

## Letter of Support - Renewable Energy Development at Minnesota Closed Landfills

Letter of State-Wide, Regional, and National Support

January 1, 2019

To Whom It May Concern:

My name is Cameran Bailey and I serve as the Solar Policy & Planning Advisor to the Metropolitan Council and the SolSmart Program in the Twin Cities Metro. I have aggregated a state-wide, regional, and national team of public and non-profit solar and energy professionals to support an initiative termed the "MN Brightfields Initiative". In this initiative, we are offering cost-free professional, technical, financial, and regulatory expertise and analysis to assist local governments across Minnesota develop renewable energy projects on closed landfills. The desired outcomes of this initiative are to:

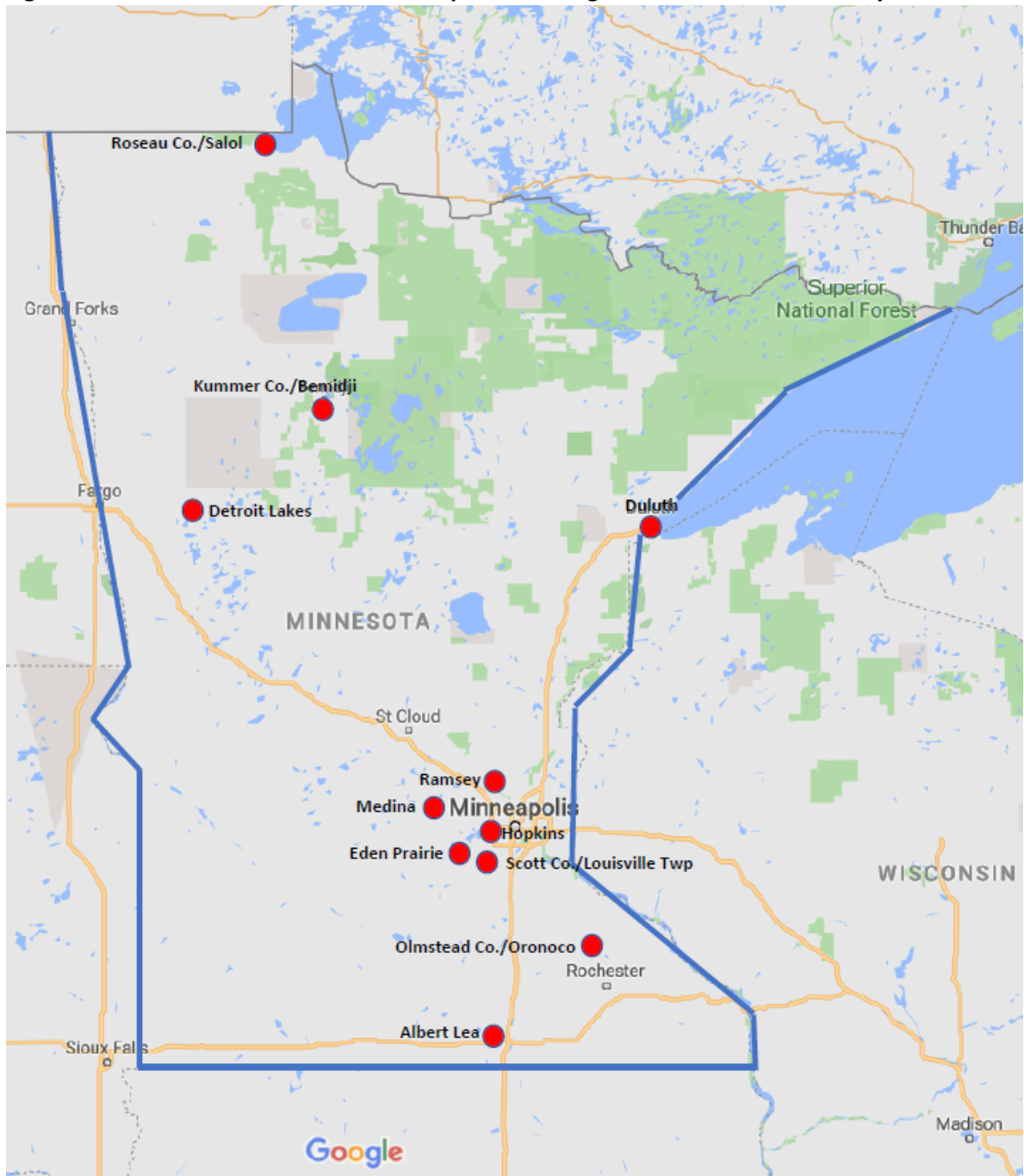
- Bring redevelopment potential to land that is otherwise undevelopable
- Bring value-adding economic redevelopment to the local governments (townships, cities, counties) and their communities, which stand to benefit from such developments
- Make Minnesota a national leader in solar construction on landfills, showcasing how these projects can save money, create jobs, and partially mitigate environmental impacts from landfills
- Bring these savings and benefits to ALL of Minnesota. By demonstrating success in your community, other counties, utilities, and municipalities can replicate the process
- Guide national and state policies and incentives to support renewable energy redevelopment projects on landfills, brownfields, superfund sites, other contaminated lands with the MPCA
- Many brownfield sites have limited funding for remediation, do not have the capacity to assess and maneuver the MPCA's processes, and these projects can motivate action and bring resources to sites that may otherwise be neglected
- Developing projects on brownfield sites can result in regular site maintenance that is paid for by the project, rather than maintenance costs being a burden on local taxpayers

As of October 2017, there are over 150 solar and wind projects on landfill sites across the country, providing benefits to their communities. Installations provide clean energy and often electricity cost savings to local residents and businesses. Depending upon the arrangement, projects can generate lease payments for the owners, taxes to the municipality and environmental benefits over traditional sources of electricity. These projects are located in 28 states with the relevant regulatory authority (usually the state's environmental department) overseeing the compatibility of the renewable energy installation with the landfill and the continued protectiveness of the landfill cap and closure.

As of today, we have 11 sites across the state (Fig. 1) where the applicable local government has told us they are interested in our team assessing the technical, financial, and regulatory feasibility of renewable energy development on their closed landfill:

1. Becker County; 1972-1998
2. Scott County 1971-1990
3. Kummer County
4. City of Duluth; 1965-2001
5. City of Ramsey; 1972-1993
6. City of Hopkins; 1964-1980
7. City of Albert Lea; 1965-1993
8. City of Medina; 1960-1993
9. City of Eden Prairie; ??-1986
10. Oronoco Township

**Fig. 1 - MN Communities Interested in the pursuit of Brightfields in their Community**



All we ask for in return from MN Brightfield Initiative Communities is a commitment to the feasibility assessment process, as well as a real desire to see an execution of a renewable energy redevelopment project on their closed landfill site should the assessment yield results that are favorable for development.

Our team of professionals can bring the following resources to bear:

- Solar photovoltaic feasibility study for the site including and economic and technical considerations
- Subject Matter Experts to present the results to local decision makers
- Support to work with the MPCA on a proposal for development
- A list of solar developers to engage with on developing the project
- Support for developing a RFP that can be used to engage industry on site development

I will not, and cannot, lead this sort of transformative and innovative work alone. Here is the current team of professionals, their organizations, their titles, and how they have already pledged to provide support to this initiative:

- Marc Thomas (US EPA, RE-Powering America's Land)
- Thomas Bloom (US EPA, RE-Powering America's Land)
- Gail Mosey (National Renewable Energy Lab)
- Alexandra Aznar (National Renewable Energy Lab)
- John Kinch (Michigan Energy Options)
- Blase Leven (Kansas State University, EPA TAB)
- Jack Kluempke (MN Department of Commerce)
- John Paulson (City of Hutchinson)
- Brian Ross (Great Plains Institute)
- Lisa Daniels (Windustry)
- Zach Greene (The Solar Foundation)
- Phillip Haddix (The Solar Foundaiton, The SolSmart Program)
- Diana McKeown (Great Plains Institute, Clean Energy Resource Teams)
- Joel Haskard (Univ. of MN, Clean Energy Resource Teams)
- Hava Blair (MN Brownfields)
- Mayor Peter Lindstrom (Clean Energy Resource Teams & Mayor of Falcon Heights)
- Eric Wojchik (Metropolitan Council)
- Liz Lucente (MN Solar Energy Industries Association)
- Council of Development Finance Agencies, Brownfields Technical Assistance Program
- [MN Solar Pathways Project](#)
- Vicki O'Day, Rural Renewable Energy Alliance, [Community Solar for Community Action](#) (CS4CA)

### **MN Brightfields Initiative Team – Biographies and Skillsets**

#### **Marc Thomas – Program Manager (US EPA, RE-Powering America's Land)**

Marc Thomas is the program manager for a national US EPA initiative called RE-Powering America's Land. RE-Powering encourages renewable energy development on current and formerly contaminated lands, landfills and mine sites when such development is aligned with the community's vision for the site. The Initiative identifies the renewable energy potential of these sites and provides other useful resources for communities and other stakeholders to pursue such redevelopment. In particular there are Mapper and Decision Tree tools for locating and evaluating sites and best practice and case study documents. There are also contacts knowledgeable about this type of redevelopment in each of the EPA regional offices.

#### **Thomas Bloom - Program Manager (US EPA, RE-Powering America's Land - Region 5, Chicago, IL)**

Thomas Bloom is the Region 5 manager for a national US EPA initiative called RE-Powering America's Land. Region 5 cover Minnesota, Wisconsin, Illinois, Indiana, Michigan, and Ohio. RE-Powering encourages renewable energy development on current and formerly contaminated lands, landfills and mine sites when such development is aligned with the community's vision for the site. The Initiative identifies the renewable energy potential of these sites and provides other useful resources for communities and other stakeholders to pursue such redevelopment. In particular there are Mapper and Decision Tree tools for locating and evaluating sites and best practice and case study documents. There are also contacts knowledgeable about this type of redevelopment in each of the EPA regional offices.

#### **Gail Mosey – Senior Researcher-Land Reuse & Arctic Energy Solutions (National Renewable Energy Lab)**

Gail has worked at NREL for over a decade in the Strategic Energy Analysis Center and, more recently, in the Integrated Applications Center. A primary area of Gail's expertise is siting renewable energy on environmentally compromised lands including economic and technical analysis of the viability of renewable energy on these sites. Another area of her expertise is working with tribes and villages through DOE's Office of Indian Energy on strategic energy planning that includes energy efficiency and

renewable energy solutions to meet their energy requirements. Gail is NREL's Alaska and Arctic liaison and works on strategic aspects of Arctic interest and with villages in Alaska.

**Alexandra Aznar** – Project Leader (National Renewable Energy Lab)

Alexandra is a project leader in the Integrated Decision Support group at the National Renewable Energy Lab. She works on clean energy policies and provides technical assistance to local, state, and national-level policymakers to aid in decision making. Prior to joining NREL, she worked for a local planning department in Indiana on alternative transportation initiatives and at the Indiana University's Office of Sustainability on various sustainability efforts.

**John Kinch** – Executive Director (Michigan Energy Options)

John A. Kinch directs the strategic and daily operations of Michigan Energy Options, emphasizing innovative and collaborative projects between the public and private sectors. Under John, MEO's community-based work has expanded across the state and its revenue has diversified. John has been in the nonprofit sector for three decades, including working in international conservation and in Michigan universities.

**Blase Leven** – Assoc. Director of the Center for Hazardous Substance Research (Kansas State University)

Blase Leven is the Associate Director of the Center for Hazardous Substance Research, and helps create/coordinate teams of university scientists and engineers, and other partners, to address important technical issues facing our society. From 1997 to 2007 he served as technology transfer and outreach programs manager for the Center, which included oversight of the Technical Outreach Services to Superfund and Native American Communities (TOSC and TOSNAC), and the Technical Assistance to Brownfields (TAB) programs. He currently leads the TAB program, which assists local governments and tribes in 21 states, who are redeveloping vacant and blighted properties with environmental concerns. His expertise is in environmental assessments and sustainability decision making. From 2000 to present he has led technology development and/or environmental evaluation efforts for Department of Defense programs. Mr. Leven assists with allocation of funding, management, and reporting for \$300,000 to \$1.75 Million in funded activities at the Center per year.

**John Paulson** - Project/Environmental/Regulatory Manager (City of Hutchinson)

John Paulson is the Project/Environmental/Regulatory Manager for the City of Hutchinson. During his 11 years with the City he has been managing a variety of programs including MS4 Stormwater, Wastewater Pretreatment, Wellhead Protection, Energy Conservation, Sustainability, Green Step City Coordinator, Telecommunications Permitting, helped to develop and remains involved in the City's Facilities Committee, and was the Project Manager for the City's 400 kW ground mounted solar PV system installed on a closed City landfill. John works directly with the public, contractors, elected officials, other local governments, and regulatory agencies to implement a variety of programs and projects. His involvement in various professional organization boards such as MCSC, MECA, CERTs, MESERB, and MWOA has allowed him to continue to develop and maintain the skills and relationships necessary to remain current on a variety of environmental and government issues.

**Brian Ross** – Senior Program Director (Great Plains Institute)

Brian Ross joined the Great Plains Institute (GPI) in 2015 and signed on to advise and assist this cost-free initiative in the Fall of 2017. He leads GPI's work to accelerate the development of solar energy as a self-sustaining energy industry, managing technical and policy programs to help local governments, institutions, and businesses implement sustainable practices for renewable energy. Brian currently works in four Midwestern states to transform local government policies and regulatory standards to accommodate solar energy development. Previous to joining the Great Plains Institute, he was a Principal at CR Planning, facilitating local decision-making and implementation efforts for sustainable development outcomes. He managed the Minneapolis Saint Paul Solar Cities Program and helped cities across the State incorporate sustainable energy practices into zoning and local programs through the

Minnesota Solar Challenge program. Brian has also worked extensively in energy and utility regulation, serving as an expert witness in cost of service and rate design, energy efficiency and renewables, fuel cost reconciliations, and integrated resource planning.

**Lisa Daniels** – Executive Director (Windustry)

Lisa M. Daniels, Executive Director and founder of Windustry, has been providing wind energy education and technical assistance to farmers, ranchers, elected officials, rural utilities and community groups since 1997. Lisa leads Windustry in contracts with the US Dept of Energy and US Dept of Agriculture and works as a partner with National Renewable Energy Laboratory on the Wind Powering America initiative. Nationally, Lisa is a leading voice for distributed renewable energy development and serves on the American Wind Energy Association (AWEA) Community Wind Steering Committee. Lisa is also a founding member and on the Board of Directors for Women of Wind Energy (WoWE). She was recognized in 2004, 2005 and Windustry in 2012 by the US Dept. of Energy Wind Powering America program, for demonstrating leadership and creativity in wind outreach work.

“I am answering YES to your last question on working on the state-wide initiative and with Guy Fisher in Becker County to develop wind and solar on landfills. And I know of some areas where commercial scale wind has operated on a closed landfill for the last 10 years. So it can be done. I have several connections with people who were involved with the project. I also know of several wind projects on brownfields. I tracked on this for a few years. “

**Diana McKeown** – Director (Great Plains Institute - Metro CERT Region)

Diana McKeown joined the Great Plains Institute in July 2013 and is the Metro CERT (Clean Energy Resource Team) Director. Diana has led the Metro region of CERTs since October 2007, during which time she has coordinated and participated in a number of clean energy initiatives, including: Apple Valley’s Better Energy Program; Neighborhood Energy Service (a partnership with Neighborhood Energy Connection and others to deliver residential energy workshops and home visits in all 17 neighborhoods in Saint Paul); an energy makeover of the Lao Family Community Center in partnership with Xcel Energy. Diana has also collaborated on the launch of a number of projects/programs including GreenStep Cities, Minnesota Schools Cutting Carbon, and a variety of energy savings measures through CERTified Campaigns.

**Joel Haskard** – Co-Director (Univ. of MN - Regional Sustainable Development Partnerships & Extension)

Joel Haskard is the Clean Energy Resource Teams (CERTs) Co-Director for the University of Minnesota’s Regional Sustainable Development Partnerships and Extension. Joel has over fifteen years experience coordinating and managing community and economic development activities in the U.S. and abroad. A jack of all trades, Joel works across CERTs programming, and his current focus areas include MN Energy Stories, electric vehicles (EVs), and partnering with utilities on energy efficiency outreach.

**Mayor (Falcon Heights) Peter Lindstrom** (CERTs)

Peter Lindstrom is the Local Government Outreach Coordinator with the Clean Energy Resource Teams (CERTs) at the University of Minnesota’s Regional Sustainable Development Partnerships and Extension. In this role Peter spearheads outreach and education to local units of government (i.e., cities, counties, townships, school districts) about approaches for financing energy efficiency and renewable energy improvements, particularly through the Guaranteed Energy Saving Program (GESp). Peter is also the Mayor of the City of Falcon Heights, MN, and serves on the Regional Council of Mayors. Most recently, Peter was Assistant Director of the Center for Science, Technology & Public Policy at the University of Minnesota Humphrey School, Executive Director of SciMathMN, and the Vice President of Public Affairs at the Minnesota High Tech Association.

**Eric Wojchik** – Resilience Planner (Metropolitan Council Twin Cities)

Eric Wojchik is Senior Planner in Local Planning Assistance with the Metropolitan Council. He provides technical assistance in comprehensive planning and performs resiliency project work. Eric is from

Minnesota but worked in Scotland as a Planner for many years. Much of his overseas work focused on EIA, sustainability, and renewables. Eric has a Masters in Urban and Regional Planning and a Masters in Sustainable Development. He is a chartered Planner of the Royal Town Planning Institute (UK).



## Cameran J. Bailey

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### Appendix 1 – MN Solar Energy Industries Association (MN SEIA): MN Brightfields Initiative Letter of Support



*WE MOVE MN SOLAR FORWARD*

5/1/2018

Commissioner John Linc Stine  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
Saint Paul, MN 55904

**RE: Minnesota Brightfields Initiative Letter of Support**

Dear Commissioner Stine,

The Minnesota Solar Energy Industries Association (MnSEIA) is a 501(c)(6) trade association serving as the voice of the Minnesota solar industry and representing the various solar industry segments operating in Minnesota in its membership.

Today MnSEIA writes the Minnesota Pollution Control Agency (MPCA) in support of the Minnesota Brightfields initiative, which seeks to propel Minnesota into a successful market for photovoltaics (PV) development on closed landfills. This market's success – as we have learned from other state efforts – will require broad stakeholder support and dedicated individuals from the MPCA and elsewhere to assess and implement changes needed in state policy, regulations and other areas. A critical piece is forming a...

## Appendix 2 - MN Communities with Brightfield Interest for their Community: Solar Resource & PV Potential

Community	Closed Landfill Name	Max DNI Solar (kWh/m2/day)	Estimated Solar PV Capacity Potential (MW)	Size of Landfill Property (Acres)	Electric Utility Service Territory
1. Becker County/ Detroit Lakes TWP	BECKER COUNTY SLF	4.04	45.00	240	<a href="#">Wild Rice Electric Coop Incorporated</a>
2. Scott County/Louisville TWP	LOUISVILLE LANDFILL	4.06	12.67	76	<a href="#">MN Valley Electric Coop</a>
3. City of Ramsey	ANOKA/RAMSEY SANITARY LF	4.07	40.95	317	<a href="#">Anoka Municipal Electric</a>
4. Duluth	WLSSD SLF Dump 1	4.02	25.00	150	<a href="#">Minnesota Power</a> <a href="#">Minnesota Power</a>
5. Albert Lea	ALBERT LEA LANDFILL	4.00	6.00	36	<a href="#">Freeborn Mower Electric Coop</a>
6. Kummer (Bemidji)	KUMMER SANITARY LANDFILL	3.97	6.67	40	<a href="#">Otter Tail</a>
7. Hopkins	Hopkins Landfill	4.1	15.21	26	<a href="#">Xcel Energy</a>
8. Medina	WOODLAKE SLF	4.13	11.33	67 / 124	<a href="#">Wright Hennepin Electric Coop</a>
9. Eden Prairie	FLYING CLOUD SLF	3.97	17.67	106	<a href="#">Xcel Energy</a>
10. Oronoco (Olmstead Co.)	OLMSTED COUNTY SANITARY LANDFILL	3.99	50.67	304	<a href="#">peoples cooperative power association</a>
11. Salol/ Roseau County	ROSEAU COUNTY LF	3.89	15.83	102	<a href="#">Roseau Electric Coop Incorporated</a>

## Appendix 3 – U.S. Brightfield Case Studies

MIDWEST CASE STUDIES										
Renewable Energy Technology	Year Operational	State	City	Electric Generation Capacity (MW)	Developer	Waste Management Entity Involved	Landfill Type	Cost	Investor	Simple Payback,w/out RECs (years)
Solar PV	TBD	Illinois	Belvidere (Boone County)	-	-	-	-	-	-	-
Solar PV	2017	Wisconsin	Eau Claire	1	Pristine Sun	-	-	-	-	-
Solar PV	2017	Minnesota	Hutchinson	0.4	AMERESCO	-	MSW	\$1.5M	Grants	18
Solar PV	2016	Minnesota	St. Michael (Lindenfelser Landfill)	0.001	-	-	MSW	\$320,000 in part	Dept. of Commerce	-
Solar PV	2016	Minnesota	Anoka (Fridley Plant)	0.15	-	FMC Corp. (PRP)	Industrial Landfill	-	-	-
Solar PV	2016	Minnesota	Lake Elmo (Washington Co. Landfill)	0.001	-	-	Demolition Landfill	-	-	-
Solar PV	2015	Wisconsin	Middleton (Refuse Hideaway Landfill)	0.01	Full Spectrum Solar Company	-	Municipal, commercial, and industrial landfill	-	-	-
Solar PV	2015	Wisconsin	Milwaukee (MATC PV Evaluation Lab)	0.54	MATC and Johnson Controls	-	MSW	-	-	-
Solar PV	2014	Wisconsin	Beloit (Beloit Coal Ash Landfill)	2.3	Hanwha Q CELLS USA	-	Coal Ash Landfill	-	-	-
Solar PV	2014	Michigan	Hamlin Township (Eaton Rapids Landfill)	0.54	Helios Solar LLC	-	MSW	-	-	-
Solar PV	2018	Ohio	**Brooklyn (Cuyahoga County)	4	IGS Energy	-	-	-	-	-
Solar PV	2010	Kentucky	Fort Campbell (Fort Campbell Solar Phase One)	1.9	IGS ENERGY, Enerlogics and McDonald Hopkins	-	"Landfill"	\$12M	Third-Party Finance, Grants	10
Solar PV	2017	Kentucky	Fort Campbell (Fort Campbell Solar Phase Two)	3.1	Helios Solar LLC	-	"Landfill"	-	-	-
Solar PV	2009	Indiana	Indianapolis (Reilly Tar & Chemical Corp. (Indianapolis Plant)	10.8	Hanwha Q CELLS USA	-	<a href="#">Superfund: Plant, Landfill, water and soil contamination</a>	-	-	-

EAST COAST CASE STUDIES										
Renewable Energy Technology	Year Operational	State	City	Electric Generation Capacity (MW)	Developer	Waste Management Entity Involved	Landfill Type	Cost	Investor	Simple Payback,w/out RECs (years)
Solar PV	2006	Massachusetts	East Bridgewater, Plainville, Randolph	13.5	Soltage	Republic Services	-	-	*Basalt Infrastructure Partners	-
Solar PV	2014	Massachusetts	MT Sullivan (2.5MW), Berkeley (3.6MW), Hudson (5MW), Amesbury (4.5)	15.6	Captona (2.5,3.6,5); Citizens Energy (4.5)	Waste Management	-	Amesbury = \$10M	-	-
Solar PV	2016	Massachusetts	Boxford	1.0	Golden Goose Renewables	-	-	-	-	-
Solar PV	2017	Vermont	South Burlington	2.2	Encore	-	-	-	Enocore-facilitated & Managed	-
Wind	2017	Massachusetts	Hull: 1 singular 60ft tall turbine	1.8	HMLP (local muni-utility)	-	-	-	-	7.5
Solar PV	2017	Massachusetts	Lowell	1.8	AMERESCO	-	-	-	-	-
Solar PV	2017	Massachusetts	Ashburnham	-	-	-	-	-	-	-
Solar PV	2017	Massachusetts	Templeton	-	-	-	-	-	-	-
Solar PV	2014-2017	Massachusetts	Southbridge	-	-	-	-	-	-	-
Solar PV	2014-2017	Massachusetts	Ppperell	-	-	-	-	-	-	-
Solar PV	2014-2017	Massachusetts	<a href="#">Worcester</a>	8.1	-	-	-	\$27M	-	6
Solar PV	2014-2017	Massachusetts	Boston	-	-	-	-	-	-	-
Solar PV	2014-2017	Massachusetts	Lawrence Brockton	-	-	-	-	-	-	-
Solar PV	2014-2017	Massachusetts	Haverhill Holbrook	-	-	-	-	-	-	-
Solar PV	2014-2017	Massachusetts	Rockland	-	-	-	-	-	-	-
Solar PV	2014-2017	Vermont	<a href="#">Elizabeth Mine, Orange County</a>	7	-	-	-	-	-	-
Solar PV	2014-2017	Massachusetts	New Bedford	1.8	-	-	-	-	-	-

### Largest Current Needs:

1. In the state of Minnesota, tax-exempt general obligation bonds are used to pay for the remediation and monitoring of closed landfills owned and/or regulated by the MPCA. The MPCA and many MN communities (cities and counties) want to develop solar energy systems at these closed landfills to generate electricity and save money. However, the MN Management and Budget Office believes that developing solar energy systems on closed landfills would compromise the tax-exempt status of those bonds because those solar energy systems would generate revenue and become tax liable. This is the primary concern of the MN Management and Budget Office, which is precluding all solar development on the capped portion of landfills in the state right now. From a financial standpoint, their concern is withholding the development of over \$1Billion in solar energy investment and development across the state. **We need financial and legal regulatory assistance in developing strategies to assuage their concerns.**

**2. We need assistance in identifying the best demonstration site for the MPCA, and prioritizing future sites.**