RE-POWERING AMERICA'S LAND INITIATIVE

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State Program Selection & Design Tips

January 26, 2022

EPA

RE-POWERING AMERICA'S LAND INITIATIVE

1. Introduction
2. Why State Programs Matter: Impact Metrics
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1 Introduction

Why Renewables on Potentially Contaminated Sites?

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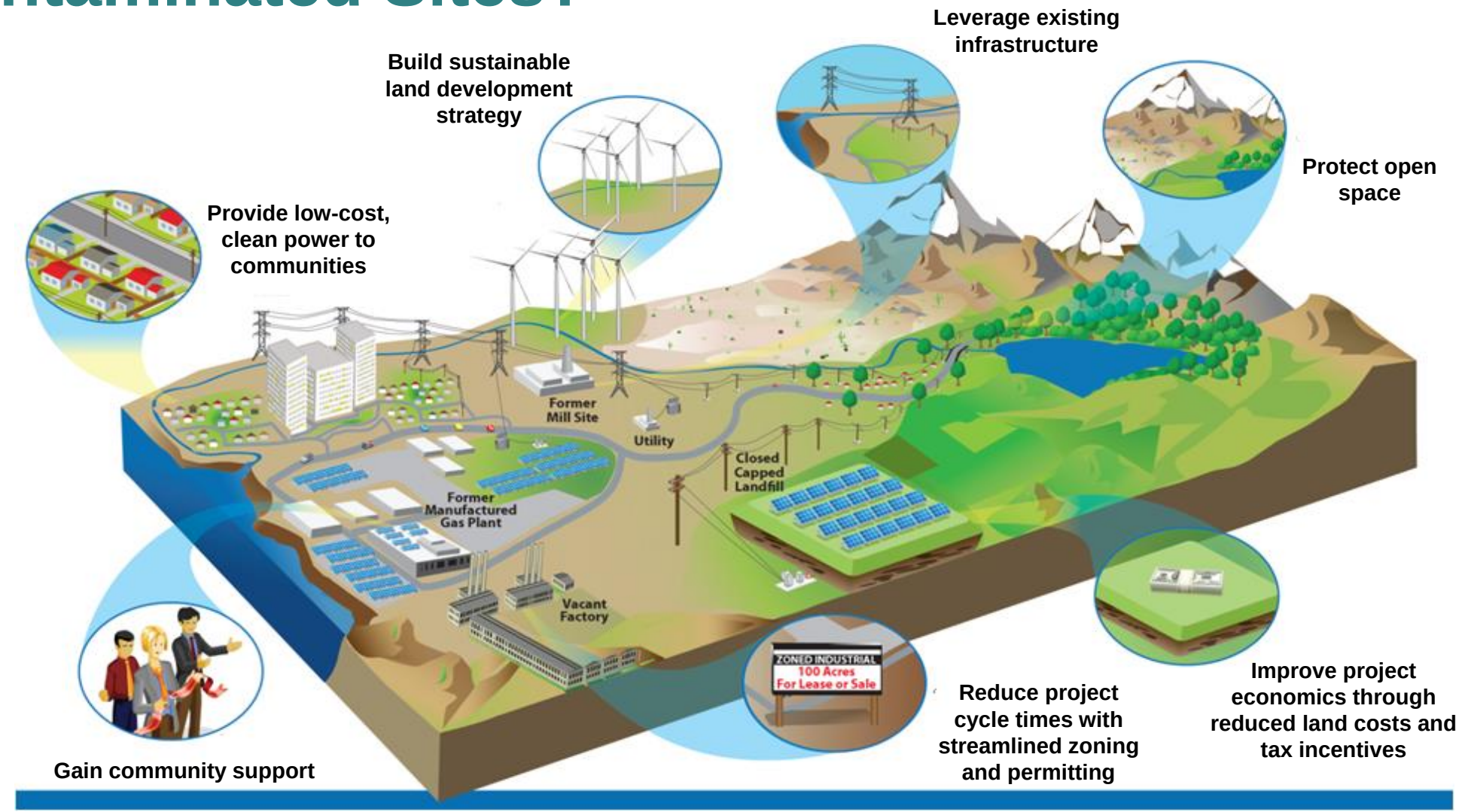


Purposes of the Document

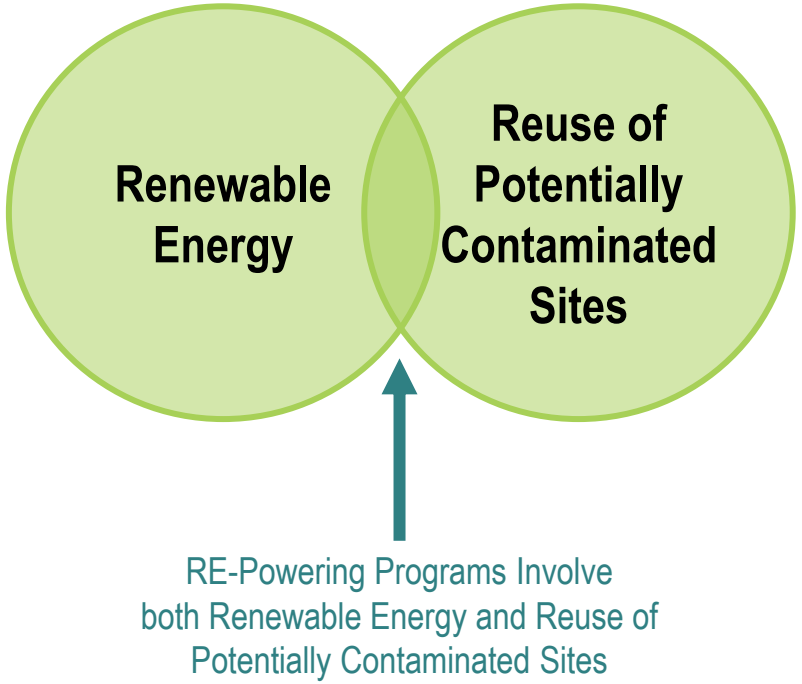
Increase knowledge

Increase knowledge of the influential role that state programs have played in the development of renewable energy on current and formerly contaminated lands, landfills, and mine sites.

Identify features

Identify state program features and best practices associated with renewable deployment success.

Key Concept


Renewable Energy
Reuse of Potentially Contaminated Sites
RE-Powering Programs Involve both Renewable Energy and Reuse of Potentially Contaminated Sites

Key Definitions

RE-Powering sites:

Current and formerly contaminated lands, landfills, and mine sites.

RE-Powering projects:

Renewable energy projects on RE-Powering sites.

Programs:

Collectively refers to organized policies, programs, and other activities performed by states to advance renewable energy on RE-Powering sites.

Addressing Climate Change: Leadership of States

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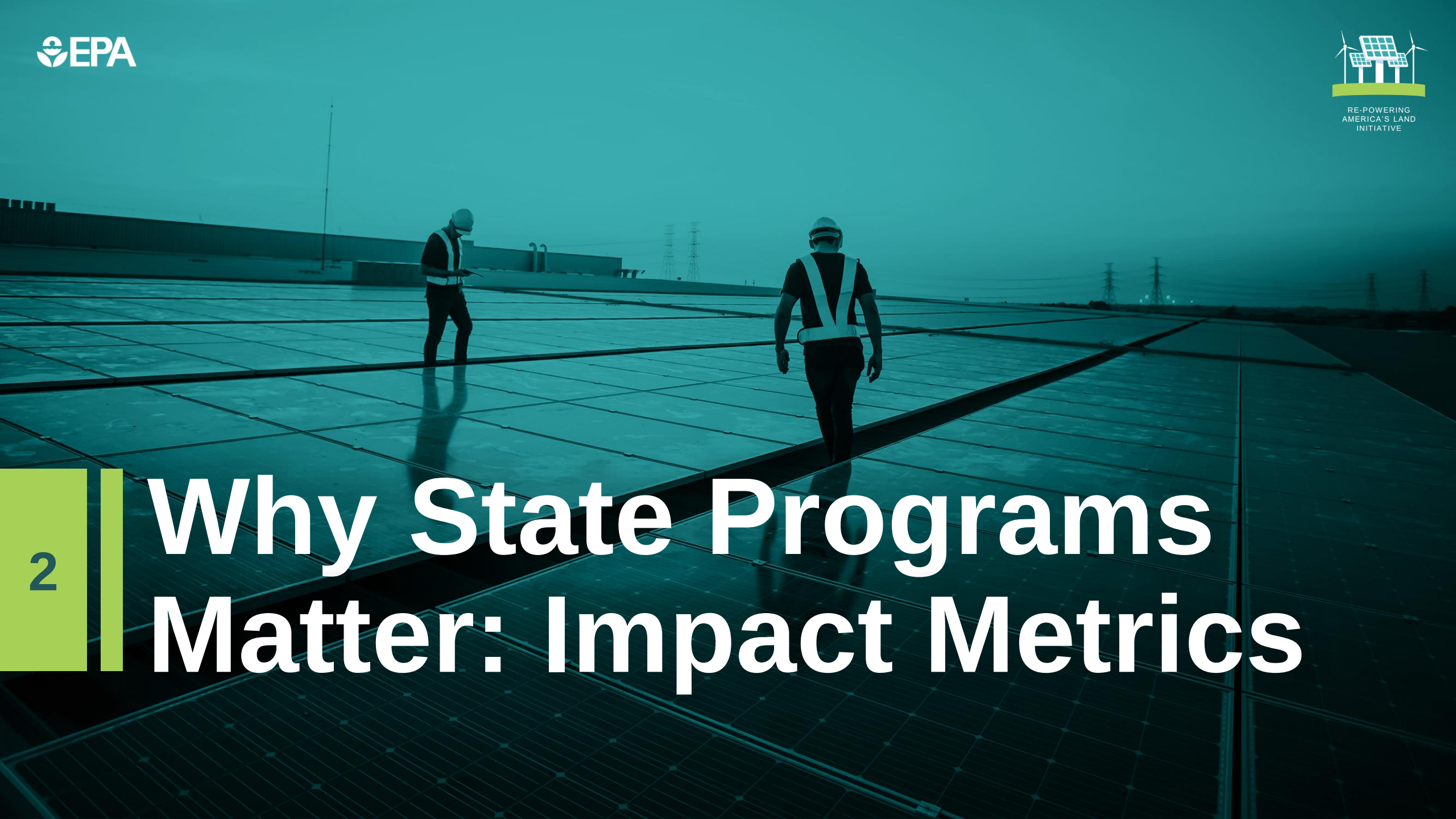
The Biden Administration set a 2030 Greenhouse Gas Pollution Reduction Target for the United States in April 2021. The Administration recognizes the leadership of states on climate change and calls for action.

America must act — and not just the federal government, but cities and states, small and big business, working communities. Together, we can seize the opportunity to drive prosperity, create jobs, and build the clean energy economy of tomorrow.

https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies



2 Why State Programs Matter: Impact Metrics

States with RE-Powering Programs

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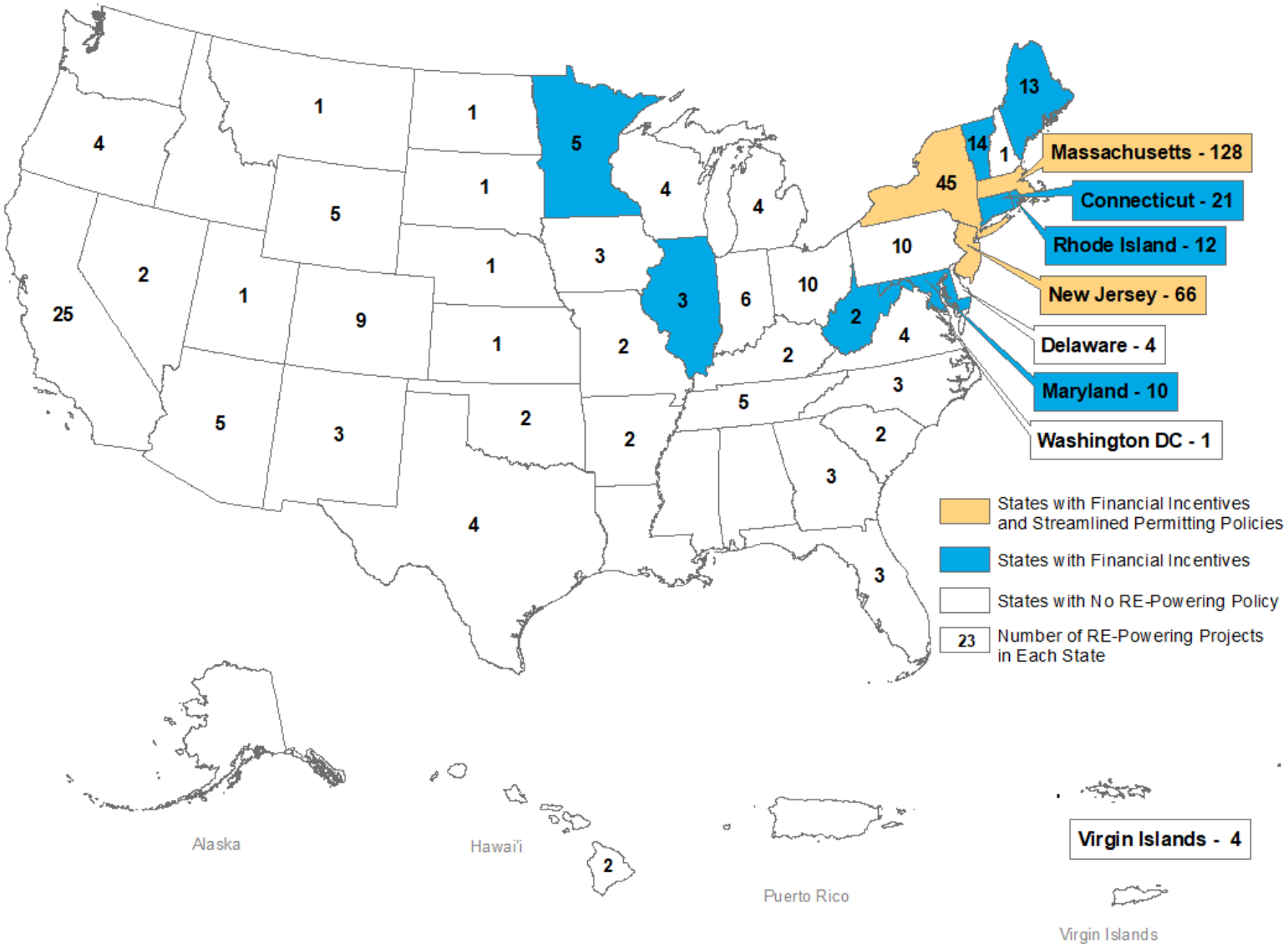

Note: This map designates a subset of state program types (direct financial incentives and procurement preferences or requirements, consolidated under the combined label of "financial incentives" on the map, and streamlined permitting/ environmental reviews for RE-Powering sites). The map is based on information available to EPA's RE-Powering Initiative in October 2021 and may not be comprehensive.

Source: EPA RE-Powering, *Tracking Matrix*, https://www.epa.gov/re-powering/re-powering-tracking-matrix

States with RE-Powering Programs have more Solar Capacity Installed

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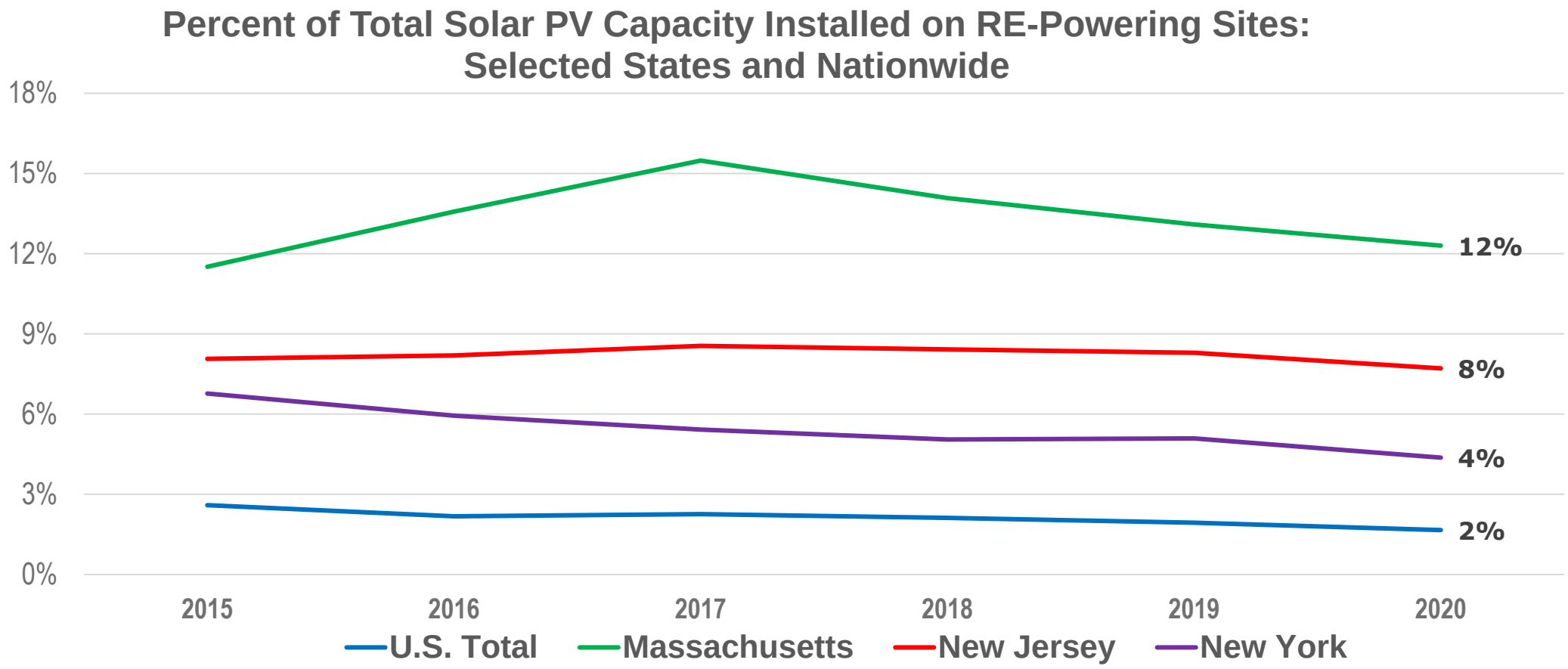

Note: This chart is based on information available to EPA at the time of its publication and may be incomplete.

Data Sources: EPA RE-Powering, *Tracking Matrix*, https://www.epa.gov/re-powering/re-powering-tracking-matrix; EIA, DOE, *State Electricity Profiles*, https://www.eia.gov/electricity/state/.

State Programs are Important Factors Guiding where Market Participants Decide to Invest

Renewable energy firms select states for landfill, brownfield, and mine site redevelopment based on the **cost**, **speed**, and **complexity** of project development.

State programs can reduce costs, timelines, and complexity. For example:

- **Direct financial incentives** and **procurement preferences or requirements** for RE-Powering sites level the playing field and make RE-Powering sites cost-competitive with other types of sites.
- **Streamlined permitting and zoning** for RE-Powering sites improve all aspects of development.
- Special **mapping tools** reduce cost and improve outcomes for site identification.

3

Process for States to Select Programs

4 Steps to Select RE-Powering Programs to Implement

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1

Inventory Current State Programs

2

Identify State Goals

3

Review Options

4

Rank and Select Programs

1 Inventory Existing & Proposed Programs in your State

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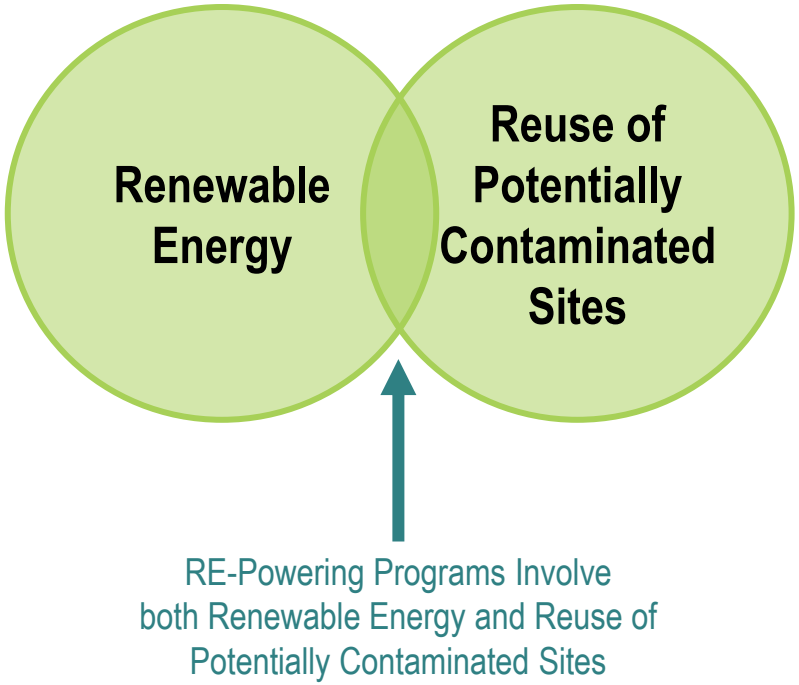
- **List existing or proposed renewable energy programs, without explicit components from potentially contaminated sites yet**

  E.g., energy procurement programs; feed-in-tariffs; streamlined project permitting; rebates; financing

- **List existing or proposed reuse programs for potentially contaminated sites, without explicit renewable energy components yet**

  E.g., Brownfield loans & grants; databases & mapping tools; state technical assistance

- **Identify programs, if any, that are already "RE-Powering programs"**



2 Identify State Goals that can be furthered by Programs

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Goals	Examples of Programs to Help Meet Goals
Preserve Agricultural & Other Green Space	▪ Higher financial incentives for landfills & brownfields, and incentive reductions for agricultural lands & greenfields ▪ Renewable energy procurement preferences or mandated minimum percentages for brownfields, landfills, & mine sites
Increase Overall Renewable Energy Development/ Reduce GHGs	▪ Liability relief to increase the amount of viable land ▪ Mapping tools & databases to increase awareness & knowledge of brownfield, landfill, & mine sites ▪ Early-stage development assistance for large-scale projects (which have the greatest greenhouse gas [GHG] impacts)

2 Identify State Goals that can be furthered by Programs *(continued)*

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Goals	Examples of Programs to Help Meet Goals
Accelerate Land Reuse Process	▪ Streamlined permitting, zoning, & environmental reviews for potentially contaminated sites being redeveloped for renewable energy ▪ Direct state technical assistance (on technologies, regulations, financing, permitting, etc.) for RE-Powering sites
Increase Environmental Justice Participation in Clean Energy & Land Reuse	▪ Community solar preferences for brownfields & landfills, which tend to be near environmental justice communities

3 Review Options that Advance State Goals

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I. **Identify programs appropriate to your state, given its renewable energy and land reuse goals**
   - Eight broad categories of programs exist in the U.S. *(see slide 29)*
   - There are more than 20 program types in these 8 categories *(see slides 30-31)*

II. **Reach out to EPA's RE-Powering representative in your EPA Region for information on programs in other states and suggested state agency points of contact**

3 Review Options that Advance State Goals *(continued)*

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III. Contact state agency officials to understand the context, design, cost, implementation timeline, and impact of programs of interest

- Ask how programs build on their existing efforts
- Obtain suggestions from external stakeholders

IV. Think about who could be a "champion" to design and help implement each promising program

- ***Tip:*** Consistent champions or sponsors, who understand renewable energy development and potentially contaminated sites, are important to program launch

V. Document the results of your review

4 Use Scorecard to Rank Programs

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Program Criteria	Criteria % Weight	Program 1	Program 2	Program 3
Expands existing program				
Complements existing program				
Leverages common type of potentially contaminated sites in state				
Can be implemented without new legislation				
Speed to implement				
Directly improves renewable project economics				
Expected land use impacts				
Expected environmental impacts				
Matches agency staffing levels and expertise				
Meets disadvantaged community/ environmental justice (EJ) objectives				
Aligns tightly with state goals/has strong sponsorship				
TOTAL SCORE				

Instructions: Insert criteria weights based on state goals (from Step 2), with weightings summing to 100%. Insert scores for each of three high-potential program options (from Step 3) in the appropriate cell. Scores can be based on a scale of 0-3, where 0 means the program option does not meet the criterion at all and 3 indicates meeting it very well.

4 Example Completed Scorecard

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Program Criteria	Criteria % Weight	Program 1	Program 2	Program 3
Expands existing program	**10%**	0	0	3
Complements existing program	**10%**	0	2	3
Leverages common type of potentially contaminated sites in state	**5%**	3	3	1
Can be implemented without new legislation	**5%**	0	3	3
Speed to implement	**5%**	1	3	3
Directly improves renewable project economics	**10%**	0	3	2
Expected land use impacts	**10%**	2	2	2
Expected environmental impacts	**10%**	2	2	2
Matches agency staffing levels and expertise	**10%**	1	1	3
Meets disadvantaged community/EJ objectives	**10%**	0	1	3
Aligns tightly with state goals/has strong sponsorship	**15%**	3	2	2
TOTAL SCORE	**100%**	**1.2**	**2.2**	**2.7**

Note: Criteria weights and scores here are hypothetical. Scores are based on a scale of 0-3, where 0 means the program option does not meet the criterion at all and 3 indicates meeting it very well. The total score is calculated by multiplying each criterion weight by the respective program score and, then, summing the resulting products in each program column.

4 Additional Background on Program Ranking Criteria

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Program Criteria	Comments/Examples
Expands existing program	* Many high-impact RE-Powering programs link to existing renewable incentive programs
Complements existing program	* Streamlined permitting for potentially contaminated sites complements renewable incentives
Leverages common type of potentially contaminated sites in state	* For example, Massachusetts' programs took great advantage of the large number of municipal landfills with up to 30 acres of solar-ready space
Can be implemented without new legislation	* Programs requiring new legislation will typically take longer than other programs
Speed to implement	* Apart from legislative requirements, many other factors can affect speed to implement and, thereby, speed to realize reuse, economic development, EJ, and GHG objectives
Directly improves renewable project economics	* For example, financial incentives can lower development costs or increase revenues to make projects on RE-Powering sites competitive with projects on other types of sites
Expected land use impacts	* Land use and environmental impact metrics can be acres reused and annual metric tons of GHGs avoided, respectively. Stakeholders, such as developers with experience on potentially contaminated sites, can help identify programs with the greatest impact
Expected environmental impacts	
Matches agency staffing levels and expertise	* The scale and background of energy, environmental, and economic development staff vary widely from state-to-state
Meets disadvantaged community/EJ objectives	* These objectives can be met by explicit program criteria (e.g., eligibility requirement or preference) and/or implicitly by reusing land types common to EJ communities
Aligns tightly with state goals/has strong sponsorship	* Consistent leadership from the Governor, agency leads, & legislatures is critical to success

4

Tips & Other Considerations for Programs

Tips for Implementing Programs

Pilots

- Consider designing new programs with early pilot phases, with subsequent full programs drawing from pilot lessons learned.

Stakeholders

- Coordinate early and consistently among internal and external stakeholders.
- External stakeholders may include renewable energy developers, EJ communities, utilities, land use and environmental groups, and others.

Timelines

- Recognize that states with significant RE-Powering results have combined several program types and have implemented them over long periods.
- It can take 3+ years from a program's initiation to see results in installed projects, due to the length of the renewable energy project development cycle.
- Programs that require enabling legislation may take up to several years to get to the program initiation stage.

Special Considerations when Designing State Programs for Large Projects

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States are increasingly concentrating on large capacity projects to satisfy climate and renewable energy goals.

Large capacity projects typically take longer to develop than smaller projects.

Developers capable of and interested in developing large projects may be different from those active on smaller potentially contaminated sites, which are typically much more common in the state.

See next slide for national data on RE-Powering project sizes.

Sizes of Typical RE-Powering Projects

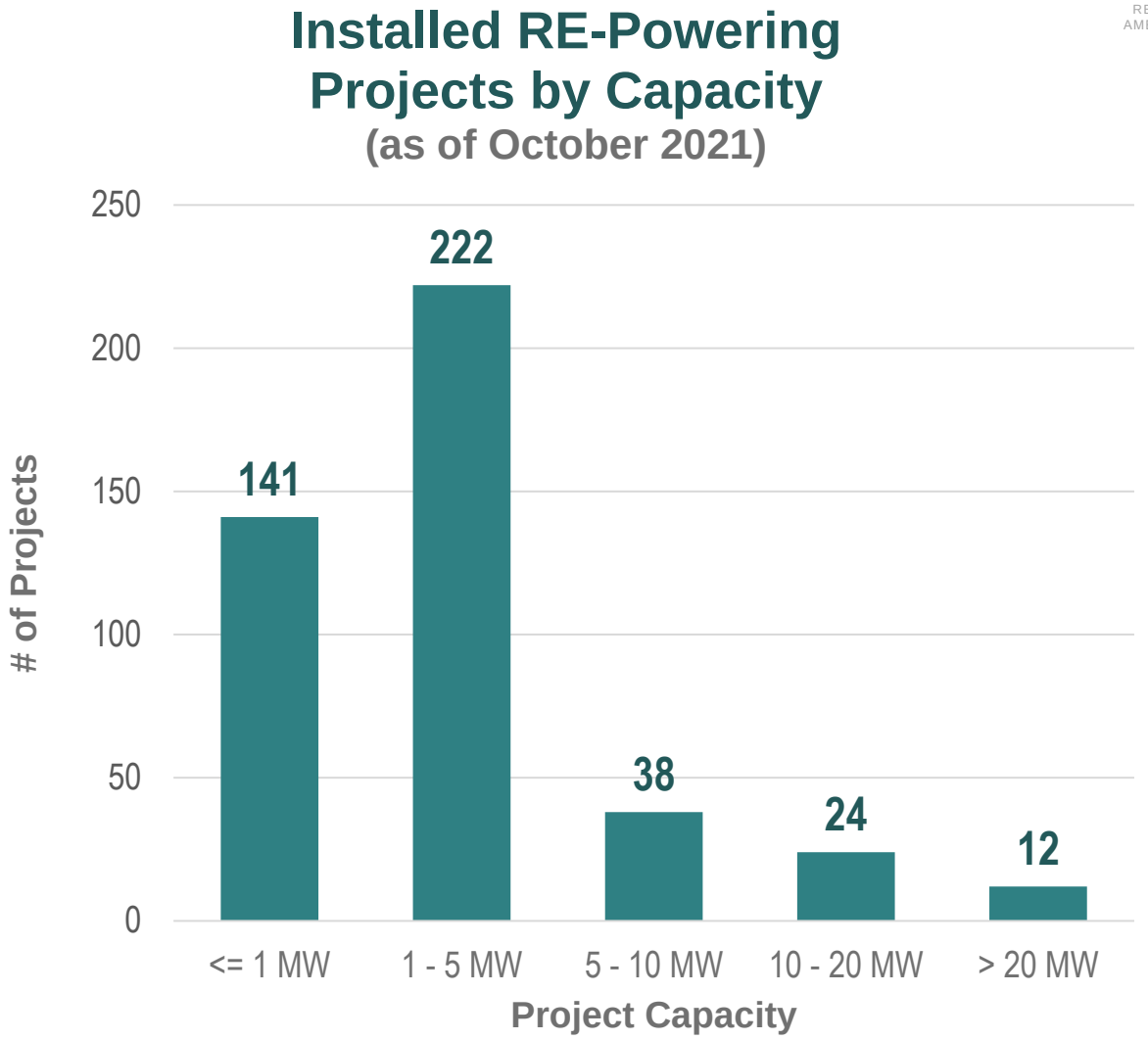
- **There is wide variation in project sizes.**
- **Overall, 83% of RE-Powering projects are 5 megawatts (MW) in capacity or less.**

  Only 3% are larger than 20 MW.

- **RE-Powering wind projects tend to be much larger than solar projects.**

  Average wind project size is 32 MW versus 3 MW for solar.

  Solar is much more common, representing 92% of all RE-Powering projects.



Data Source: EPA RE-Powering, *Tracking Matrix*, https://www.epa.gov/re-powering/re-powering-tracking-matrix

For More Information

RE-Powering home page:

https://www.epa.gov/re-powering

Contact:

Lora Strine,
EPA RE-Powering Team Leader
strine.lora@epa.gov

Thumbnail Descriptions of State Programs from National Map

Available upon request from EPA RE-Powering

5

Appendix: State Program Types & Examples

Eight Common Categories of State RE-Powering Programs

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1. Direct Financial Incentives
2. Procurement Preferences or Requirements
3. Site Identification & Development Support
4. Education & Outreach
5. Streamlined Permitting & Environmental Reviews
6. Liability Relief
7. General Brownfield Reuse
8. Inter-agency Coordination

Types of State Programs in Each Category

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1. Direct Financial Incentives

Production-based or capacity-based increased incentives; offtake agreements; grants

2. Procurement Preferences or Requirements

Brownfield, landfill, or mine siting as important rating factor in state or utility electricity procurements; mandated minimum procurement percentages from potentially contaminated sites

3. Site Identification & Development Support

Databases; mapping tools; direct technical assistance from state staff or state contractors; hands-on project development by state

4. Education & Outreach

Guides; templates; toolkits; training presentations; dedicated webpages

Types of State Programs in Each Category *(continued)*

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5. Streamlined Permitting & Environmental Reviews

Expedited processes; central coordination; favorable ordinances

6. Liability Relief

Laws, regulations, or enforcement discretion to reduce renewable energy landowner, developer, and/or operator liability

7. General Brownfield Reuse

(not specific to, but also applicable to, renewable reuse)

Loans; grants; technical assistance

8. Inter-agency Coordination

Inter-agency, renewable-specific meetings and processes to remove development barriers; working groups

Massachusetts: Approved Solar Projects Receiving Added Financial Incentives for Landfills & Brownfields

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Site Type	Number of Projects	Total Project Capacity	Average Capacity per Project
"SREC-II" Program (between 2014 – 2018)			
Landfill	52	134 MW_{DC}	2.6 MW_{DC}
Brownfield	19	51 MW_{DC}	2.7 MW_{DC}
"SMART" Program (2018 through December 3, 2021)			
Landfill	12	27 MW_{AC}	2.3 MW_{AC}
Brownfield	2	5 MW_{AC}	2.5 MW_{AC}

Notes: The 85 projects receiving incentives from these two state programs are ~19% of all RE-Powering projects nationwide

MW = megawatt; AC = alternating current; DC = direct current

Source: Massachusetts Department of Energy Resources, *Lists of Qualified Generation Units*, https://www.mass.gov/service-details/lists-of-qualified-generation-units

New Jersey: Maps of Electric Utility Interconnection Capacity Combined with RE-Powering Site Data

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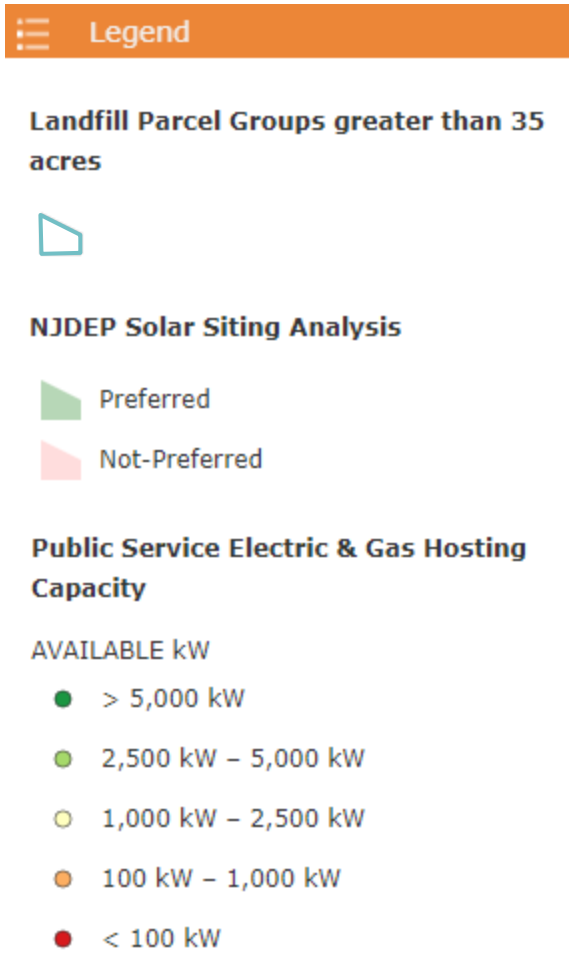

Source: New Jersey Department of Environmental Protection, *Solar Siting Analysis*, https://www.nj.gov/dep/aqes/solar-siting.html

New York: Hands-on "Build-Ready" Program to Accelerate Development of Contaminated & Other Under-used Sites

- De-risking renewable energy development on contaminated and other under-used sites by obtaining site control, permits, interconnection, and limiting developer liability.
- Facilitating renewable energy development by providing patient capital, community benefits, and coordination across government agencies.
- Identifying, evaluating, and advancing sites for renewable energy projects to be developed, owned, and operated by the private sector.
- Providing financial support and incentive to the private sector by offering developers 20-year Renewable Energy Credit (REC) Agreements.

FOR MORE INFORMATION: https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Standard/Landowners-and-Local-Governments/Build-Ready-Program

New York: Streamlined Permitting and Environmental Review Programs for RE-Powering Sites

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Office of Renewable Energy Siting (ORES)

- Landfills, brownfields, and other "repurposed" commercial or industrial sites receive expedited review.
- Complete applications for such sites are acted on within 6 months, while applications for other (not "repurposed") sites are within 12 months.
- Applies to projects > 25 MW in capacity and opt-in for 20-25 MW projects.

State Environmental Quality Review Act (SEQRA) – "Little NEPA"

- Certain closed landfill and brownfield solar projects can qualify as Type II actions, not requiring further evaluation under SEQRA.
  - *Brownfield sites must have a Brownfield Cleanup Program certificate of completion (or be Environmental Restoration Project sites that receive specific certificates of completion) to qualify for this expedited process.*
- Applies to projects < 20 MW and those 20-25 MW not opting into ORES.

Sources: New York State Energy Research and Development Authority (NYSERDA), *Office of Renewable Energy Siting*, https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Siting/Siting-for-Large-Scale-Renewables/Office-of-Renewable-Energy-Siting

NYSERDA, Solar Program (NY-Sun), *Resources for Contractors* (click on "Program Manuals" at this link), https://www.nyserda.ny.gov/All-Programs/NY-Sun/Contractors/Resources-for-Contractors

NYSERDA, *Solar Guidebook for Local Governments*, https://www.nyserda.ny.gov/All-Programs/NY-Sun/Communities-and-Local-Governments/Solar-Guidebook-for-Local-Governments