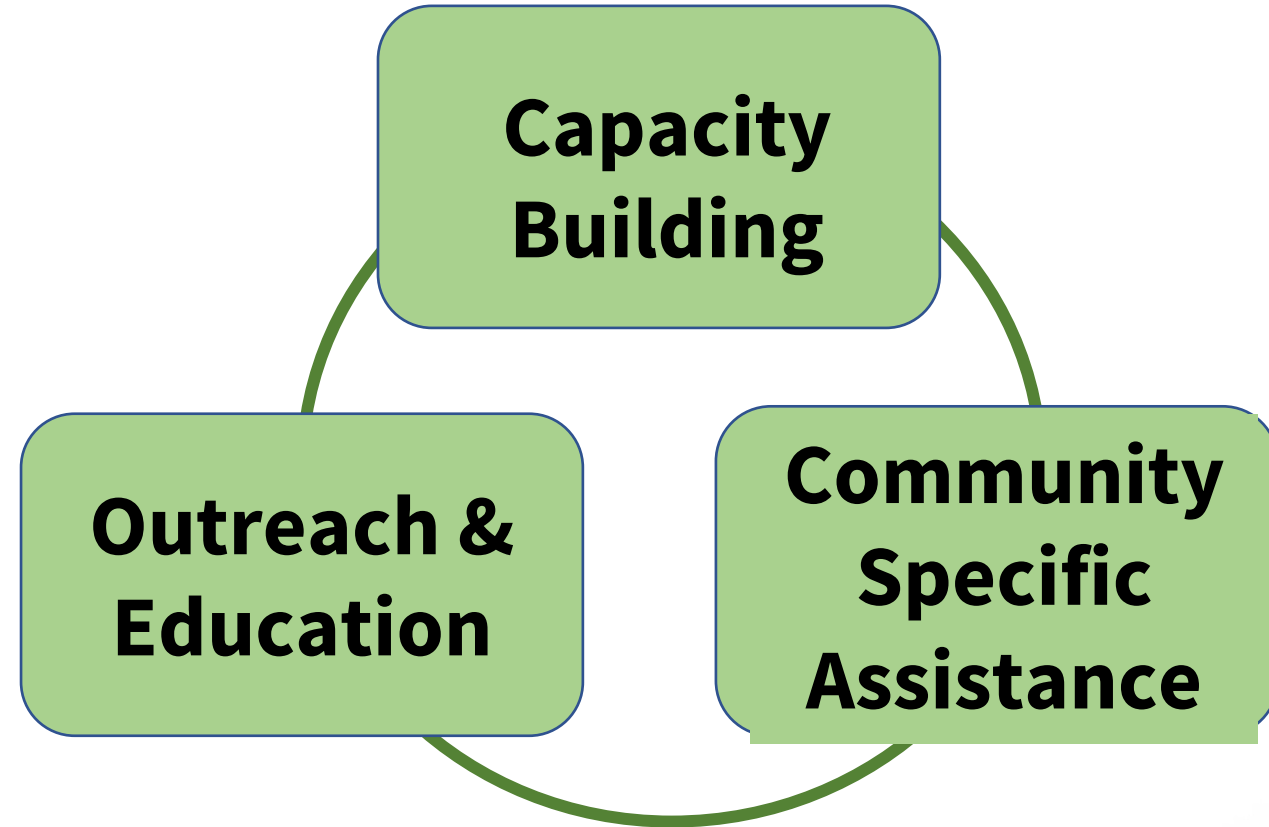
EPA Regions 9 and 10



# KSU TAB Services

## May include:

- Help to identify, inventory & prioritize brownfield sites
- Strategic planning and redevelopment visioning
- Incorporating clean energy into redevelopment
- Economic feasibility and highest/best use market analysis
- Building community resiliency
- Educational workshops and webinars
- Community outreach and input
- Help identify funding sources
- Review of U.S. EPA Brownfields grant applications
- Help in contractor procurement
- Review of plans and technical reports



# KSU TAB and Partners Resources

- Brownfield Assessment and Cleanup
- Redevelopment Strategies
- Site Design
- Leveraging Funds
- Public/Private Partnerships
- Economic Impact Analysis
- Market Studies
- Real Estate Finance
- Tribal Brownfields funding
- Solid and Hazardous Waste
- Infrastructure and Transportation
- Community Engagement
- Area Wide Planning
- Public Housing
- Historic Preservation
- EJ Outreach and Involvement
- Indigenous Planning
- Sustainability
- Resilience
- Community Gardens
- Healthfields
- Database Management



# Rocky Mountain Institute (RMI) is an independent, non-partisan, nonprofit organization dedicated to accelerating a prosperous, clean energy future for all

## What We Do:

- *Founded in 1982, RMI combines research, whole-systems thinking, and unconventional partnerships to support strategies that makes sense for communities to advance sustainable energy systems*



**RMI is partnering  
with KSU TAB to  
help communities  
across America  
advance  
transformational  
brightfield projects.**

***Our goals are...***



To ***educate communities and site owners*** about brownfields reuse options that include clean energy



To ***provide pre-development site evaluation and analysis*** to communities considering “brightfields”



To ***provide other technical assistance and tools*** to help with reuse planning, funding, financing, and clean energy procurement

# Virtual Workshop Ground Rules

## Be Present

- Close other apps (email, messaging, etc.) except Zoom as if we were in person

## Be Seen

- Keep your video on during discussions or activities, if possible

## Be Aware

- Keep yourself muted during presentations/when others are speaking
- Create space for others to contribute

## Embrace a Learning Environment

- This is an introduction to the topics for many participants
- This is *not* a sales environment – anyone who violates that will be removed

# Welcome to “Preparing for Brownfields Grants with Clean Energy Reuse in Mind”

## What you will get from this workshop series

1

Develop strategies to integrate potential brownfields sites into EPA brownfields grants applications to enhance application strength and competitiveness

2

Understand federal and state funding opportunities suitable for brownfields reuse



Free  
Workshops



Free Tools  
& Resources



Peer  
Learning



Free 1:1 Application  
Assistance

# Preparing for Brownfields Grants with Clean Energy Reuse in Mind





# Workshop 1 Introduction to Brightfields & EPA Brownfield Grants: Opportunities & Challenges

## Objectives

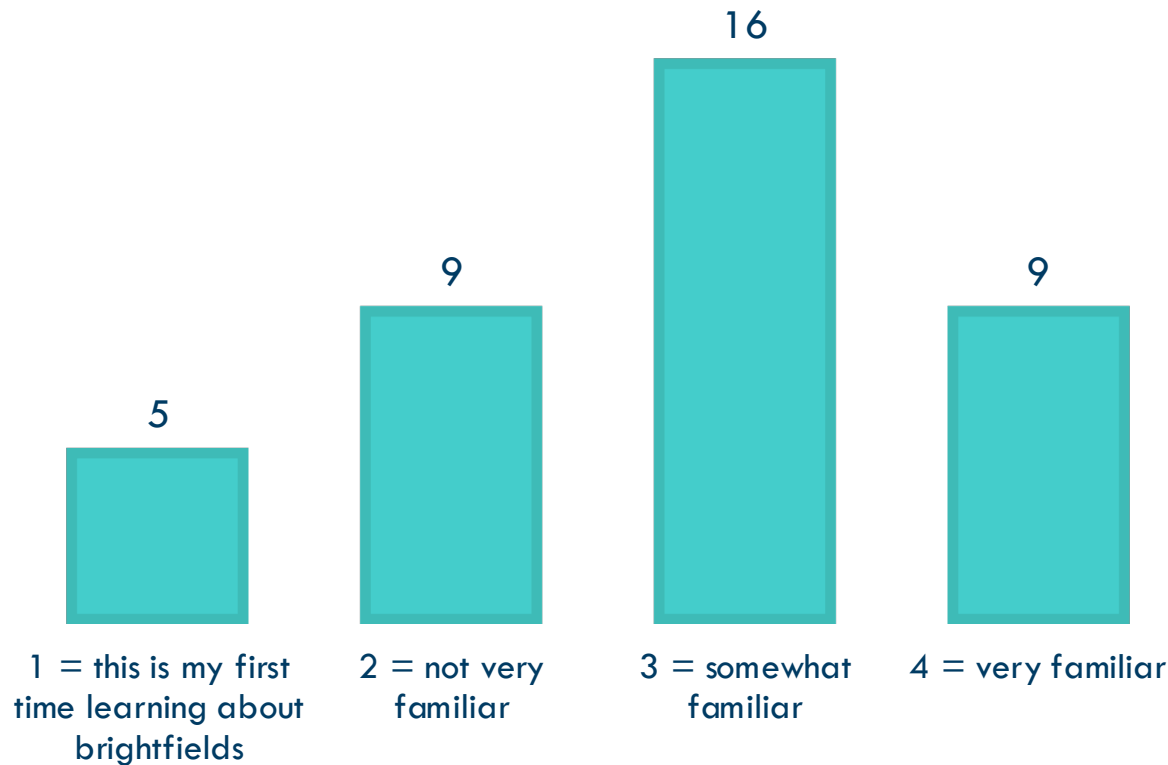
1. Gain a foundational understanding of transformation of brownfields into brightfields.
2. Learn about EPA brownfields grants.

## Agenda

- Welcome & Introductions
- Brightfields Basics
- Brightfields' Potential
- Brightfields' Benefits and Challenges
- Break
- Introduction to EPA Brownfields Grant Program
- Selecting Your Brightfield Site
- Wrap-up & Next Steps

# Who's joining us today?

HOW FAMILIAR ARE YOU WITH "BRIGHTFIELDS"  
AS A BROWNFIELDS REUSE STRATEGY?



- **60%** of registrants are very likely to apply for a US EPA brownfield grant in 2023 or 2024.
- **40%** of registrants strongly agree that "Brightfields are a good fit for my community/site."



# Poll Questions

# Today's Agenda

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# What is a “brightfield”?



## Brownfield (noun):

- A property whose expansion, redevelopment, or reuse may be complicated by the *presence* or the *potential presence* of a hazardous *substance*, *pollutant*, or *contaminant*.
- Common brownfields include former industrial sites, inactive landfills/dumps, old factories, abandoned mines, and closed power plants.



# What is a “brightfield”?



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## Brightfield (also a noun):

- A redevelopment where clean energy is built on a former brownfield or Superfund site.

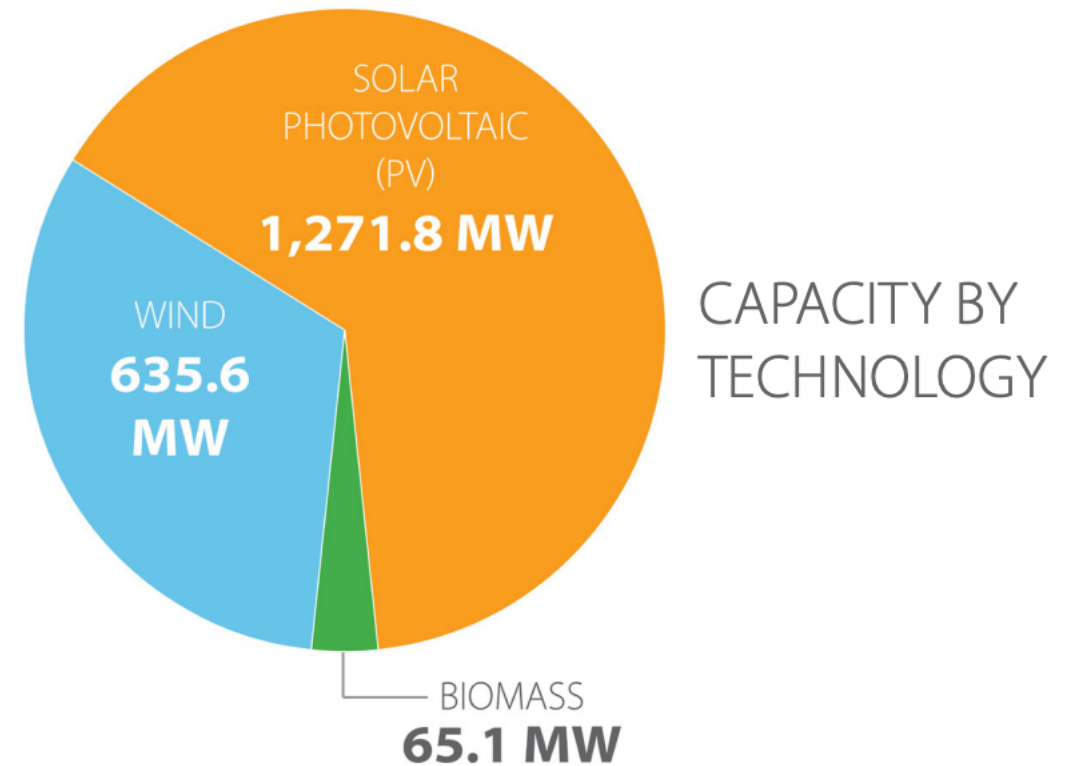
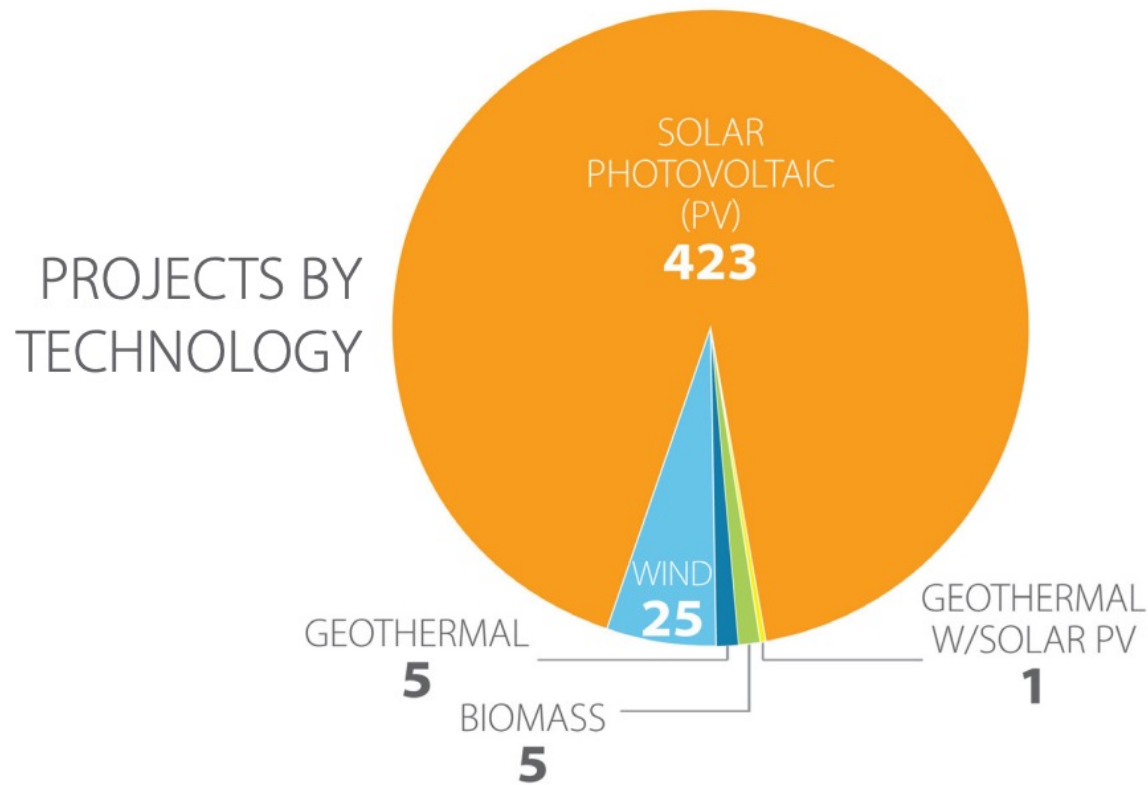


**Brightfields come in  
all shapes and sizes.**





# Most existing brightfields use solar power, but they can include other renewable technologies, too





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*Break*

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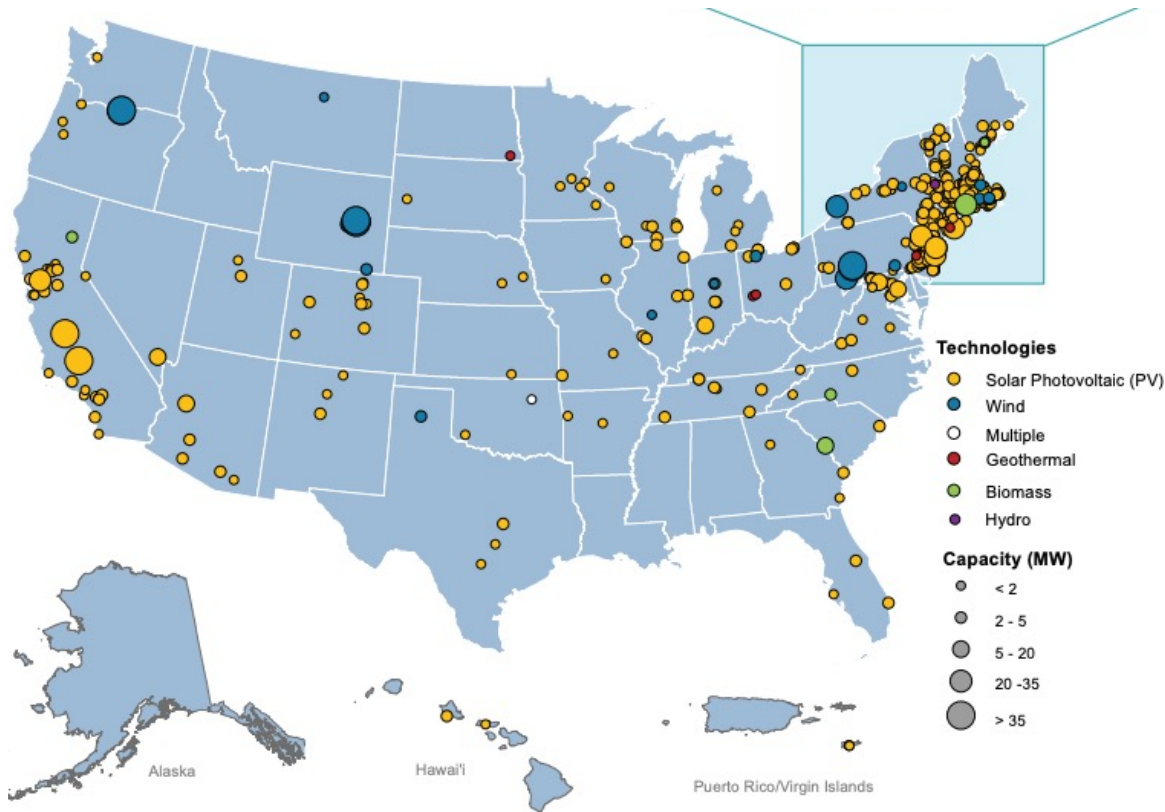
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**Wrap-up & next steps**

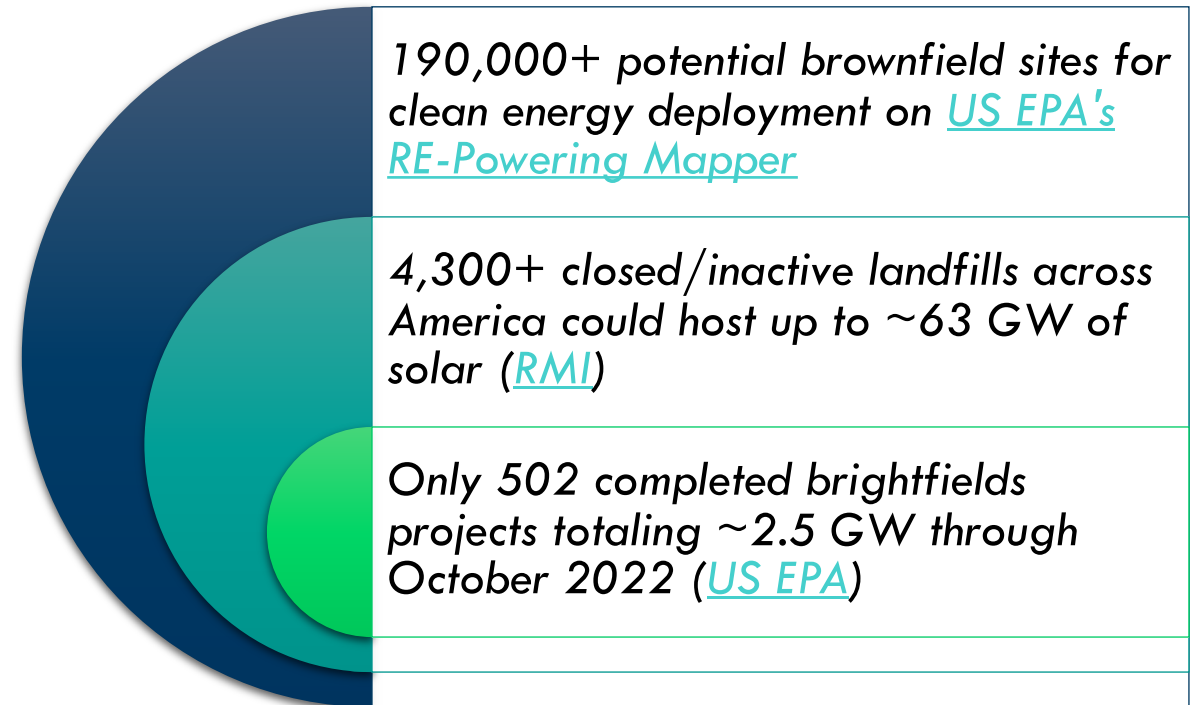
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# Brightfields offer a large (yet mostly untapped) potential market

*Brightfields Deployed Across US by Technology*



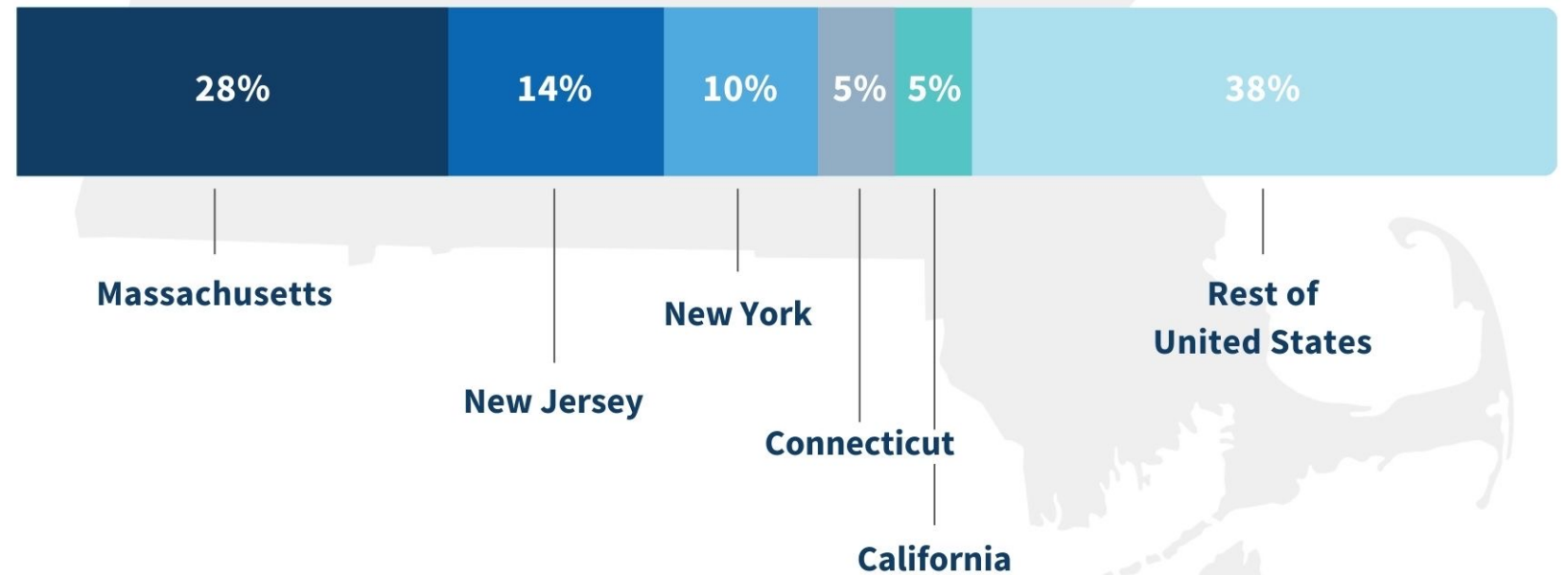
Source: [US EPA Re-Powering America's Land Tracking Matrix 2022](#)



*Just 1% of potential brightfields sites could support  
~6 GW of clean energy and 60,000+ jobs.*

**Brightfields are growing across the country, yet 62% of the progress has been in just 5 states**

### Geographic Concentration of Installed Brightfield Projects



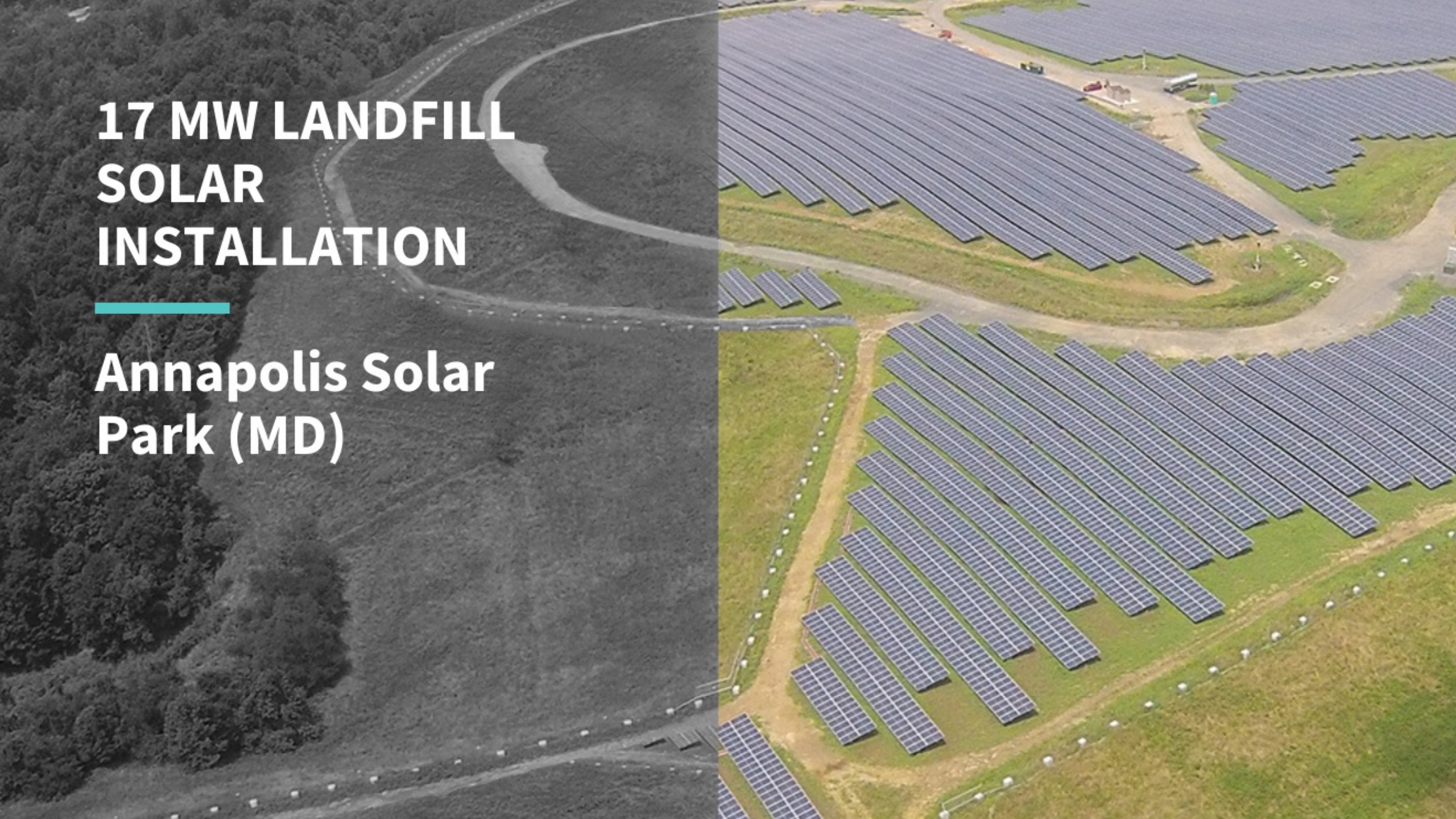
**Source:** EPA's RE-Powering America's Lands Initiative: Project Tracking Matrix, October 2021



# 17 MW LANDFILL SOLAR INSTALLATION

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Annapolis Solar  
Park (MD)





# Brightfields are becoming more common – and more ambitious in scale

**The Review**

**Solar farm planned for former WSX property on Brown's Island**

*~30 MW in West Virginia*

**COLUMBUS  
BUSINESS FIRST**

**Franklin County's former landfill will soon become a giant solar farm**

*~50 MW in Ohio*

**The New York Times**

***Coming Soon to This Coal County: Solar, in a Big Way***

In Martin County, Ky., where coal production has flatlined, entrepreneurs are promising that a new solar farm atop a shuttered mine will bring green energy jobs.

*~200 MW in Kentucky*

**pV magazine**

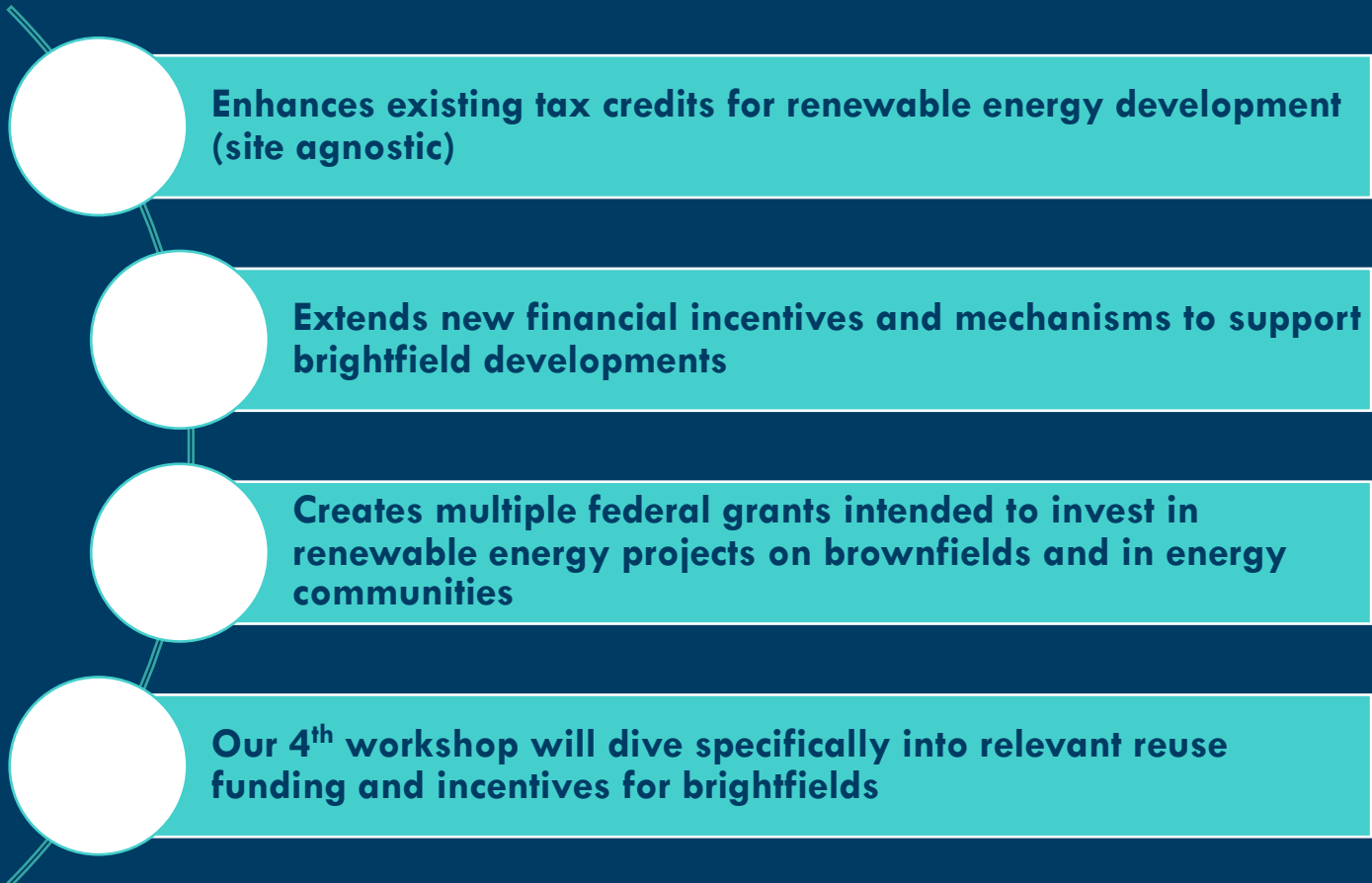
**Former Houston landfill set to become the country's largest urban solar project**

The 50 MW Sunnyside solar project is set to be constructed on 240 acres of former landfill land just outside of downtown Houston.

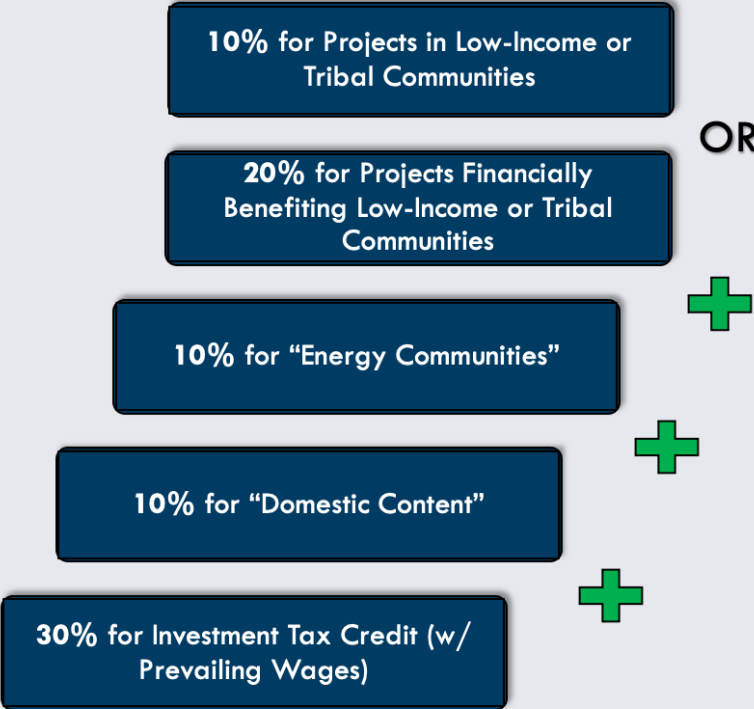
JANUARY 21, 2021 **TIM SYLVIA**

*~52 MW in Texas*

# Recently created and enhanced incentives in the Inflation Reduction Act (IRA) increase financial feasibility for clean energy reuse



## THE STACK OF IRA “ADDERS” FOR CLEAN ENERGY PROJECTS



Note: While the PTC is calculated differently, the incentive ratios stack the same.

# The opportunity exists to repurpose thousands of sites and transform communities

There are hundreds of thousands of brownfields available

The technical potential of brightfields is significant

There are new and enhanced federal incentives to advance brightfields





***By understanding what is possible, communities and site owners can plan to repurpose their closed landfills and other brownfield sites with clean energy – and how this can be a part of broader community revitalization.***



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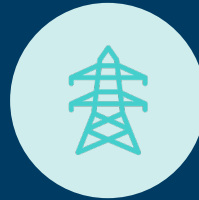
**Wrap-up & Next Steps**

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# Communities can leverage brightfields to deliver wide ranging local benefits



Sustainable land reuse



Using existing infrastructure



Local jobs & site revitalization



Environmental justice







Public health



Public relations & local leadership

# Closed landfills are particularly promising sites for hosting solar energy

	<b><i>Conducive Site Conditions</i></b>	Landfills typically have good sun exposure and other characteristics that support solar energy installation.
	<b><i>Limited Reuse Options</i></b>	Closed landfills have few, if any, competing redevelopment options, and using landfills avoids land-use conflict with other revitalization priorities.
	<b><i>Environmental Justice</i></b>	Landfill solar offers a sustainable, non-hazardous reuse of sites that were often prior areas of environmental injustice .
	<b><i>Potential for Scale</i></b>	Landfill solar is highly scalable. There are thousands of active landfills in the US, and many thousands more that are already closed and inactive.

# Addressing past/present environmental injustice

**Many brownfields are in or adjacent to historically neglected and majority non-white populations. Developing brightfields can be *part* of the solution.**

## Example: Oxon Run Solar Farm in Washington, DC

- 2.65 MW array constructed with local contractors on site contaminated by years of gas station residue
- Provides low-cost power to ~780 qualifying residents in Ward 8, where 86% of households are Black and 20% are below the poverty line
- Lowers electric bills 50% on average for subscribers, estimated at ~\$500 per year
- Restores native ecology, including pollinator habitats and native plant landscaping





# Developing the local workforce and creating economic opportunity



Source: BQ Energy

## Example: Houston, TX

- World's largest landfill solar farm planned and permitted for low-income and historically marginalized Sunnyside neighborhood
- 52 MW on 240 acre-closed landfill
- Expected to power ~12,000 homes
- Project includes a solar training program aimed at bolstering a local and regional workforce

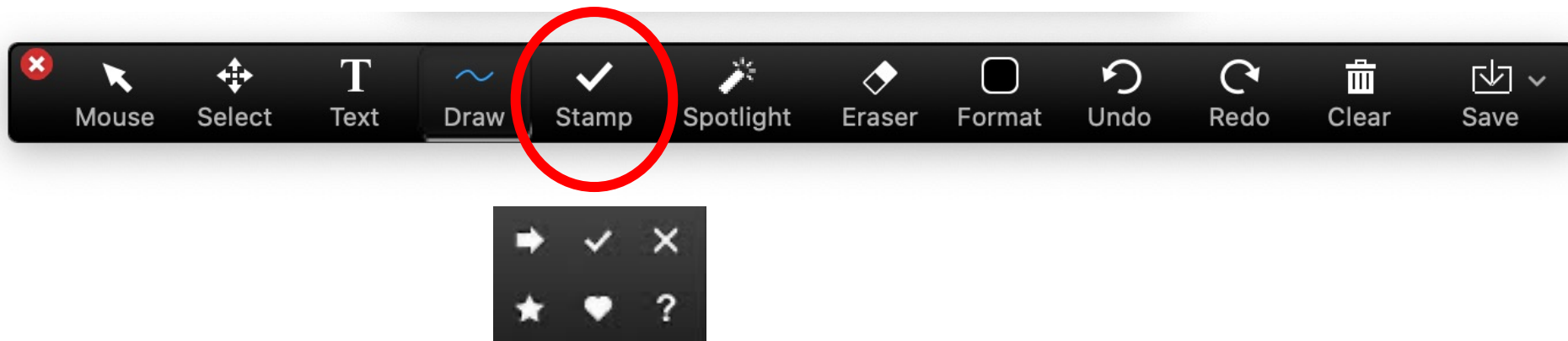
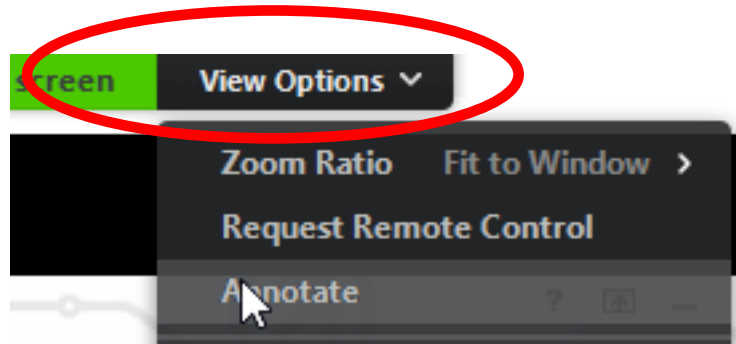
# Promoting the highest and best uses of *existing* sites, facilitating substantiable land use

Encouraging development on existing sites reduces the need for greenfield land.

**Example: Method-Ecover Factory  
(Chicago, IL)**



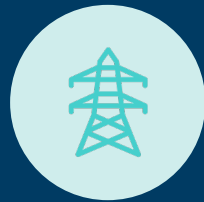
# How to Annotate and “Stamp” on Zoom



# Communities can leverage brightfields to deliver wide ranging local benefits



Sustainable land reuse



Using existing infrastructure



Local jobs & site revitalization



Environmental justice



Public health



Public relations & local leadership

**Annotate: Which of these benefits are most important to your community?**



**Let's Discuss: Are there other benefits of  
brightfields that we didn't cover?**

# Brightfields are not without their complications compared to undeveloped or vacant land

- **Assessment & cleanup costs**

*Local governments and developers may need to invest time and resources to evaluate and clean up brightfield sites, which can increase project costs*

- **Federal, state, and local regulations**

*Permitting, zoning, land-use, and environmental reviews can add complexity to site requirements*

- **Site remediation timeline**

*Ongoing remediation activities will likely need to be completed before beginning project construction*

- **Liability between stakeholders**

*Clarity on liability is critically important to share with developers during procurement, who may view contaminated sites as riskier*

- **Grid interconnection**

*Interconnection costs and timelines can vary substantially between projects due to existing infrastructure*

**Let's Discuss: Which of these do you anticipate being the most challenging in your community?**

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**Questions?**

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# EPA Brownfields Grant Funding 2023



## MULTIPURPOSE

- **\$1MM**
- Develop inventories & prioritize sites
- Conduct community involvement activities
- Conduct environmental site assessments
- Develop cleanup plans and reuse plans related to brownfield sites
- Conduct cleanup activities on brownfield sites owned by the applicant



## ASSESSMENT

- States/Tribes: **\$2MM**
- Coalition: **\$1.5 MM**
- CWA: **\$500,000**
- Develop inventories & prioritize sites
- Conduct community involvement activities
- Conduct environmental site assessments
- Develop cleanup plans and reuse plans related to brownfield sites



## CLEANUP

- **\$500,000, \$2MM or \$5MM**
- For sites with well-defined environmental contamination
- Remedial activities
- Implement engineering & institutional controls
- Single site or multiple sites per grant
- Applicant must own the site(s)
- Cost share is not required

# Anticipated FY2023 Awards

Grant Type	Maximum Project Period	Maximum Amount Per Grant	Estimated Number of Awards	Total Per Grant Type – BIL Funds	Total Per Grant Type – Reg. Appropriated Funds
Multipurpose	5 Years	\$1,000,000	20		\$20.0 Million
Community Wide Assessment Grants (States and Tribes)	5 Years	\$2,000,000	25	\$50.0 Million	
Assessment Coalitions	4 Years	\$1,500,000	26		\$40.0 Million
Community Wide Assessment (New)	4 Years	\$500,000	30		\$15.0 Million
Community Wide Assessment (Existing)	4 Years	\$500,000	30		\$15.0 Million
Cleanup	4 Years	\$500,000	40	\$20.0 Million	
Cleanup	4 Years	\$2,000,000	17	\$35.0 Million	
Cleanup	4 Years	\$5,000,000	8	\$40.0 Million	

# Applicant Eligibility

- Local units of government
  - Cities\*, counties, municipal depts., school districts, etc.
  - \*Some limitations & considerations for coalitions
- States
- Indian Tribes
- Planning and Redevelopment Authorities
- Special districts of government
- Other organizations chartered by State legislatures
- 501(c)(3) non-profits
- IRS Community Development Entities (NMTCS)

Grant criteria includes emphasis:

- ❖ on how the proposed project will improve local climate adaptation/mitigation capacity and resilience to protect residents and community investments; and,
- ❖ the extent to which the reuse of the priority site(s) will facilitate renewable energy from wind, solar, or geothermal energy, or will incorporate energy efficiency measures



# Identify Community Based and Leveraging Partners

- Start working with your community **early** to establish a process and procedures for engaging them.
- Begin identifying and forming partnerships that are critical to the success of your program. The **quality** of partnerships is more important than **quantity**.
  - ❖ KSU TAB can assist communities in determining appropriate partners and developing the partnership
- Identify roles and responsibilities: Know which departments you will need to administer grant.
  - ❖ KSU TAB can assist with overall grant strategies
- Identify specific site(s)/area(s) in need of assessment. TAB BiT can be a helpful tool!
- TAB EZ grant-writing tool
- KSU TAB conducts **free** reviews of draft applications





# Bipartisan Infrastructure Law

## Additional Funding Opportunities

- Increased funding for non-competitive brownfield assessments
  - ❖ EPA Regions and State Targeted Brownfields Assessments
- Increased funding for non-competitive site assessments, site design, and financial planning technical assistance
  - ❖ EPA Land-Revitalization Technical Assistance
  - ❖ KSU TAB Technical Assistance
  - ❖ Other EPA Technical Assistance Providers

<https://www.epa.gov/brownfields/brownfields-technical-assistance-and-research>
- EPA Brownfields Job Training Grants – June/July



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**Questions?**

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**Wrap-up & Next Steps**

# Brightfields Site Selection Checklist



## Strategic Reuse:

- ☐ *Is this a productive reuse of the site?*
  - ☐ Does this reactivate a site without current plans?
  - ☐ Does this risk impeding future reuses nearby?
- ☐ *Is this the “highest and best use” of this site?*
  - ☐ How well does this align with existing site owner goals and/or community visioning?
  - ☐ Are zoning, right-of-way, or land-use conditions aligned with the proposed reuse for this site?
  - ☐ Can co-locating clean energy further enhance plans for the site?

## Technical Reuse:

- ☐ *Does the site seem like it can reasonably support clean energy?*
  - ☐ What clean energy technologies (i.e., solar, wind, geothermal, or energy storage) could make sense?
  - ☐ Are there serious concerns about shading (for solar), wetlands, or floodplains?
  - ☐ Is there infrastructure on-site or nearby that may complement clean energy reuse?
- ☐ *Is there a reasonable pathway for how the electricity generated would be consumed?*
  - ☐ Is there on-site or nearby demand for electricity?
  - ☐ Would the electricity support the utility’s grid?



# **Applying the Checklist**



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# Interested in support beyond EPA brownfields grants, funding, and financing?



## Identifying Your Most Promising Brightfields Opportunities

Site pre-screening  
Strategic reuse planning  
Utility engagement



## Funding & Financing Guidance

Unpacking brightfields-related incentives and funding strategy  
Assistance with brownfields grant applications



## Accelerating Brightfields Procurement

Clean energy procurement support  
Insights from the brightfields market



# Poll Questions



# Next Steps



**Slides & Notes** to be shared by October 6th.



Our next workshop will be held on October 25th.



The recording of today's presentation and all learning resources will be shared.

**Any final questions or comments before we end?**







# Thanks for joining us!

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- Ryan Warsing [rwarsing@rmi.org](mailto:rwarsing@rmi.org)

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*In partnership with  
Kansas State University's*



# TAB

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