EPA
United States
Environmental Protection
Agency

Office of Communications, Partnerships, and Analysis
Office of Land and Emergency Management
September 2018

RE-POWERING AMERICA'S LAND INITIATIVE

MAPPER TOOL USER GUIDE

Mapper Tool User Guide

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1. Introduction to the RE-Powering Mapper

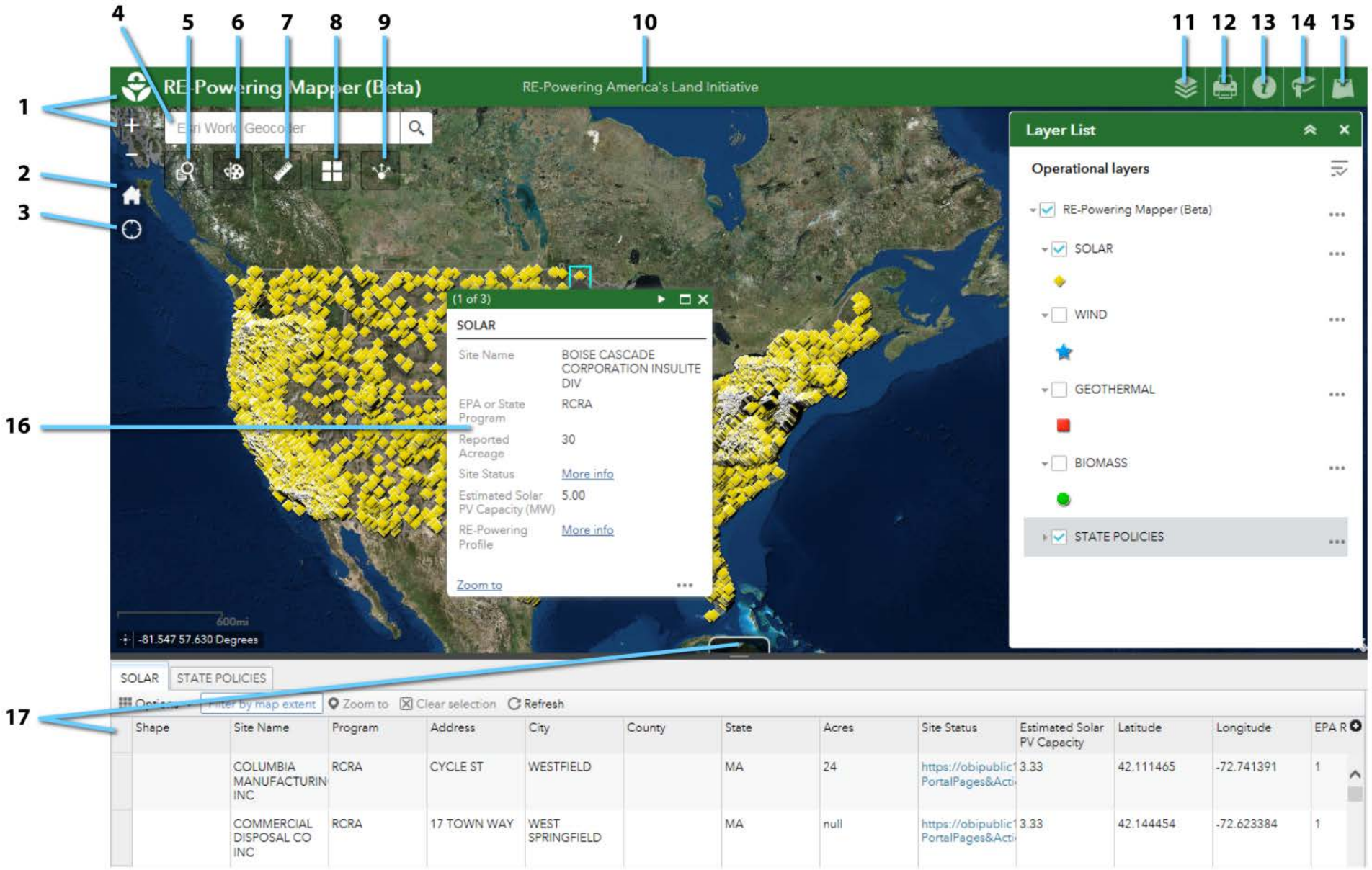
This guide accompanies the EPA RE-Powering America's Land Mapper tool. The RE-Powering Mapper is a web-based application that provides location data for contaminated lands, landfills and mine sites that were collected from state and federal sources and have been pre-screened for renewable energy potential. Data layers (points) are provided by renewable energy type (e.g. solar PV, wind, biomass/biofuel and geothermal). In addition to the point layers, the Mapper comes with a state polygon layer which includes attributes relative to renewable energy policies at the state scale.

Users can filter on multiple attributes to focus on the desired geographic scale, project size and/or distance from major urban center, among other details. A list of all attributes associated with the data layers can be found in section 4 of this publication. The Mapper application includes of a number of functional tools/widgets which are explained in section 3.

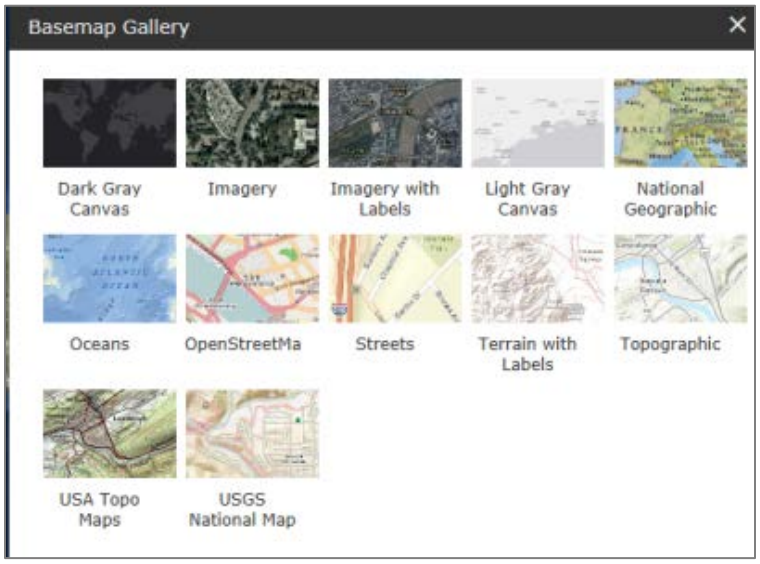
All data is accessible through the Mapper and available for download from the Mapper landing page.

For more information about data sources and the screening process, please see the Data Documentation.

2. Mapper Elements



1. Mapper **zoom in/out** buttons
2. **Home button** returns map to original full extent (i.e., national view)
3. **My Location** icon takes user to his/her location if this is enabled by the user's browser.
4. **Locator search box** allows user to easily find places of interest.
5. **Query** tool includes a few pre-set frequently asked questions of the data.
6. **Draw** tool - use to digitize features in the basemap, thereby creating a new layer.
7. **Measurement** tool to measure area or distance or identify the exact location of a point.
8. **Basemap** tool - use to change the background image of the map.
9. **Share** tool - use to share the Mapper with others.
10. **Attribution** (RE-Powering America's Land Initiative, Office of Communications, Partnerships and Analysis, Office of Land and Emergency Management at the US Environmental Protection Agency.) The link will take you to the RE-Powering America's Land Initiative main webpage.
11. **Layer List** shows the active and inactive layers.
12. **Print** button to capture and print an image of the current map extent.
13. **Information/About** page briefly describes the purpose of the Mapper tool and where to find more information about the data.
14. **Bookmark** tool allows user to capture a place of interest.
15. **Add Data** tool to add data from individual, organizational, or ArcGIS Online data libraries.
16. Site-associated **Pop-up** box shows attributes associated with a particular site. Information is pulled from the attribute table.
17. **Attribute table** is where all of the information is found that is connected to each site. The table may be sorted and filtered. See below for instructions.



3. Using the Mapper Functions

3.1 Open the Mapper

When you first open the Mapper tool from the RE-Powering landing page, you will see a box with an explanation of the Mapper and contact information for the RE-Powering America's Land Initiative. Click "OK" to access the application.

The first time you open the Mapper, it will be populated with yellow diamonds representing the sites pre-screened for solar and the State Policies layer. The active layers and their symbols will be visible in the Layer List panel and you will see attributes related to the solar screen criteria in the A*ttribute Table* [12] at the bottom of the screen. To filter this layer, see Filter the Data below. To add or remove data layers, see Add or Remove Data below.

Note: The time it takes to load data into the web map roughly corresponds to internet speed, plus the number of layers you want to visualize and the scale at which you are looking at the map. Thus, it may take a few more seconds to load all data for the whole United States than to load one layer for a particular community.

3.2 Add or Remove Data Layers

You may add or remove layers at any time.

1. If not already displayed, click the *Layer List* icon [11].

2. To add layers not visible, click the box next to the name. At the same time as the layer appears, the attribute table associated with that layer will load at the bottom of the screen. You can navigate to that tab to filter that layer by the desired attribute(s).

3. Simply uncheck the box to remove a layer and the table from the map view.

4. To restore the application default layers, refresh the map.

3.3 Change the background

The default background for the Mapper is satellite imagery. It may be useful to get a better sense of terrain or to see names of places. To change the background, click on the *Basemap* icon [8]. Choose from among the available options by clicking on the background type.

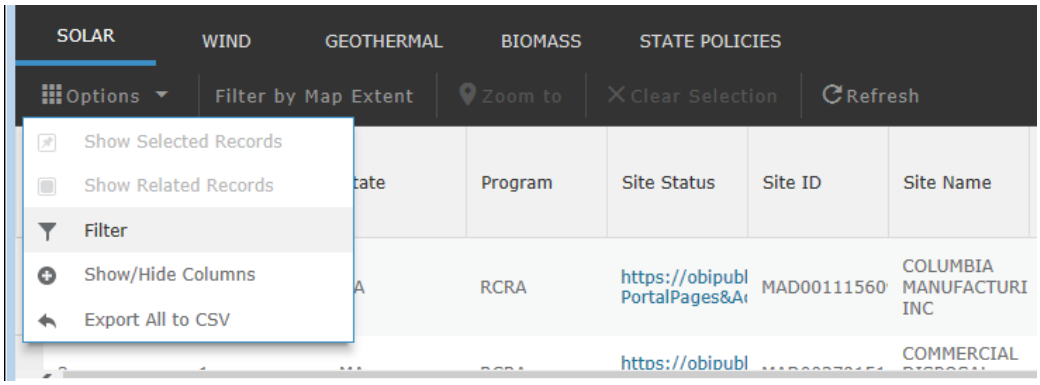
3.4 Filter the data layers

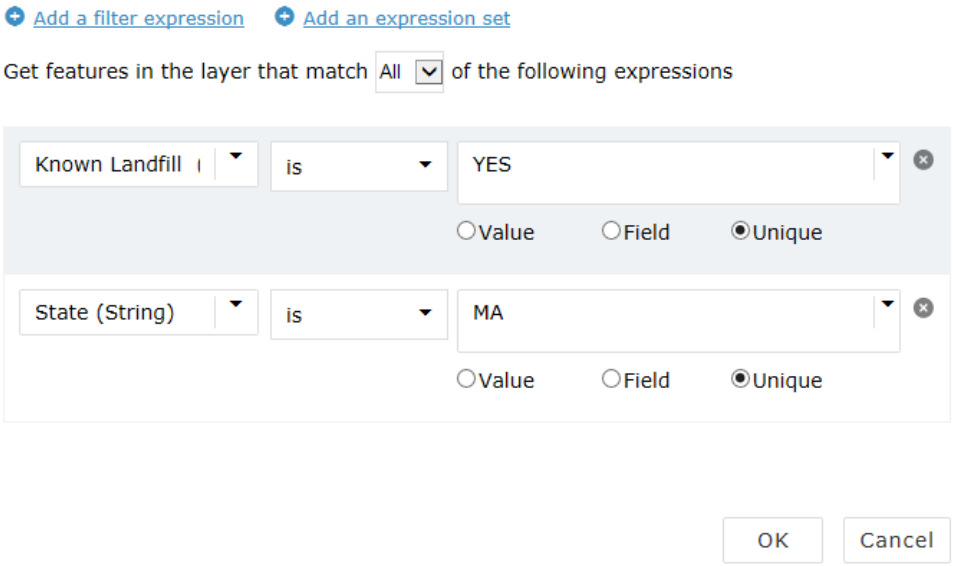
This is the most important function for finding what you need. Each table can be filtered within the application, dynamically altering the map display. Users can filter on every field in the data table. Below are some examples of how to filter the attribute table to narrow the dataset to the area(s) of interest, including the associated expressions and output. Output tables can be exported to a .csv file and opened in Microsoft Excel.

Example question 1:

Where are the landfills that have been pre-screened positively for solar in Massachusetts?

1. Click on *Attribution Table* icon [17].
2. If highlighted, unclick "Filter by Map Extent."
3. Choose "SOLAR" table on which to filter (if not there, click on *Layer List* [11] as in step 3.2 to add).
4. Click "Options" → Filter.
5. Choose to "Add a filter expression."
6. Create 2 filter expressions as shown in picture and click "OK."





Sites that fit these criteria will now be displayed. You may have to zoom or pan to find them on the map. Note: the "Unique" radial button is best for fields that have categorical data and/or have a binary answer (YES/NO). These fields/attributes are called 'strings'. If you are unsure of the possible categories or how categorical data is formatted (e.g., abbreviations, spelling conventions, etc.) you can choose "Unique" and the unique values will load. A drop-down menu will be provided.

Example question 2:

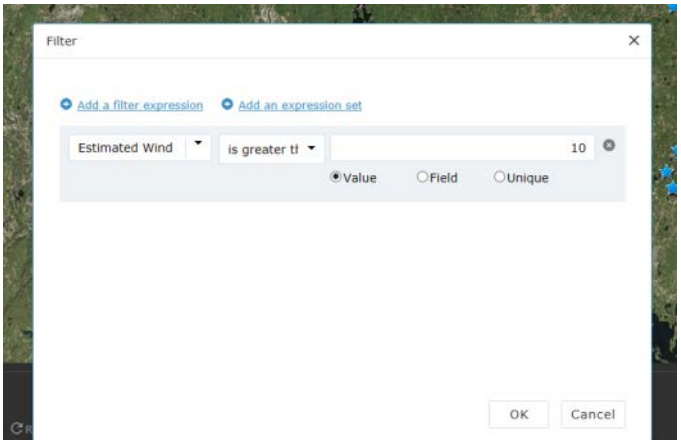
How many WIND sites have a potential capacity of greater than 10 MW?

1. Make sure WIND layer and *Attribute Table* are added to map.

2. Make sure that "Filter by Map Extent" is not highlighted.

3. Open *Attribute Table* and click Options → Filter → Add a filter expression

4. Add the expression below and click "OK". Note: The "Value" radial button is best for fields with numerical data. In this case, we are looking for a number greater than 10 MW. The filter should return 3805 potential sites. You may need to zoom out or pan to the sites.



3.5 Export table(s)

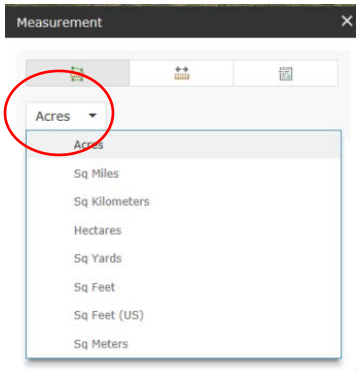
To export your lists from the above filters or any other specific search, or to capture a complete table of each renewable energy layer, click in the *Attribute Table* on Options → Export all to .csv. The file can be downloaded and opened in Microsoft Excel for additional analyses.

3.6 Take Measurements

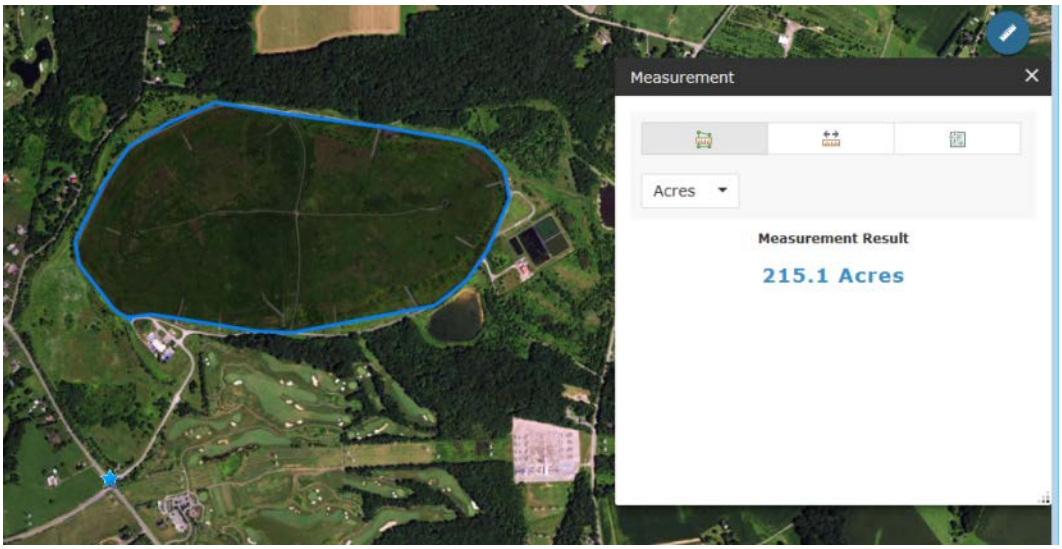
A user may know an area well and want to use his/her knowledge of a site boundary to take a measurement of an area. Or, a user may want to calculate the distance of a site to another feature on the landscape. The *Measurement* tool [7] allows a user to do both.

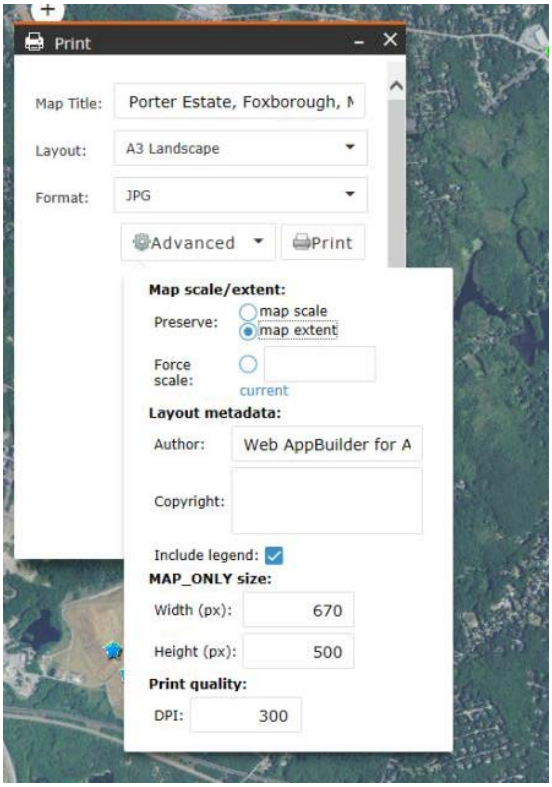
Example question:

What is the area of a landfill of interest?



1. Click icon, then chose *Area* measurement icon. Click drop-down menu to choose units.
2. Click on a point along the site boundary and draw shape, clicking once at each vertex.
3. Double-click when finished and the result will appear in the box.





3.7 Print

Images can be printed directly from the application.

1. Click on the *Print* icon [12] at the bottom of the screen.

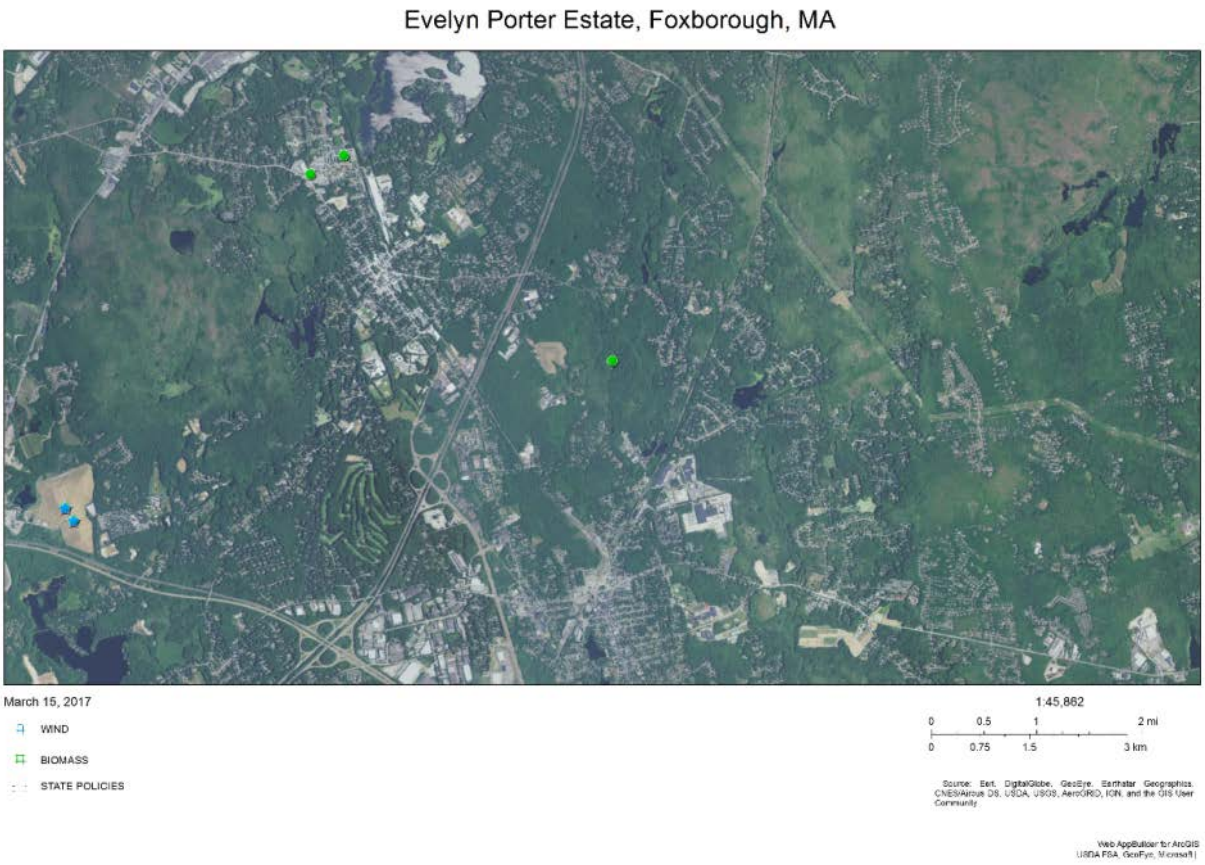
2. There are many ways to set up the print job. Go to "Advanced" to make changes, add author information and to include a legend.

3. Change the layout as desired using drop-down menu.

4. Choose the format from the drop-down menu. Click "Print" and an image will be generated.

5. Click on the link and use browser tools to print the image.

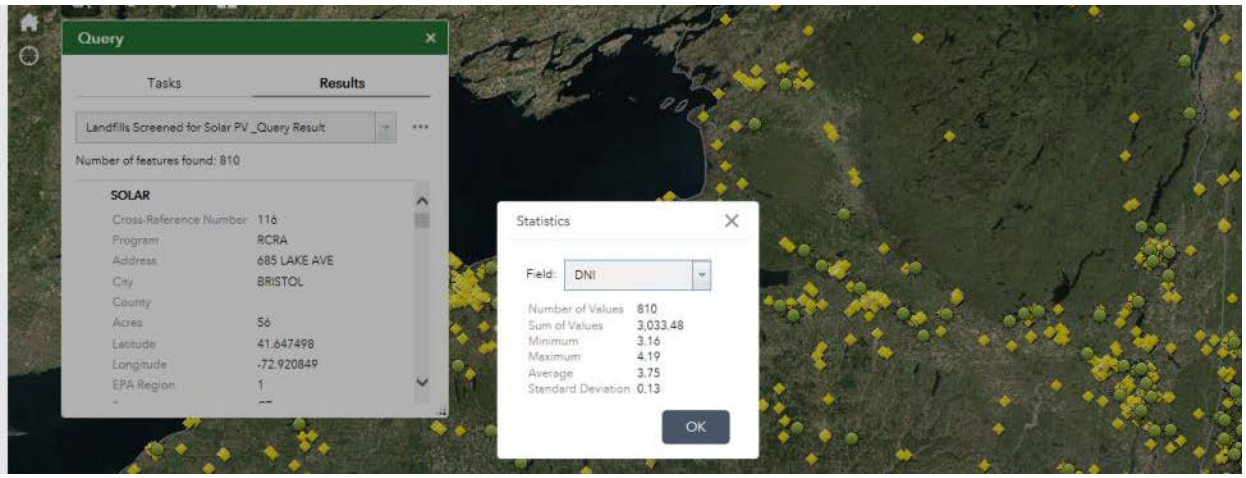
The settings at the right produced the map below.



3.8 Use the Query Tool

Filtering the table directly is the best option for extracting the information you need. However, the *Query* tool [5] was developed to include a set of preset data filters. The information is no different from filtering the attribute tables yourself. This tool expedites a data request by responding to commonly expressed data needs. You can use this tool to go immediately to these data sets:

- Landfills pre-screened for Solar PV energy potential
- Utility Scale Solar
- Utility Scale Wind
- States with RE-Powering incentives (See Appendix and *Data Documentation* for more information about this category.)

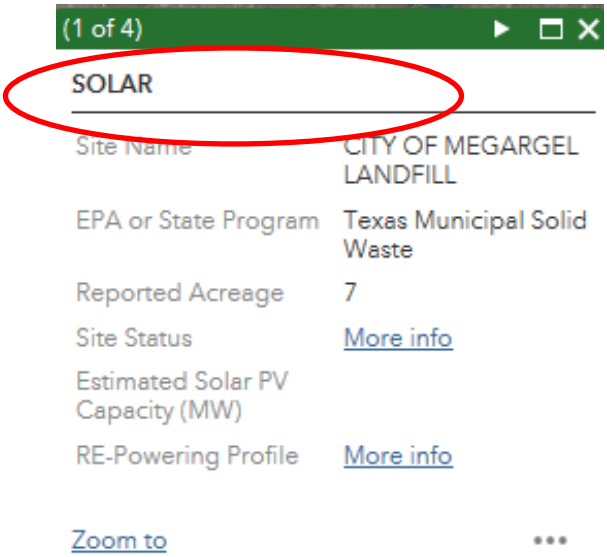


Once executed, the results of the query will display on the map as an additional layer, and the attribute table will be added at the bottom of the screen. Data from the query layer can be exported to a .csv. Click on the ". . ." at the upper right for the option to either view or export the table associated with the query results. In the case of numerical data, you can also extract summary statistics.

** Note: for best results, zoom in to an area of interest before executing a query. All results will be displayed on the map, but ***because of program limitations, only 1,000 records will display in the attribute table and only 1,000 records at a time may be exported***. Therefore, the more targeted the area of querying, the better.

3.9 Read Pop-up Box for Site Information Summary

You may wish to see a quick snap-shot of a site of interest. Pop-up boxes have information about a site, drawn directly from the attribute table. The box appears when the user clicks on the site symbol in the map.

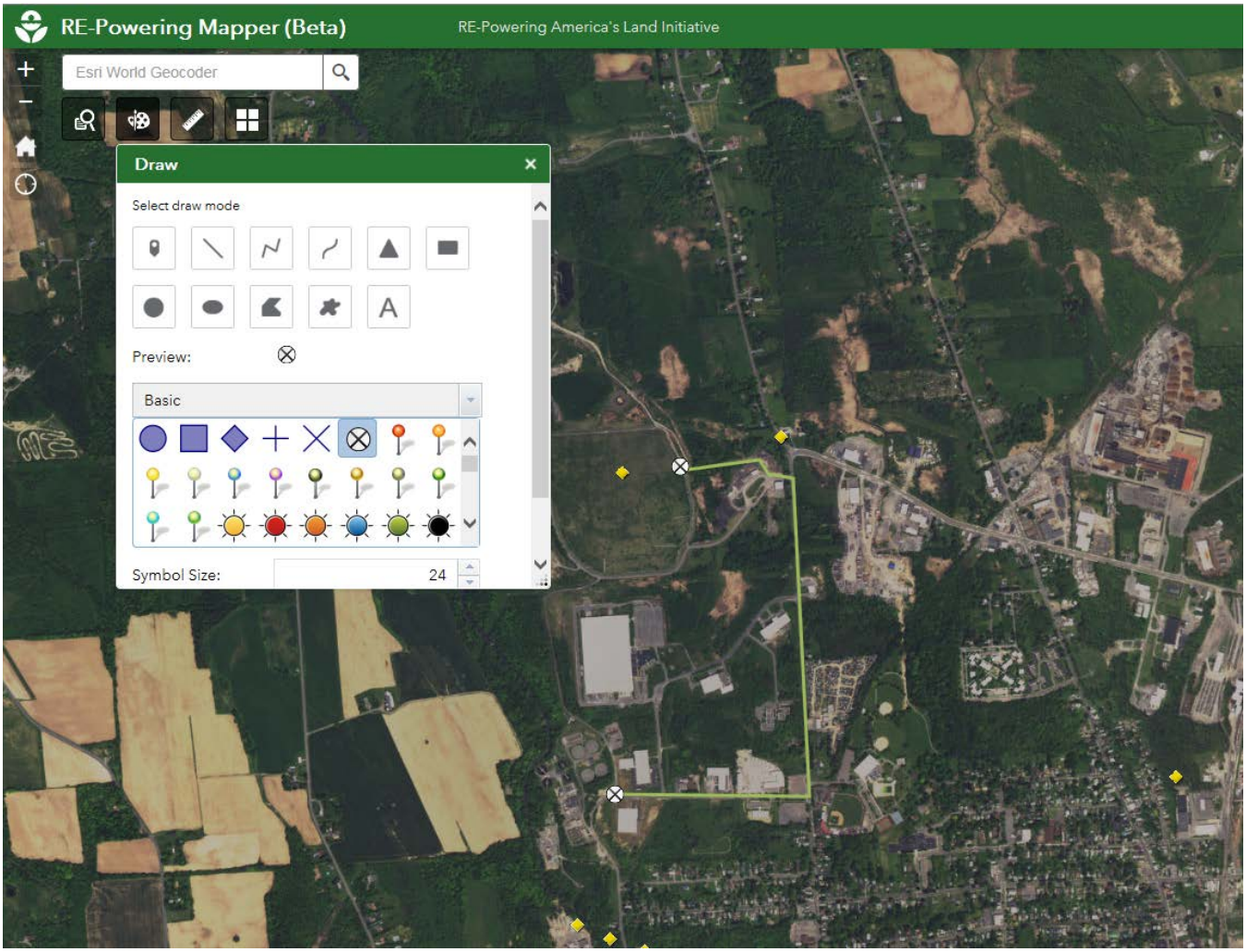


As mentioned above, sometimes a site will have pre-screened positively for more than one renewable energy type. If two or more layers are activated, you can click on a site and scroll through the pop-up boxes using the arrow at the top right. The example on the right has 3 pages. The pages can also be maximized for easier viewing.

Inside the Pop-Up box, you will see two links. One to the EPA or state program responsible for managing the site (Site Status), for more information about the site clean-up progress and status. Another link, RE-Powering Profile, will take you to a page describing the renewable energy screening results for that site.

3.10 Draw your own shapes

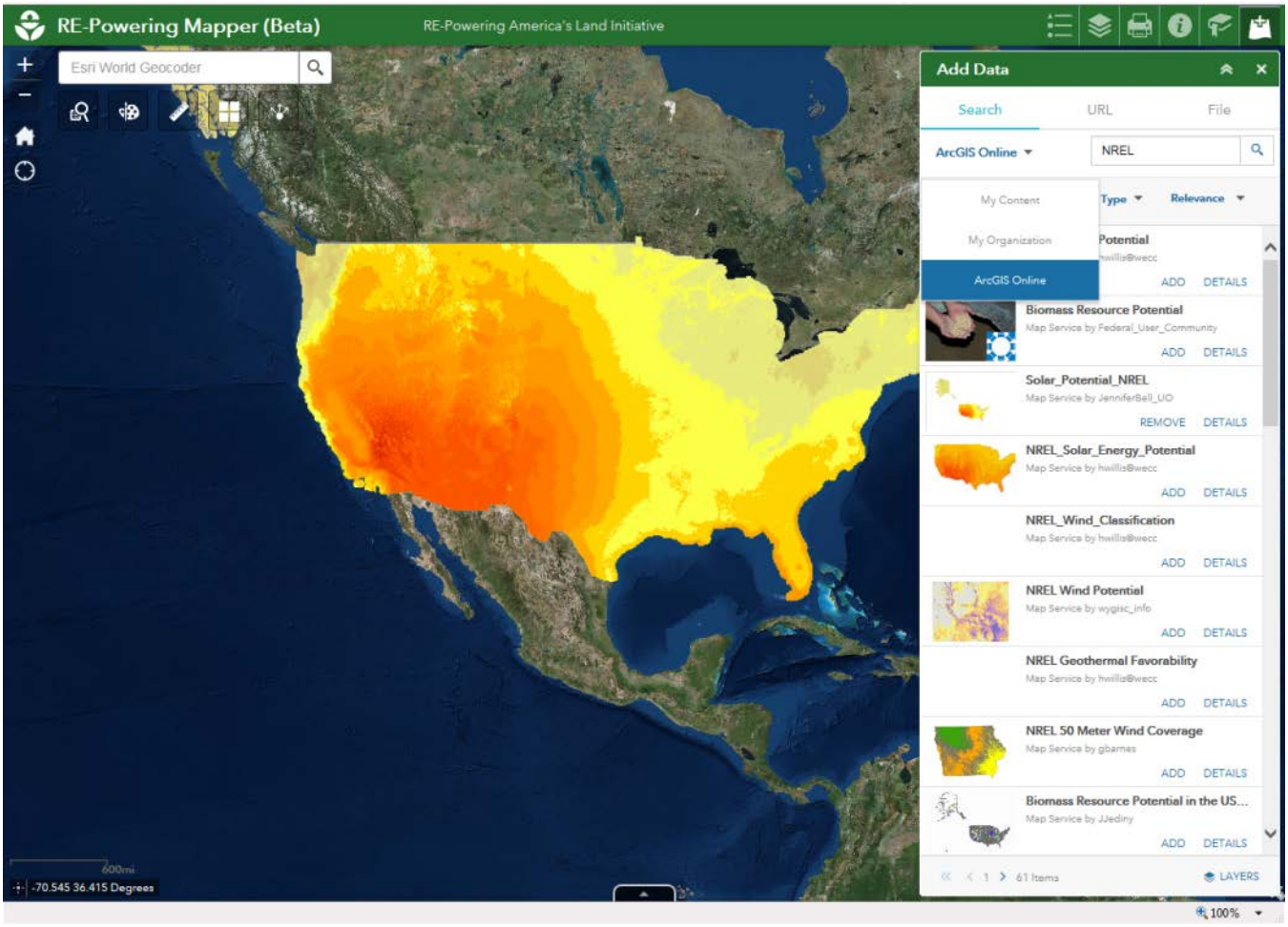
In some instances, you may wish to digitize a feature (e.g. land area, road, proposed transmission line) to create a new shape from the base map. This can be accomplished using the *Draw* tool [6].



You can create polygons, lines or points on your map. You can also get a report of the measurement (area or distance) associated with your added features. Be aware that these new features will not save to your map, but you can produce an image file or PDF using the Print option. For more advanced spatial analysis, consider downloading the RE-Powering shapefiles, found on the RE-Powering America's Land Initiative Mapper webpage to your own GIS.

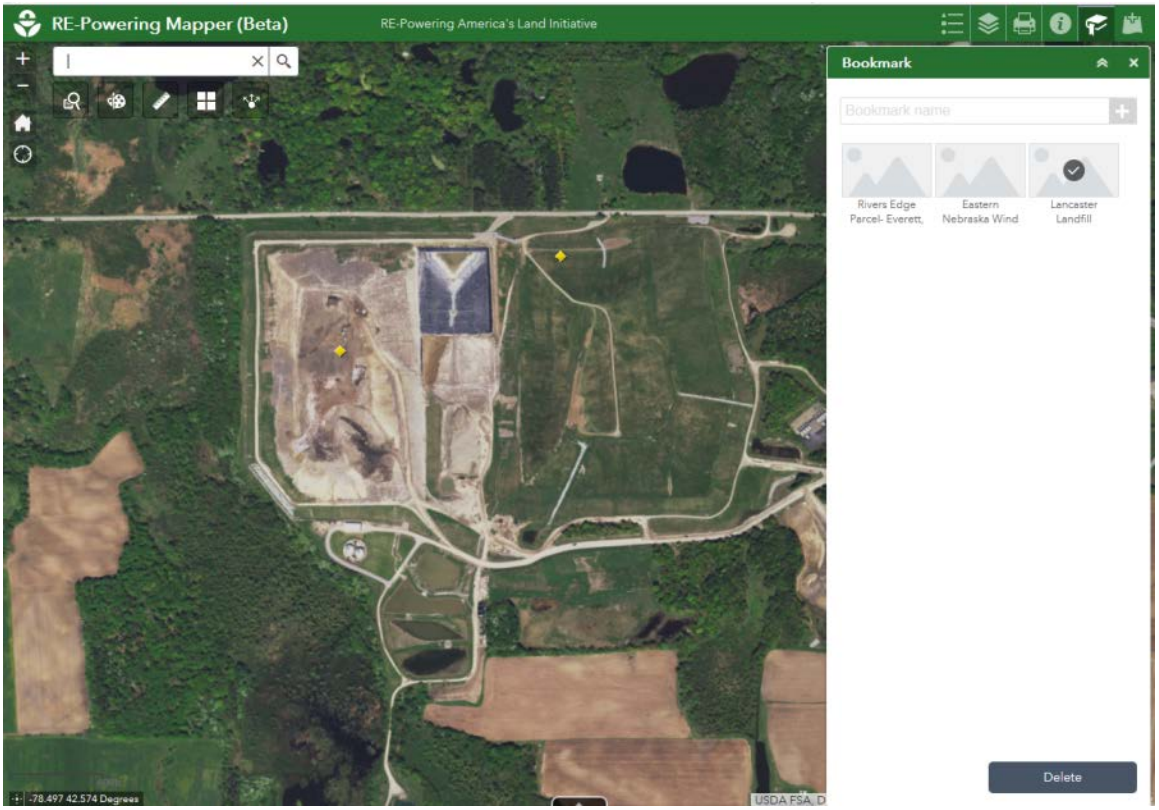
3.11 Add Data

In some instances, the user may wish to *Add Data* [15] layers to the Mapper. Data stored within the user's Esri ArcGIS Online account, organization account, or within the Esri ArcGIS Online data library may be added to the Mapper. For example, the image below shows the addition of an NREL solar resource layer from the ArcGIS Online catalog.



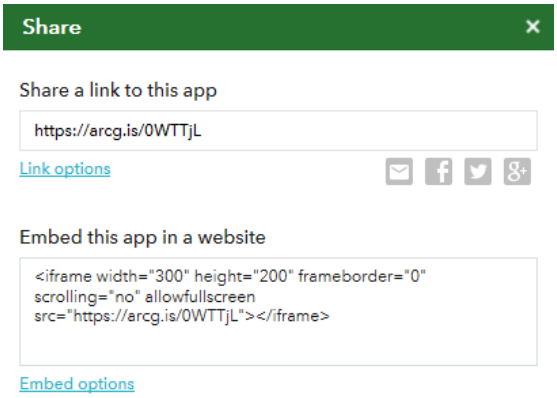
3.12 Bookmark

It may be necessary for a user to keep track of places that are meaningful or worth saving. In this case, you can use the *Bookmark* tool [14] to create custom saves at the desired location and scale. These will be available any time you open the application. Note that while the location will be bookmarked, the data you see is connected to the layers you have turned on at the time you view the book-marked spot. To add a Bookmark, zoom to the desired spot, type in the name and click the plus button.



3.13. Share

The Share tool [9] allows you to send a link to the Mapper via e-mail or social media, and/or to embed the application into a website. At this time, it is not possible to share saved or Bookmarked views. The best way to share a specific site would be to export the table and/or to generate a print view and share the image or PDF.



4. Attribute Table Details

4.1 Solar

Field Heading	Table Heading	Description	Units	Data Type	Values
ObjectID	NA	ArcGIS shape identifier		Object ID	
Shape	NA	ArcGIS descriptor		Geometry	
Reference	Cross-Reference Number	Site identification number for cross-reference with other renewable energy type tables		Number	
EPARegion	EPA Region	EPA Region where site is located		Number	1-10
State	State	State where site is located		Text	
Program	Program	EPA program from which data were collected. See notes about program in Data Documentation		Text	
SiteStatus	Site Status	Link to the federal or state program area responsible for collecting information about the site. Follow this link to find contamination and clean-up status. See notes in Data Documentation		Text	
SiteID	Site ID	EPA or state unique identification code		Text	
SitePrfile	RE-Powering Profile	Link to a summary of site's renewable energy potential. May include solar, wind, biomass, and geothermal.		Text	
SiteName	Site Name	Name of site/property		Text	
Address	Address	Address of site		Text	
City	City	City where site is located		Text	
County	County	County where latitude and longitude plots		Text	
ZipCode	Zip	Zip Code for the site		Text	
Acres	Acres	Acreage used for analysis		Double	
DNIkWHm2day	Max DNI	Measurement of the direct normal irradiance (DNI) solar resource availability in kilowatt hour per meter squared per day	kWh/m2/day	Double	
EstPVCap	Estimated PV Capacity	Estimated PV solar capacity potential based on land requirement of 4.5 acres per MW	MW	Double	
LrgUtilPV	Large Utility Scale	Indicates sites with large utility scale solar PV potential.		Text	YES/blank
UtilPV	Utility Scale	Indicates sites with utility scale solar PV potential.		Text	YES/blank
SmUtilPV	Small Utility Scale	Indicates sites with small utility scale solar PV potential.		Text	YES/blank
DistribPV	Large Distributed Scale	Indicates sites with large distributed/commercial scale solar PV potential.		Text	YES/blank
Offgrid	Off-grid	Indicates sites with off-grid or stand-alone solar PV potential		Text	YES/blank

Field Heading	Table Heading	Description	Units	Data Type	Values
NoAcreage	No Acreage	Indicates sites with possible potential but size undetermined because acreage was not available		Text	YES/blank
SSVoltage	Substation Voltage	Voltage of nearest substation	Volts	Long Integer	
SSDist	Distance to Substation	Distance of site to nearest substation	Miles	Double	
TLStatus	Transmission Line Status	Status of nearest transmission line		Text	PROPOSED/IN SERVICE
TLkV	Transmission Line kV	kV capacity of nearest transmission line	Kilovolts	Long Integer	
TransDist	Distance to Transmission	Distance to nearest transmission	Miles	Double	
RdDist	Distance to Road	Distance to nearest road	Miles	Double	
UrbanArea	Urban Area	Indicates the closest "Urban Area" as defined by US Census Bureau. In general, this territory consists of areas of high population density and urban land use resulting in a representation of the "urban footprint." There are two types of urban areas: urbanized areas (UAs) that contain 50,000 or more people and urban clusters (UCs) that contain at least 2,500 people, but fewer than 50,000 people (except in the U.S. Virgin Islands and Guam which each contain urban clusters with populations greater than 50,000).		Text	
UAPop	Urban Area Population	Population of closest urban area		Long Integer	
UADist	Distance to Urban Area	Distance to closed urban area	Miles	Double	
Landfill	Known Landfill	Known landfill. Some sites that are landfills may not be identified.		Text	YES/blank
LStatus	Landfill Status	Status of landfill if known		Text	OPEN/CLOSED/blank
LYrClosed	Yr Landfill Closed	Year landfill closed		Text	
LOwner	Landfill Owner	Landfill owner		Text	
LOwnerType	Landfill Owner Type	Landfill owner type		Text	PUBLIC/PRIVATE/blank
LCurrentArea	Landfill Current Area	Current waste mass area of landfill	acres	Double	
LTotalArea	Landfill total Area	Total area of land the landfill is located on	acres	Double	

Field Heading	Table Heading	Description	Units	Data Type	Values
LGOperational	Landfill Gas Operational	The landfill gas energy project is commercially operational. Landfills can have more than one LFG energy project record. For these sites, there may be potential to leverage LFG infrastructure for co-generation with renewable energy source.		Text	YES/blank
Latitude	Latitude	Latitude of the point		Double	
Longitude	Longitude	Longitude of the point		Double	

4.2 Wind

Field Heading	Table Heading	Description	Units	Data Type	Values
ObjectID	NA	ArcGIS shape identifier		Object ID	
Shape	NA	ArcGIS descriptor		Geometry	
Reference	Cross-Reference Number	Site identification number for cross-reference with other renewable energy type tables		Number	
EPARegion	EPA Region	EPA Region where site is located		Number	1-10
State	State	State where site is located		Text	
Program	Program	EPA program from which data were collected. See notes about program in Data Documentation		Text	
SiteStatus	Site Status	Link to the federal or state program area responsible for collecting information about the site. Follow this link to find contamination and clean-up status. See notes in Data Documentation		Text	
SiteID	Site ID	EPA or state unique identification code		Text	
SitePrfile	RE-Powering Profile	Link to a summary of site's renewable energy potential. May include solar, wind, biomass, and geothermal.		Text	
SiteName	Site Name	Name of site/property		Text	
Address	Address	Address of site		Text	
City	City	City where site is located		Text	
County	County	County where latitude and longitude plots		Text	
ZipCode	Zip	Zip Code for the site		Text	
Acres	Acres	Acreage used for analysis		Double	
LrgUtilWnd	Large Utility Scale	Indicates sites with large utility wind energy generation potential			
UtilWnd	Utility Scale	Indicates sites with utility scale wind energy generation potential		Text	YES/blank
SmUtilWnd	Small Utility Scale	Indicates sites with small utility scale wind energy generation potential			

Field Heading	Table Heading	Description	Units	Data Type	Values
DistribWnd	Large Distributed Scale	Indicates sites with large distributed/commercial scale wind energy generation potential		Text	YES/blank
Turb_1_2	1-2 Turbines	Indicates sites with wind energy generation potential with sufficient acreage for 1-2 turbines		Text	YES/blank
Offgrid	Off-grid	Indicates sites with off-grid or stand-alone wind energy potential		Text	YES/blank
NoAcreage	No Acreage	Indicates sites with possible potential but size undetermined because acreage was not available		Text	YES/blank
EstWindCap	Estimated Wind Energy Capacity Potential	Estimated potential based on land requirements calculated from wind farms installed from small- to utility-scale	MW	Double	
WS60m	Wind speed at 60 m (m/s)	Measurement of the wind speed measured at 60m above ground	Meters/second	Double	
WS80m	Wind speed at 80 m (m/s)	Measurement of the wind speed measured at 80m above ground	Meters/second	Double	
WS120m	Wind speed at 120 m (m/s)	Measurement of the wind speed measured at 120m above ground	Meters/second	Double	
WS140m	Wind speed at 140 m (m/s)	Measurement of the wind speed measured at 140m above ground	Meters/second	Double	
SSVoltage	Substation Voltage	Voltage of nearest substation	Volts	Long Integer	
SSDist	Distance to Substation	Distance of site to nearest substation	Miles	Double	
TLStatus	Transmission Line Status	Status of nearest transmission line		Text	PROPOSED/IN SERVICE
TLkV	Transmission Line kV	kV capacity of nearest transmission line	Kilovolts	Long Integer	
TransDist	Distance to Transmission	Distance to nearest transmission	Miles	Double	
RdDist	Distance to Road	Distance to nearest road	Miles	Double	

Field Heading	Table Heading	Description	Units	Data Type	Values
UrbanArea	Urban Area	Indicates the closest "Urban Area" as defined by US Census Bureau. In general, this territory consists of areas of high population density and urban land use resulting in a representation of the "urban footprint." There are two types of urban areas: urbanized areas (UAs) that contain 50,000 or more people and urban clusters (UCs) that contain at least 2,500 people, but fewer than 50,000 people (except in the U.S. Virgin Islands and Guam which each contain urban clusters with populations greater than 50,000).		Text	
UAPop	Urban Area Population	Population of closest urban area		Long Integer	
UADist	Distance to Urban Area	Distance to closed urban area	Miles	Double	
Landfill	Known Landfill	Known landfill. Some sites that are landfills may not be identified.		Text	YES/blank
Latitude	Latitude	Latitude of the point		Double	
Longitude	Longitude	Longitude of the point		Double	

4.3 Biomass/Biofuel

Field Heading	Table Heading	Description	Units	Data Type	Values
ObjectID	NA	ArcGIS shape identifier		Object ID	
Shape	NA	ArcGIS descriptor		Geometry	
Reference	Cross-Reference Number	Site identification number for cross-reference with other renewable energy type tables		Number	
EPARegion	EPA Region	EPA Region where site is located		Number	1-10
State	State	State where site is located		Text	
Program	Program	EPA program from which data were collected. See notes about program in Data Documentation		Text	
SiteStatus	Site Status	Link to the federal or state program area responsible for collecting information about the site. Follow this link to find contamination and clean-up status. See notes in Data Documentation		Text	
SiteID	Site ID	EPA or state unique identification code		Text	

Field Heading	Table Heading	Description	Units	Data Type	Values
SitePrfile	RE-Powering Profile	Link to a summary of site's renewable energy potential. May include solar, wind, biomass, and geothermal.		Text	
SiteName	Site Name	Name of site/property		Text	
Address	Address	Address of site		Text	
City	City	City where site is located		Text	
County	County	County where latitude and longitude plots		Text	
ZipCode	Zip	Zip Code for the site		Text	
Acres	Acres	Acreage used for analysis		Double	
CumBioRes	Cumulative Biopower Resources	Cumulative biomass resources in metric tons/year, used to determine biopower facility siting potential, including: forests; primary and secondary mills; urban wood stock	Metric tons/yr within 50 miles	Double	
BioFacPot	Biopower Facility Potential	Indicates sites with biopower facility siting potential based on woody biomass or crop feedstock		Text	YES/blank
CumRefRes	Cumulative Biorefinery Residues	Cumulative biomass resources in metric tons/year, used to determine biorefinery acility siting potential, includes: crop residues.	metric tons/yr within 50 miles	Double	
BioRefPot	Biorefinery Facility Potential	Indicates sites with biorefinery facility siting potential based on herbaceous feedstock		Text	YES/blank
Crops	Crops	Crop residues (dry metric tons/year), includes residues from corn, wheat, soybeans, cotton, sorghum, barley, oats, rice, rye, canola, dry edible beans, dry edible peas, peanuts, potatoes, safflower, sunflower, sugarcane and flaxseed	metric tons/yr within 50 miles	Double	
Forest	Forest	Forest residues (dry metric tons/year), includes logging residues and other removable material left after carrying out silviculture operations and site conversions	metric tons/yr within 50 miles	Double	
PrimMill	Primary Mill	Primary mill residues (dry metric tons/year), includes wood materials (coarse and fine) and bark generated at manufacturing plants (primary wood-using mills) when round wood products are processed into primary wood products	metric tons/yr within 50 miles	Double	
SecMill	Secondary Mill	Secondary mill residues (dry metric tons/year), includes wood scraps and sawdust from woodworking shops	metric tons/yr within 50 miles	Double	

Field Heading	Table Heading	Description	Units	Data Type	Values
UrbanWasteWood	Urban Waste Wood	Urban wood residues (dry metric tons/year), includes wood residues from wood chips, pallets, utility tree trimming and/or private tree companies, and construction and demolition sites	metric tons/yr within 50 miles	Double	
SSVoltage	Substation Voltage	Voltage of nearest substation	Volts	Long Integer	
SSDist	Distance to Substation	Distance of site to nearest substation	Miles	Double	
TLStatus	Transmission Line Status	Status of transmission line		Text	PROPOSED/IN SERVICE
TLkV	Transmission Line kV	kV capacity of nearest transmission line	Kilovolts	Long Integer	
TransDist	Distance to Transmission	Distance to nearest transmission	Miles	Double	
RdDist	Distance to Road	Distance to nearest road	Miles	Double	
RailDist	Distance to Rail	Distance to nearest rail line	Miles	Double	
UrbanArea	Urban Area	Indicates the closest "Urban Area" as defined by US Census Bureau. In general, this territory consists of areas of high population density and urban land use resulting in a representation of the "urban footprint." There are two types of urban areas: urbanized areas (UAs) that contain 50,000 or more people and urban clusters (UCs) that contain at least 2,500 people, but fewer than 50,000 people (except in the U.S. Virgin Islands and Guam which each contain urban clusters with populations greater than 50,000).		Text	
UAPop	Urban Area Population	Population of closest urban area		Long Integer	
UADist	Distance to Urban Area	Distance to closed urban area	Miles	Double	
Landfill	Known Landfill	Known landfill. Some sites that are landfills may not be identified.		Text	YES/blank
LStatus	Landfill Status	Status of landfill if known		Text	OPEN/CLOSED/blank
LYrClosed	Yr Landfill Closed	Year landfill closed		Text	
LOwner	Landfill Owner	Landfill owner		Text	
LOwnerType	Landfill Owner Type	Landfill owner type		Text	PUBLIC/PRIVATE/blank
LCurrentArea	Landfill Current Area	Current waste mass area of landfill	acres	Double	
LTotalArea	Landfill total Area	Total area of land the landfill is located on	acres	Double	

Field Heading	Table Heading	Description	Units	Data Type	Values
LGOperational	Landfill Gas Operational	The landfill gas energy project is commercially operational. Landfills can have more than one LFG energy project record. For these sites, there may be potential to leverage LFG infrastructure for co-generation with renewable energy source.		Text	YES/blank
Latitude	Latitude	Latitude of the point		Double	
Longitude	Longitude	Longitude of the point		Double	

4.4 Geothermal

Field Heading	Table Heading	Description	Units	Data Type	Values
ObjectID	NA	ArcGIS shape identifier		Object ID	
Shape	NA	ArcGIS descriptor		Geometry	
Reference	Cross-Reference Number	Site identification number for cross-reference with other renewable energy type tables		Number	
EPARegion	EPA Region	EPA Region where site is located		Number	1-10
State	State	State where site is located		Text	
Program	Program	EPA program from which data were collected. See notes about program in Data Documentation		Text	
SiteStatus	Site Status	Link to the federal or state program area responsible for collecting information about the site. Follow this link to find contamination and clean-up status. See notes in Data Documentation		Text	
SiteID	Site ID	EPA or state unique identification code		Text	
SitePrfile	RE-Powering Profile	Link to a summary of site's renewable energy potential. May include solar, wind, biomass, and geothermal.		Text	
SiteName	Site Name	Name of site/property		Text	
Address	Address	Address of site		Text	
City	City	City where site is located		Text	
County	County	County where latitude and longitude plots		Text	
ZipCode	Zip	Zip Code for the site		Text	
Acres	Acres	Acreage used for analysis		Double	
SurfTemp	Surface Temperature	Mean ground surface temperature	˚C	Long Integer	
GeoHeatPumpPot	Geothermal Heat Pump Potential	Indicates sites with geothermal heat pump potential		Text	YES/blank
SSVoltage	Substation Voltage	Voltage of nearest substation	Volts	Long Integer	

Field Heading	Table Heading	Description	Units	Data Type	Values
SSDist	Distance to Substation	Distance of site to nearest substation	Miles	Double	
TLStatus	Transmission Line Status	Status of transmission line		Text	PROPOSED/IN SERVICE
TLkV	Transmission Line kV	kV capacity of nearest transmission line	Kilovolts	Long Integer	
TransDist	Distance to Transmission	Distance to nearest transmission	Miles	Double	
RdDist	Distance to Road	Distance to nearest road	Miles	Double	
UrbanArea	Urban Area	Indicates the closest "Urban Area" as defined by US Census Bureau. In general, this territory consists of areas of high population density and urban land use resulting in a representation of the "urban footprint." There are two types of urban areas: urbanized areas (UAs) that contain 50,000 or more people and urban clusters (UCs) that contain at least 2,500 people, but fewer than 50,000 people (except in the U.S. Virgin Islands and Guam which each contain urban clusters with populations greater than 50,000).		Text	
UAPop	Urban Area Population	Population of closest urban area		Long Integer	
UADist	Distance to Urban Area	Distance to closed urban area	Miles	Double	
Landfill	Known Landfill	Known landfill. Some sites that are landfills may not be identified.		Text	YES/blank
Latitude	Latitude	Latitude of the point		Double	
Longitude	Longitude	Longitude of the point		Double	

4.5 State Policies

Field Headings (Visible)	Pop-up Heading	Units	Description	Data Type
OBJECTID	NA			Object ID
Shape	NA			Geometry
GEOID	NA			GEOID
STUPS	STUPS		State abbreviation	String
NAME	Name		State name	String
RPS	RPS	Yes/No/ Goal	States with a Renewable Portfolio Standard or goal	String
DeregEM	Deregulated Electricity Market	Yes/No	State electricity market is deregulated.	String
RE_Powering	RE-Powering Incentive	Yes/No	States that encourage, through regulation, RE on brownfields, landfills and/or mine sites	String
PhysNetMet	Physical Net-metering	Yes/No	State has physical net-metering	String
VirtNetMet	Virtual Net-Metering	Yes/No	State has virtual net-metering	String
RETaxIncentive	Renewable Energy Tax Incentive	Yes/No	State has renewable energy tax incentive above and beyond federal tax incentives	String
SharedRE	Shared Renewable Energy Program	Yes/No	State has policies to specifically encourage community solar or some other form of shared renewables	String
CCA	Community Choice Aggregation	Yes/No	State has legislation that specifically allows community choice aggregation?	String
ElectRetChoice	Electricity Retail Choice	Yes/No	State has adopted electric retail choice programs that allow end-use customers to buy electricity from competitive retail suppliers	String
GreenTariff	Green Tariff	Yes/No	State has a green tariff	String
ScreenedSites	Screened Sites		Total number of sites screened in Mapper	Number
Shape_Length	NA			Number
Shape_Area	NA			Number