

Summary of State Programs for the Reuse of Brownfields, Landfills, and Former Mines for Renewable Energy in Michigan

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Michigan Department of Natural Resources
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Photo Credit (cover): Coldwater Board of Public Utilities (CBPU), *CBPU Solar Field*. Photo provided by CBPU and used with its permission. This solar project is on a brownfield site that was a former foundry in Michigan. The site was barren for 27 years before the local municipal utility graded the land and arranged for development and installation of this renewable project. For more information on the project, see <https://www.coldwater.org/737/Solar-Energy> [accessed April 2023].

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1. Summary of Request for Technical Assistance

The U.S. Environmental Protection Agency’s (EPA’s) RE-Powering America’s Land Initiative¹ produced this paper as part of a technical assistance request for the Michigan Department of Natural Resources (DNR), Michigan Department of Environment, Great Lakes, and Energy (EGLE), and Michigan State Land Bank Authority (SLBA) (collectively “the Michigan agencies”).

This paper is based on EPA research and highlights specific “RE-Powering” programs² from other states that are potentially relevant to Michigan. This topic -- reuse of lands for renewables -- is particularly timely in Michigan as renewable development in the state continues to expand to meet climate goals and state agencies, municipalities, and other stakeholders are increasingly active in efforts to preserve open forested, recreational, and agricultural space; leverage existing electricity infrastructure; revitalize communities with landfills, mines, and brownfields; and otherwise inform where new renewable projects are located. DNR’s Brightfields pilot³ and new landfill solar projects being developed by the state’s largest utilities⁴ point to the importance of this topic to the renewables industry in Michigan.

This paper concentrates on identifying national best practices in state programs that may be relevant to Michigan and comparing them to existing practices in Michigan.

2. Role of State “RE-Powering” Programs

EPA tracks the number of renewable projects developed on RE-Powering sites and has consistently found that state programs make a significant contribution to successful project development. That is because state programs focused on the intersection of renewable energy development and reuse of previously disturbed lands can increase the speed and lower the cost, risk, and complexity of project development.

The most successful state programs do not tend to be standalone efforts, but instead build on existing, broader renewable energy and land reuse policies in the state. Several states, such as

¹ EPA’s RE-Powering America’s Land Initiative (hereafter “RE-Powering”) has a mission to encourage renewable energy development on landfills, mine sites, and current and formerly contaminated lands and analyzes state programs as part of that mission.

² In this paper, “programs” collectively refers to organized policies, programs, and other activities performed by states to advance renewable energy development on landfills, mines, and current and formerly contaminated lands like brownfields. Such locations are called “RE-Powering sites” in this paper.

³ DNR is overseeing competitively-selected, large-scale solar development projects at former mines in Crawford and Dickinson Counties in Michigan. See DNR, *Pilot Initiatives: Turning Brownfields to Brightfields*, <https://www.michigan.gov/dnr/managing-resources/forestry/pilot-initiatives> [accessed April 2023].

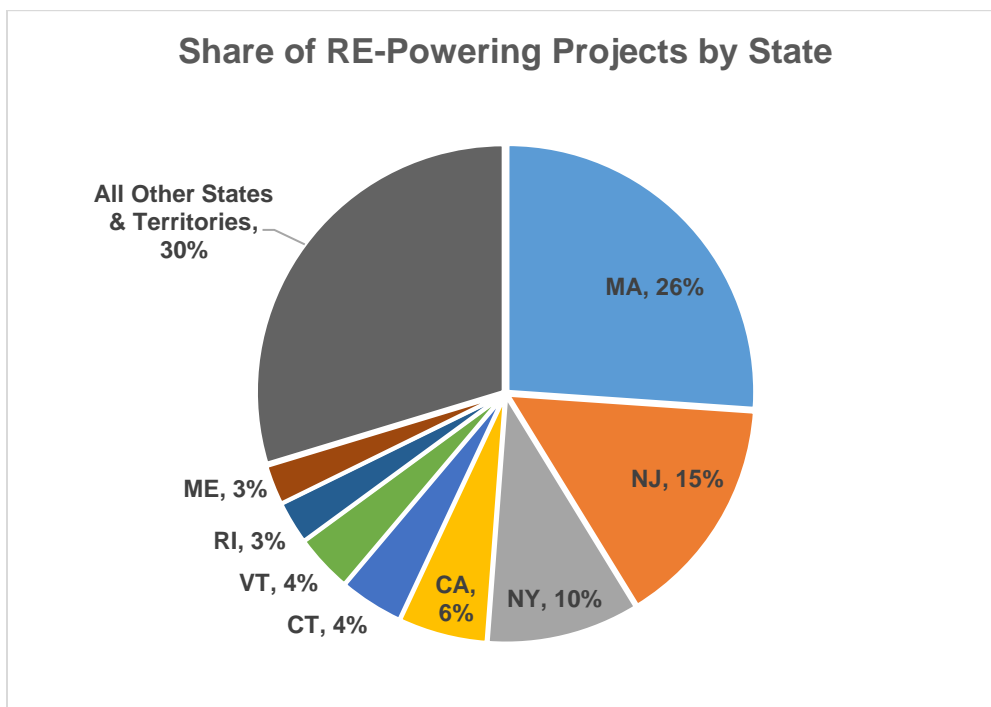
⁴ The second-largest utility in the state, Consumers Energy, will be developing a community solar project in Grand Rapids and will “gather information on how utility ownership of the Butterworth Landfill project facilitated development on a brownfield site and ... commits to discussing ... how this pilot program could be expanded to encourage additional brownfield development in Michigan.” Michigan Public Service Commission, *Order Approving Settlement Agreement in the Matter of the Application of Consumers Energy Company for Approval of Voluntary Green Pricing Programs*, Case No. U-21134, July 27, 2022, <https://mi-psc.force.com/sfc/servlet.shepherd/document/download/0698y000003a7yvAAA?operationContext=S1> [accessed April 2023]. The largest utility in the state, DTE, is developing a 20 megawatt (MW) solar project for Pittsfield Township and the City of Ann Arbor that is partially on a capped landfill. See *Ann Arbor & Pittsfield Municipal Landfill Solar Project: Frequently Asked Questions*, <https://www.a2gov.org/departments/sustainability/Documents/Landfill%20Solar%20FAQ%20Updated-12.21.pdf> and DTE, *DTE Energy and Local Communities Move Forward with First-of-its-kind Community Solar Project in Washtenaw County*, 2021, <https://ir.dteenergy.com/news/press-release-details/2021/DTE-Energy-and-local-communities-move-forward-with-first-of-its-kind-community-solar-project-in-Washtenaw-County/default.aspx> [both accessed April 2023].



Massachusetts, New Jersey, and New York, have market shares of solar projects on previously contaminated lands that are several times higher than the national average, due in large part to longstanding RE-Powering programs that complement broader state policies. For that reason, EPA emphasizes the linkage between RE-Powering programs in other states and specific renewable energy activity in Michigan in this paper.

I. Where Renewable Energy Projects on “RE-Powering” Sites are Most Prevalent

Of the 502 completed renewable energy projects identified nationally by EPA RE-Powering on currently or formerly contaminated lands, landfills, or former mine sites, 70% are in eight states listed in the chart below, all but one (California) of which have state financial incentive programs specifically directed at these types of sites.⁵



Through fall 2022, RE-Powering has identified four completed projects on RE-Powering sites in Michigan, placing it in a tie for 21st-most projects among states and territories. If ranked by the capacity of those completed renewable projects (rather than the number of projects), Michigan has the 36th-most RE-Powering capacity among states and territories.⁶ Upon completion of the two large-scale DNR pilot solar projects on former mines and the Consumers Energy and DTE community solar

⁵ Data are drawn from EPA, *RE-Powering Tracking Matrix*, 2022, <https://www.epa.gov/re-powering/re-powering-tracking-matrix> [accessed April 2023].

⁶ Data on the number and capacity of identified RE-Powering projects in Michigan is from EPA, *RE-Powering Tracking Matrix*, 2022.



projects on landfills noted earlier in this paper, Michigan’s national rank in installed RE-Powering capacity would be expected to rise significantly.⁷

II. State Program Types

Based on its research, EPA has grouped state programs into eight categories per the table below.

Program Category	Types of Programs in Category
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. Streamlined Permitting & Environmental Reviews	Expedited processes; central coordination; favorable ordinances
4. Liability Relief	Laws, regulations, or enforcement discretion to reduce renewable energy landowner, developer, and/or operator liability
5. Site Identification & Development Support	Databases; mapping tools; direct technical assistance from state staff or state contractors; hands-on project development by state
6. Education & Outreach	Guides; templates; toolkits; training presentations; dedicated webpages
7. General Brownfield Reuse	Loans; grants; technical assistance (not specific to, but also applicable to, renewable energy reuse)
8. Inter-agency Coordination	Inter-agency, renewable-specific meetings and processes to remove development barriers; working groups

States select categories and individual types of programs to pursue based on state goals as well as existing policies, resources, and market factors in their jurisdictions. Tips for program development are included at the end of this paper.

III. Importance of Community Engagement to State Program Success

For any state program addressing site reuse for renewable energy, EPA’s research has found that it is important to coordinate early and consistently among internal and external stakeholders.⁸ These stakeholders may include renewable energy developers, site owners, municipal agencies, regional economic development organizations, electric utilities, land use and environmental groups, environmental justice community organizations, labor organizations, and others. There are several

⁷ For comparison, Michigan has the 11th-most net electricity generation (from all sources) among states as of 2021 per the U.S. Department of Energy, Energy Information Administration, *State Electricity Profiles*, <https://www.eia.gov/electricity/state/> [accessed April 2023].

⁸ EPA RE-Powering has a self-guided, 40-minute training session on “Addressing Community Concerns” available on its website at: <https://www.epa.gov/re-powering/training#community> [accessed April 2023].



examples of the importance of local stakeholders to renewable development, including the community solar projects on landfills referenced earlier in the paper that Consumers Energy and DTE are developing in Grand Rapids and Pittsfield/Ann Arbor, respectively.

3. Profiles of Specific Programs Potentially Relevant to Michigan

Below, 15 programs from other states across the eight program categories are profiled. These programs were selected because they may be particularly relevant comparisons for Michigan.⁹

I. Direct Financial Incentives

Direct financial incentive programs for landfills and brownfields from Maryland and New York are summarized below. These programs are somewhat comparable to two Michigan Senate Bills¹⁰ introduced in the most recent legislative session in that they are tax-based. The Maryland program is more similar to the Michigan legislation in that it is a tax exemption.

In **Maryland**, the Renewable Energy Development and Siting program provides a public service company **franchise tax exemption for renewable energy projects on landfills, brownfields, Superfund sites, reclaimed mines, and some other site types**.¹¹

Under the recent 10-year re-authorization of the **New York Brownfield Cleanup Program**, new renewable energy brownfield redevelopments are eligible for **enhanced tax credits**.¹²

II. Procurement Preferences or Requirements

Nationally, community solar projects tend to be well-matched for landfill and brownfield sites due to their typical sizes and the proximity of residential and business consumers, who can be program subscribers, to these sites.¹³ There is growing interest in Michigan in community solar¹⁴, which could

⁹ EPA RE-Powering published brief profiles of several dozen additional state programs in 2022 and will be updating and expanding that document in 2023. The profiles in the existing document cover Illinois, Massachusetts, New Jersey, and New York, which collectively account for more than half of all RE-Powering projects nationally. See EPA, *Profiles of State Programs for Renewable Energy Development on Landfills, Mines, and Formerly Contaminated Sites*, 2022, <https://www.epa.gov/system/files/documents/2022-06/epa-re-powering-profiles-state-programs-may-2022%20508.pdf> [accessed April 2023]. EPA plans to add profiles of programs in Colorado and Rhode Island in its next edition of the document.

¹⁰ Proposed Michigan Senate Bill Nos. 1106 and 1107, introduced in June 2022, would have created property tax exemptions for renewable energy facilities on various site types, including brownfields, and established payments in lieu of tax mechanisms in place of the exemptions. The legislation was referred to the Committee on Energy and Technology and did not advance further. See Michigan Senate Fiscal Agency, *Bill Analysis: Senate Bills 1106 and 1107*, <http://www.legislature.mi.gov/documents/2021-2022/billanalysis/Senate/pdf/2021-SFA-1106-G.pdf> [accessed April 2023].

¹¹ See Maryland General Assembly, *Senate Bill 281*, 2020 Session, <https://mgaleg.maryland.gov/2020RS/bills/sb/sb0281T.pdf> and Maryland General Assembly, *Fiscal and Policy Note: Senate Bill 281*, 2020 Session, <https://trackbill.com/bill/maryland-senate-bill-281-renewable-energy-development-and-siting-reds-evaluations-and-tax-and-fee-exemptions/1852868/> [both accessed April 2023].

¹² Office of the New York State Comptroller, *Supplemental Report on the State Fiscal Year 2022-23 Executive Budget*, 2022, p. 43, <https://www.osc.state.ny.us/files/reports/budget/pdf/executive-budget-report-2022-23.pdf> [accessed April 2023].

¹³ For more details on the linkages between site reuse and community solar, see EPA, *Community Solar: An Opportunity to Enhance Sustainable Development on Landfills and Other Contaminated Sites*, 2016, https://www.epa.gov/sites/default/files/2016-12/documents/epa_repowering_community_solar_discussion_paper_final_120716_508.pdf [accessed April 2023].

¹⁴ For example, the Consumers Energy development at the Butterworth Landfill in Grand Rapids and the DTE development in Pittsfield/Ann Arbor partially on a capped landfill referenced earlier in this paper are both community solar projects.



make New Jersey's program (profiled below) with procurement preferences for brownfields, landfills, and other sites that preserve greenspace a potentially relevant comparison.

New Jersey's Community Solar Energy Pilot Program allows residential and business electricity customers to subscribe to output from specific solar projects. Its **evaluation criteria include strong preferences for brownfields, landfills, areas of historic fill, rooftops, and parking canopies**. Among Year 1 awards in the New Jersey program, nine projects (with 33 MW_{DC} of combined capacity) were on landfills, and one project with 2 MW_{DC} was on a brownfield. Among Year 2 awards, nine projects (with 36 MW_{DC} of combined capacity) were on landfills, and one project with 5 MW_{DC} was on a brownfield.¹⁵

III. Streamlined Permitting & Environmental Reviews

The speed of environmental review and permitting processes is a major factor affecting the desirability of renewable development in a state. New York State has two programs (profiled below) that streamline permitting of renewable energy projects on sites it classifies as "repurposed" including landfills and brownfields.

Landfill and brownfield solar projects of 25 acres or fewer can qualify as Type II actions, not requiring further evaluation under **New York's State Environmental Quality Review Act (SEQRA)**. SEQRA is also known as "mini-NEPA" due to its similarities to the National Environmental Policy Act (NEPA).¹⁶

Landfills, brownfields, and other repurposed commercial or industrial sites receive expedited review from the **New York Office of Renewable Energy Siting** that was established to provide faster, more predictable permit reviews. **Complete permit applications for landfills, brownfields, and other repurposed sites are acted on within six months**, while permit applications for other (not repurposed) sites receive final decisions within 12 months.¹⁷

IV. Liability Relief

One barrier to reuse of contaminated sites is concern about renewable developer, owner, and operator liability for prior contamination. Michigan has liability relief provisions that can apply in certain cases to renewable energy and other eligible types of reuse on previously contaminated sites.¹⁸

¹⁵ In total, 45% of Year 1 capacity awards and 25% of the (larger) Year 2 capacity awards were on landfills or brownfields. See New Jersey Board of Public Utilities, *In the Matter of the Community Solar Energy Pilot Program, Agenda Date: December 20, 2019*, <https://www.nj.gov/bpu/pdf/boardorders/2019/20191220/12-20-19-8D.pdf> and New Jersey Board of Public Utilities, *In the Matter of the Community Solar Energy Pilot Program, Agenda Date: October 28, 2021*, <https://nj.gov/bpu/pdf/boardorders/2021/20211028/8J%20ORDER%20Community%20Solar%20PY2%20Awards.pdf> [both accessed April 2023].

¹⁶ For more information, see New York State Energy Research and Development Authority (NYSERDA), *New York Solar Guidebook for Local Governments*, 2023, p. 122, <https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Siting/Solar-Guidebook> [accessed April 2023].

¹⁷ All new renewable energy projects above 25 MW in capacity must go through the Office of Renewable Energy Siting permitting process, and new projects between 20 MW and 25 MW and certain existing projects can opt into this office's permitting process. See 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> [accessed April 2023].

¹⁸ A general guidance document from EGLE indicates that, "you are not liable for the cost of cleanup actions under Michigan's environmental remediation ... if you become the owner or operator of a contaminated property on or after June 5, 1995, ... and you were not responsible for the release that caused the contamination, and you conduct an adequate Baseline Environmental Assessment (BEA)



However, there may be low awareness of these provisions among renewable developers in the Michigan market.

Liability relief provisions from Virginia and Massachusetts are profiled below for comparison. Due to the awareness issue in Michigan, the Massachusetts publication on this topic may be of particular interest.

Virginia provides liability defense for bona fide prospective purchasers and other entities if they meet the requirements of the pertinent statute.¹⁹ A bona fide purchaser in Virginia “shall not be held liable for a containment or cleanup that may be required at a brownfield site” if the person did not cause, contribute, or consent to the release or threatened release; is not liable through familial or contractual relationship; completes reasonable steps to stop and prevent further release/exposure; and does not impede response action.²⁰

Massachusetts has liability relief provisions that are similar to those in Virginia, but that are more specific in several ways. **Massachusetts also provides a guidance document entitled *Addressing Renewable Energy Development at Contaminated Properties in Massachusetts – Managing Chapter 21E Liability*.**²¹

V. Site Identification & Development Support

This program category covers a range of activities to help select and advance promising locations for RE-Powering projects. Michigan has active programs in this category, including EGLE mapping tools such as the Environmental Mapper and the RenewMI Project Viewer that allow users to obtain information on sites with environmental contamination and “sites where (the Remediation and Redevelopment Division) is directly overseeing the environmental remediation efforts, and ... where a brownfield grant and/or loan has been provided to incentivize economic development,” respectively.²² DNR also maintains extensive mapping information as does SLBA.²³ EPA understands that Michigan agencies are considering adding more information to their maps on renewable energy development factors. Colorado and New Jersey have both included such information in their mapping applications, and they are profiled below. In addition, EPA’s RE-Powering

for your property prior to or within 45 days of becoming the owner or operator, and you submit the BEA to the DEQ within the required timeframe, and you disclose the results of the BEA to subsequent purchasers or transferees.” However, this guidance document relates to facilities covered by Part 201 of the Natural Resources and Environment Protection Act (NREPA) and should not be applied to all potentially contaminated sites because “**facilities that are classified as treatment, storage and disposal sites; waste disposal areas; or oil, gas and mineral wells are regulated under other parts of the NREPA.**” See EGLE, *Environmental Cleanup – Citizen’s Guide*, 2019, p. 1, <https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/RRD/Due-Care/Part-201-Citizens-Guide.pdf?rev=d11790e216704725a7005a8cbcfb6c21> [accessed April 2023]. For the full text of Part 201 of the NREPA, see [http://www.legislature.mi.gov/\(S\(jqkek12qbktna5buqgo01p\)\)/documents/mcl/pdf/mcl-451-1994-ii-7-201.pdf](http://www.legislature.mi.gov/(S(jqkek12qbktna5buqgo01p))/documents/mcl/pdf/mcl-451-1994-ii-7-201.pdf) [accessed April 2023].

¹⁹ Code of Virginia, § 10.1-1234, Limitations on liability, <https://law.lis.virginia.gov/vacode/title10.1/chapter12.1/section10.1-1234/> [accessed April 2023].

²⁰ *Ibid.*

²¹ The document is available at: <https://www.mass.gov/doc/addressing-renewable-energy-development-at-contaminated-properties-in-massachusetts-managing/download> [accessed April 2023].

²² See EGLE, *Environmental Mapper*, <https://www.mcgi.state.mi.us/environmentalmapper/> and EGLE, *RenewMI Project Viewer*, <https://experience.arcgis.com/experience/a3db431c6b154b87a481e1122f726101/page> [both accessed April 2023].

²³ See, for example, *DNR Maps & Data*, <https://gis.midnr.opendata.arcgis.com/#sectionMap> [accessed April 2023].



Mapper has pre-screened 190,000 landfill, mine, and current and formerly contaminated sites nationally, including more than 3,400 in Michigan, based on their renewable energy potential.²⁴

The **COLORADO BRIGHTFIELDS mapping application** includes **energy-specific information** such as utility service area, utility infrastructure, and wind speed in addition to more general data fields such as economic development zones, parcel area, hydrology, contours, and easements.²⁵

New Jersey’s Community Solar PV Siting Tool integrates electric utility “hosting capacity” information (the ability of the utility grid to absorb specific amounts of new electric generation capacity at various points of interconnection) among its many data layers.²⁶

The Michigan agencies expressed interest in another activity in this program category, hands-on project development support by states.²⁷ In its Brightfields pilot, DNR is doing similar work.

An example of state-provided renewable development of landfills, brownfields, and other under-utilized sites is the Build-Ready Program managed by the New York State Energy Research and Development Authority (NYSERDA), which is profiled below.

Build-Ready was launched in mid-2020 and seeks to avoid competing with the private sector; instead, it pursues sites that would otherwise not be developed. It takes a **multi-tiered diligence approach to identifying, screening** (e.g., for constraints), **and assessing sites, with the most viable sites undergoing detailed assessments and project development.** Pre-construction development activities led by NYSERDA can include: site control via a lease option agreement, preliminary project design, project permitting, progressing interconnection, and developing a Host Community Benefits package to provide local benefits. While there is no minimum project size, Build-Ready emphasizes large projects to help the state meaningfully advance towards its climate goals, meaning that sites will likely be a minimum of 50 acres. Build-Ready involves a significant investment by New York State, originally with six new full-time-equivalent positions covering “project management, prospecting, project development, permitting, and legal support” and access to contractor staff.²⁸

Build-Ready reviews and advances sites with various types of owners. A modest percentage of those sites are state-owned. Because Michigan agencies own substantial land areas themselves and are interested in developing **state-owned sites** into brightfields, EPA RE-Powering prepared

²⁴ See EPA, *RE-Powering Mapper 3.0*, <https://geopub.epa.gov/repoweringApp/> [accessed April 2023].

²⁵ This program “was developed by Convergence Associates and its partners, Colorado State University and Bright Rain Solutions, with support provided by the Colorado Evaluation and Action Lab at the University of Denver.” See COLORADO BRIGHTFIELDS, *Fact Sheet*, <https://brightfields.colorado.gov/Brightfields/assets/brightfields-fact-sheet.pdf> [accessed April 2023]. The program’s Advisory Committee included representatives from state agencies in Colorado and U.S. EPA. See COLORADO BRIGHTFIELDS, *Inventory and Analysis of Brightfields in Colorado*, https://coloradolab.org/wp-content/uploads/2021/05/Colorado-Brightfields-Report_Final.pdf [accessed April 2023].

²⁶ See New Jersey Department of Environmental Protection, *New Jersey Community Solar PV Siting Tool*, <https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=c3a9466eb7e54badbb41a90794bd0349> [accessed April 2023].

²⁷ This interest included exploring the use of Act 381 (the Brownfield Redevelopment Financing Act) more widely for renewables in Michigan.

²⁸ Information in this paragraph is drawn from the longer profile of the Build-Ready Program in EPA, *Profiles of State Programs for Renewable Energy Development on Landfills, Mines, and Formerly Contaminated Sites*, 2022. NYSERDA’s overall webpage for Build-Ready is: <https://www.nyserda.ny.gov/All-Programs/Clean%20Energy%20Standard/Landowners%20and%20Local%20Governments/Build%20Ready%20Program> [accessed April 2023].



a short companion memo for the agencies that addresses that issue and draws from its research in New York and elsewhere.

VI. Education & Outreach

Several states have prepared documents to provide communities, site owners, and developers with guidance and templates to make renewable reuse more time- and cost-efficient. EPA understands that such materials may be particularly useful in Michigan, with its 1,856 municipal jurisdictions²⁹, many of which lack tools for permitting, stakeholder engagement, and other aspects of RE-Powering project development. Below, documents from New York and Rhode Island are profiled.

In **New York**, an overall guidebook “has information, tools, and step-by-step instructions to support local governments managing solar energy development in their communities.”³⁰ It contains a ***Municipal Solar Procurement Toolkit*** with “information for local governments looking to lease existing underutilized land for solar development.”³¹ The broader document includes a Request for Proposals template, model local laws for solar development, and information on payment-in-lieu-of-taxes (PILOT) agreements.

Rhode Island published a guide containing **model local ordinance templates for zoning and taxing solar energy systems**.³² The guide contains notes about landfill and brownfield sites. That state also assembled an inventory of local solar ordinances.³³

VII. General Brownfield Reuse

Michigan has brownfield funding (loan and grant) programs that are not targeted specifically to renewable energy, but for which renewable energy is one of several permissible types of reuse. Like many other states, these programs tend to be used somewhat rarely for renewable projects.³⁴ Comparable programs exist throughout the U.S., including the Illinois Environmental Protection

²⁹ This total is comprised of 83 counties, 275 cities, 1,240 townships, and 258 villages. See Michigan Legislature, *Michigan Manual 2009-2010: Michigan’s System of Local Government*, https://www.legislature.mi.gov/Publications/MichiganManual/2009-2010/09-10_MM_VIII_pp_01-04_IntroAndMap.pdf [accessed April 2023].

³⁰ NYSERDA, *New York Solar Guidebook for Local Governments*, 2023, p. 2, <https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Siting/Solar-Guidebook> [accessed April 2023].

³¹ *Ibid.*, pp. 207-249.

³² See State of Rhode Island, *Renewable Energy Guidelines: Rhode Island Zoning & Taxation Ordinance Templates for Solar Energy Systems*, 2019, https://energy.ri.gov/sites/g/files/xkgbur741/files/documents/renewable/Renewable_Energy_Guidelines_Solar_Energy_Systems_Model_Templates_Zoning_and_Taxation_Feb_2019.pdf [accessed April 2023].

³³ See State of Rhode Island, *Inventory of Solar Ordinances in Rhode Island*, 2021, https://energy.ri.gov/sites/g/files/xkgbur741/files/documents/renewable/2021-RI-MuniSolar-Ordinances_1-19-2021%5B2%5D.pdf [accessed April 2023].

³⁴ However, a brownfield loan of up to \$300,000 and a grant of up to \$949,000 were provided through EGLE to the Mitchell Bentley solar garden project at a formerly contaminated auto parts manufacturing facility in Cadillac. The solar project was completed in 2021 and involved participation from the local utility, Consumers Energy. See EGLE, *Fiscal Year 2020 State Environmental Cleanup Programs Report*, 2021, <https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Reports/Report-2021-03-01-State-Environmental-Cleanup-Programs.pdf> and Consumers Energy, *Consumers Energy Celebrates New Solar Power Plant in Cadillac*, 2021, <https://www.pnnewswire.com/news-releases/consumers-energy-celebrates-new-solar-power-plant-in-cadillac-301335958.html> [both accessed April 2023].



Agency's (Illinois EPA's) Brownfields Redevelopment Loan Program³⁵ and a range of reuse funding options within Colorado's brownfields program.³⁶

VIII. Inter-Agency Coordination

EPA's research has found that several of the states with the most completed RE-Powering projects have formal, ongoing coordination mechanisms between at least their energy and environmental agencies and sometimes also including their economic development agencies. That coordination can create time- and cost-efficiencies throughout the project development process as well as streamlining communications and bringing internal state expertise to bear on promising projects at early stages.

The Michigan agencies are interested in if and how other states have implemented this coordination in a proactive manner with an economic development purpose that might be labeled an "enterprise model." EPA profiles New Jersey below both because that state has multi-agency coordination and because it has done so with its existing staff.

New Jersey has several agency coordination mechanisms to carefully track and advance renewable projects on landfills and brownfields. The state has inter-agency processes to review program applications between the New Jersey Department of Environmental Protection (NJDEP) and the state energy organization within the New Jersey Board of Public Utilities (NJBPU) and between NJDEP and the New Jersey Economic Development Authority (NJEDA).

For example, coordination occurs between NJDEP and NJBPU in sequenced reviews of Subsection (t) applications to the main solar financial incentive program in the state. NJDEP and NJBPU also meet monthly to (i) discuss the progress of renewable projects on RE-Powering sites that are known to be in development and (ii) stay abreast of changes in rules, regulations, and technical requirements that may affect RE-Powering sites.³⁷

For the Hazardous Discharge Site Remediation Fund, NJDEP "evaluates an applicant's preliminary eligibility requirements, and the estimated remediation costs. Upon the (NJ)DEP's recommendation for funding, the (NJ)EDA evaluates an applicant's financial status, determines grant and/or loan eligibility and awards funding."³⁸

NJDEP, NJBPU, and NJEDA also collaborate to inform their state's strategic funding plan for Regional Greenhouse Gas Initiative (RGGI) proceeds, and New Jersey has an intra-agency central permit coordination process inside NJDEP.³⁹

In addition to the gains in timeliness and project completion that flow from New Jersey's inter-agency and intra-agency coordination, the state has learned how valuable it is to provide accurate, early information to developers, site owners, and communities about RE-Powering

³⁵ See Illinois EPA, *Brownfields*, <https://epa.illinois.gov/topics/cleanup-programs/brownfields.html>, and Illinois EPA, *Brownfields Redevelopment Loan Program Application Package*, <https://www2.illinois.gov/epa/Documents/epa-forms/land/brownfields/brownfield-loan-app.pdf> [both accessed April 2023].

³⁶ See Colorado Department of Public Health & Environment, *Brownfields Program*, <https://cdphe.colorado.gov/brownfields> [accessed April 2023]. The Colorado program includes grants, loans, and tax credits.

³⁷ See EPA, *Profiles of State Programs for Renewable Energy Development on Landfills, Mines, and Formerly Contaminated Sites*, 2022.

³⁸ See NJDEP, *Hazardous Discharge Site Remediation Fund*, <https://www.nj.gov/dep/srp/finance/hdsrf/> [accessed April 2023].

³⁹ See NJDEP, *Office of Permitting and Project Navigation*, <https://www.nj.gov/dep/pcer/> [accessed April 2023].



projects they are considering. The coordination mechanisms allow these stakeholders to hear upfront from multiple state agencies about eligibility information and potential barriers to renewable redevelopment at their specific sites.

4. Tips for Program Development and Implementation

For all types of state programs, there are best practices that can streamline development, improve implementation outcomes, and help establish realistic timeline expectations.⁴⁰

Expanding on existing programs, rather than creating wholly new programs, has been a successful strategy to **streamline program development** in several states. Many high-impact programs focused on landfills and brownfields link to existing, broad renewable incentive programs in states such as Illinois, Massachusetts, New Jersey, New York, and Rhode Island.⁴¹

Implementation outcomes are enhanced by leveraging common types of sites in states, thus providing more potential locations for reuse. For example, Massachusetts has numerous municipally-owned landfills with 5 to 30 acres of solar-suitable space which were ideal sizes for the combination of virtual net metering and solar renewable energy certificate policies in that state.

In addition to technical factors like those described above, state agency officials tell EPA that organizational factors are equally important to program outcomes. **Consistent champions or sponsors, who understand renewable energy development and reuse of disturbed lands, are very important to program launch.** It is also critical to match program designs and goals to agency staffing levels and expertise. The scale and background of energy, environmental, and economic development staff vary widely from state-to-state, and some otherwise promising program ideas are not transferable due to staffing and funding differences between jurisdictions.

EPA's research shows that states with the most completed RE-Powering projects have combined several program types and implemented them over long periods. In **setting timeline expectations**, it is important to recognize that the time from program initiation to installed project results can be three or more years. That is largely due to the length of the renewable energy project development cycle. States that have programs focused on large-scale (~20 MW+ in capacity) projects may take even longer to see installation results. Programs that require enabling legislation may take multiple years to even get to the program initiation stage. A technique that some states use to accelerate

⁴⁰ For an overview of best practices and highlights from selected states on program design, see EPA, *State Program Selection & Design Tips*, 2022, https://www.epa.gov/system/files/documents/2022-06/epa-re-powering_state_program_design_selection_design_tips_january_26_2022%20508.pdf [accessed April 2023].

⁴¹ For example, Illinois has a minimum percentage specifically for brownfields in the utility-scale solar procurement rules of its Climate and Equitable Jobs Act; Massachusetts has adders for landfill and brownfield sites on top of other financial incentives in its Solar Massachusetts Renewable Target (SMART) program; New Jersey had higher solar renewable energy certificate prices for landfill and brownfield solar projects in much of the state in its NY-Sun MW Block Program; and Rhode Island has a dedicated brownfields solar grant program within its Renewable Energy Fund. For descriptions of these and other state programs, see EPA, *Examples of State Policies Supporting Renewable Energy Development on Landfills, Formerly Contaminated Lands, and Mines*, 2022, https://www.epa.gov/system/files/documents/2022-06/epa-re-powering_examples_of_state_policies%20508.pdf [accessed April 2023].



program timelines is to implement early pilot-like phases⁴², with subsequent full program roll out drawing from pilot lessons learned.

⁴² An example of a program like this is Minnesota's Closed Landfill Solar Redevelopment and Reuse Account. See State of Minnesota, *H.F. No. 6* (2021 Special Session), http://wdoc.house.leg.state.mn.us/leg/LS92/1_2021/HF0006.1.pdf [accessed April 2023].