



Financial Benefits Data Dictionary

There are six main sections to this Data Dictionary.

1. [Overview](#)
2. [Data sources](#)
3. [Description of Data Library's columns and entry types](#)
4. [Approach for development of Data Library](#)
5. [Supporting tables for Article](#)
6. [Further description of our methodology](#)

1. Overview

1.1 General overview

RMi compiled and analyzed the financial benefit structures that developers offered host communities (e.g., tax revenue, host community agreements, community benefits agreements) and the total value of those benefits for more than 200 utility-scale solar, onshore wind, and battery storage projects. These projects all required local approval at the township- or county-level as a key factor in their success or failure and had publicly available information on proposed community benefits. The 96 successful projects represent 17.9 gigawatts and an estimated \$33.2 billion in successful investment. We also analyzed 101 projects that failed to secure local permits, representing 18.8 gigawatts and an estimated \$33.6 billion in unrealized investment. Our analysis builds on existing research to examine a central question: How do the finances of community benefit offers influence and differentiate project outcomes?

The data from our sample set is publicly available so that others can easily compare successfully built projects with projects that failed to advance and make their own assessment of ways to address and collaborate with local opposition. The dataset helps organize information that is scattered across different sources, including what benefits were offered, how they were structured, who controlled the spending, how much money was offered, and these factors' relationship to project success or failure.

Our findings and more details about our approach can be found in the accompanying article. We found that developers of successful projects offered approximately the same amount of money to host communities as projects that failed to secure local permits. One pronounced difference was how those benefits were structured. Projects that successfully navigated local opposition and secured local permits more often used a combination of structures to make project value direct, visible, and controllable for communities. Furthermore, successful projects more often offered structures designed to benefit members of the broader community, in addition to hosting landowners and local government.

1.2 Scope

About the scope:

- solar, onshore wind, and battery projects only
- projects over 1 MW in size, with the majority (60%) of the projects in this data set being greater than 100 MW
- projects located in the United States, from 2006 to the present

About the dataset:

- projects with necessity for local approval at the township or county level to proceed
- projects with publicly available financial information about their community benefit commitments
- successful projects (96) secured local approval and have proceeded to at least pre-construction

- canceled projects (101) did not secure local approval and have a known date of cancellation from local opposition (other non-public factors could contribute to failure too, but all failed projects could not advance at least partly due to local opposition)

We made an intentional choice to exclude estimates on economic development and job impacts to focus on clear and confirmed financial benefits for the community, instead of promised jobs that could shift in the future based on local hiring availability. We conducted our data collection and research from January 2026 to June 2026.

Composition of Data Library

	Failed Projects (n=101)	Successful Projects (n=96)
Technology types		
Onshore wind	36	44
Solar	63	51
Battery storage	6	10
(w/ and w/o generation)		
Electricity Market	At least 5 in each electricity market;* largest total MW in PJM, MISO, and SPP	At least 5 in each electricity market;* largest total MW in PJM, MISO, and SPP
States	35 states; largest are OH 12, VA 10, IN 10, NY 8, MI 8	32 states; largest are 11 NY, 10 MA, 8 CA
Year	Earliest canceled in 2011, 93% since 2015, 78% since 2020	Earliest constructed in 2006, 84% since 2015, 50% since 2020
Average size (MW), cost (\$)	197 MW, \$330 M	187 MW, \$345 M
Percentage over 100 MW	62%	64%
Brownfield	None	17 projects from EPA source
Project Developer		
Developer	94 (NextEra Energy 8, Invenergy 5)	85 (Lightsource BP 6, NextEra Energy 6, Apex Clean Energy 5, Invenergy 5)
Investor-Owned Utility	7	11 (AES Corporation 3)

* Excluding ERCOT, Texas has few examples for failed projects that fit our criteria. We did add four examples for successful Texas projects.

1.3 Limitations to scope

Other non-public factors could contribute to failure too, but *all failed projects could not advance at least partly due to local opposition*. These other factors could include interconnection feasibility and other developer internal financial decisions.

1.4 Desired future additions

- Further expand Data Library sample size (such as from S&P and BNEF project databases)
- Examine specific projects as case studies
- Continue examining our initial benchmarks and comparisons across different types of geographies, potentially focusing on critical geographies with a benefits calculator
- Identify potential benefit packages to offer very skeptical communities
- Compare state tax structure requirements for renewables vs. local approval and denial trends

1.5 Contact

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Please contact us to learn more about specific details for our preparation and analysis of the Data Library, and to answer any questions. We can also present this analysis using a Flipbook prepared for different audiences if you are interested in discussing the information in more detail.

2. Data sources

2.1 Sources for development of Data Library

Development of Data Library: failed projects	
Columbia University Sabin Center's 2025 report	https://climate.law.columbia.edu/content/opposition-renewable-energy-facilities-united-states-june-2025-edition
Development of Data Library: successful projects	
Sabin Center 2025 local opposition report: 20 projects	https://climate.law.columbia.edu/content/opposition-renewable-energy-facilities-united-states-june-2025-edition
EPA Benefit Matrix: 17 projects	https://www.epa.gov/re-powering/benefits-matrix
CBA repositories: 14 more projects • Sabin Center and Columbia Climate School: 1 each that weren't already from Sabin Center 2025 report • World Resources Institute: No new projects from other sources, provided more information on existing projects • Clean Air Task Force: No new projects from other sources • Clean Coalition: No new projects from other sources • Georgetown University: 12 more projects. However, we confirmed only 2 of these had additional community funding, no evidence for the other 10 projects so we categorized those as solely providing tax revenue	• https://climate.law.columbia.edu/content/community-benefits-agreements-database • https://cdn.catf.us/wp-content/uploads/2023/11/30172616/community-benefits-agreements-case-studies-federal-guidelines-best-practices.pdf?_gl=1*6nwyny*_gcl_au*MTA3NjE3OTQ3NS4xNzY5NDQ3MzU3*_ga*NjU3Mzc3ODguMTc2OTQ0NzM1Nw..*_ga_88025VJ2M0*cze3Njk0NTY0ODAKbzIkZzAkDE3Njk0NTY0ODAKajYwJGwwJGgw • https://www.wri.org/cbf-database?apcid=0065a83d88d8c2c5bebdf300&utm_campaign=cli-pct-us-community-benef&utm_content=cli-pct-us-community-benef&utm_medium=email&utm_source=ortto • https://www.catf.us/infrastructure-deployment/community-benefits-resource-inventory/ • https://clean-coalition.org/news/finding-the-balance-benchmarking-solar-wind-and-energy-storage-community-benefits-agreements/

	https://docs.google.com/spreadsheets/d/14gyWvXHkPHn8A-HhL_obG11g3uXcbTlX/edit?gid=1106128711#gid=1106128711
DOE Wind Exchange: 23 more projects, 17 of which had large up-front or long-term funding to count as additional community funding, 6 only had small one-time payments during initial community engagement	https://www.energy.gov/cmei/systems/windexchange/local-benefit-mechanisms
Additional internet searches to ensure we included projects from all regions of the United States, 22 more projects	Internet searches and resultant project developer websites

2.2 Sources for additional columns in Data Library

County rural code	https://www.ers.usda.gov/data-products/urban-influence-codes
Market region	https://www.ferc.gov/electric-power-markets
Local control over property taxes for solar projects?	https://drive.google.com/file/d/14snVPpsYPEMenKowC-RAM3Y0F_NDVXXC/view
Avg rate per kWh (¢/kWh) in 2024, Avg annual increase in electricity cost per kWh over 25 years (1999–2024)	https://www.solarreviews.com/blog/average-electricity-cost-increase-per-year
Solar generation growth 2014–2023 (GWh, %), Wind generation growth 2014–2023 (GWh, %)	https://assets.ctfassets.net/cxgvgstp8r5d/5Vty7kLXwx4csHEm4ztU7/a9f69694c2af467387cb3c088f171127/2024WindSolar_Edited.pdf
Project, infrastructure type, infrastructure size (MW), project developer, total project cost (million \$), [community financial benefit columns], [community engagement columns], [project timeline columns]	See “Link to main source of financial information.” Generally, the main source provided information for most of these data queries. However, in our internal Data Library, we have the full set of sources we identified for each project (often ~3–8 more sources) that provide complementary information on the financial benefits and community sentiment; please contact us if you’d like these complementary sources. See below for description of financial benefit-specific columns.

Operational?	https://www.gem.wiki/Main_Page
CPI Index	https://www.bls.gov/news.release/cpi.nr0.htm https://www.minneapolisfed.org/about-us/monetary-policy/inflation-calculator/consumer-price-index-1913-

3. Description of Data Library's financial benefit-specific columns and entry types

Data Entry Columns	Units	Description: includes financial amount and description of actual benefits
	<i>Text with \$ amount, details</i>	<i>Tax Revenue Amount for town or county</i>
	<i>Text with \$ amount, details</i>	<i>Payment-in-Lieu-of-Taxes Amount for town or county</i>
	<i>Text with \$ amount, details</i>	<i>Any Additional Amount in HCA, CBA Agreement (besides PILOT or tax revenue)</i>
	<i>Text with \$ amount, details</i>	<i>Other Financial Amount (like landowner lease payments)</i>
Numerical Columns		Description: \$/MW summed over project lifetime for each type of benefit, or total amount if specified in column name
	<i>\$/MW</i>	<i>Tax Revenue \$ Amount/MW (total \$ over project lifetime/MW)</i>
	<i>\$/MW</i>	<i>PILOT \$ Amount/MW (total \$ over project lifetime/MW)</i>
	<i>\$/MW per year</i>	<i>Additional Amount in Agreement per year (besides PILOT or tax revenue)</i>
	<i>\$/MW</i>	<i>Additional \$ Amount in Agreement/MW (total \$ over project lifetime, besides PILOT or tax revenue/MW)</i>
	<i>\$/MW</i>	<i>Landowner \$/MW (total amount offered to all landowners over project lifetime/MW)</i>
	<i>\$</i>	<i>Total Amount for All Community Benefits (million \$)</i>

	<i>\$/MW</i>	<i>Total \$ Community Benefit/MW (total \$ amount over project lifetime/MW)</i>
Live Calculations Columns		
	<i>\$/MW In 2026 dollars</i>	<i>For Successful Projects: Total \$ Community Benefit/MW in 2026 dollars (use construction year as reference)</i>
	<i>\$/MW In 2026 dollars</i>	<i>For Failed Projects: Total \$ Community Benefit/MW in 2026 dollars (use cancellation year as reference)</i>

Note: We only present the Total \$ Community Benefit/MW in 2026 dollars for each project, all other numerical columns for the different financial benefit structures are in nominal dollars. This is to prevent the Data Library from feeling confusing and conflicting if it had nominal and real dollars for each of the many financial benefit structures and their descriptions. However, we separately calculated the real dollars for all financial benefits, and all values presented in the accompanying article are in 2026 dollars.

4. Approach for development of Data Library

4.1 Approach for development of Data Library: failed projects

Start with [Columbia University Sabin Center's 2025 report](#) of clean energy projects that faced local opposition. Research each one of the 498 contested projects in their report to determine if the project:

1. Was truly canceled, or merely delayed and eventually built	• Checked local and regional news articles and sources like Global Energy Monitor's GemWiki. Only included canceled projects
2. Has public financial information on benefits like tax revenue, landowner payments, and additional funding for community priorities	• Identified from developer's project website, local or regional news articles, or local or state websites
3. Was canceled (at least partly) due to failure to secure local approval to proceed	• Determined this criteria using context in each project's description in the Sabin Center report, plus developer statements in local or regional news articles • Other non-public factors could have also contributed to project failure, but all failed projects could not proceed at least partly due to local opposition • Omitted any project approved solely by state- or federal-level, regardless of local opposition
Finally, for each failed project, we performed a comprehensive search with keywords to identify any last public info on financial benefits, then use Google AI search to doublecheck all information was captured	

4.2 Approach for development of Data Library: successful projects

Unfortunately, no single parallel repository for successful projects exists. Instead, we created an approach to align with the count and composition of failed projects' database with regards to technology, size, and geography. We used the same criteria for technology type, utility-scale, local approval requirement, and public financial info.

1. Added delayed but eventually built projects from <u>Sabin Center local opposition report</u>	• Checked local and regional news articles and sources like <u>Global Energy Monitor's GemWiki</u> • Many successful projects still faced local opposition but were able to address it
2. Added brownfield projects from <u>EPA's Benefit Matrix repository of successful projects</u>	• Project types included small landfill solar projects and large wind and solar projects
3. Added from academic and nonprofit repositories of projects that had <u>Community Benefits Agreements (CBAs)</u>	• <u>Sabin Center</u> and <u>Columbia Climate School</u>, <u>World Resources Institute</u>, <u>Clean Air Task Force</u>, <u>Clean Coalition</u>, <u>Georgetown University</u> • Useful grouped successful project sources, much overlap • Sampled from many other sources to avoid bias toward successful projects with CBAs
4. Added more projects to help align with count and composition of failed projects' database	• More onshore wind projects from <u>DOE WindExchange</u>. • Additional internet searches to ensure we included projects from all US regions, still needed to meet criteria
Also performed comprehensive search and Google AI search for each successful project to capture all info	

5. Supporting tables for Article

The following tables demonstrate two separate ways of examining the projects in the Data Library. The first table shows the results from studying each project and categorizing it into only one of four mutually exclusive categories. For example, did a given project only offer tax revenue to the host community, or a combination of tax revenue and one additional funding structure meant for the broader community? Since these are four mutually exclusive categories, the sum of the project counts is the total for each half (failed or successful) of the data set. Now, we can better compare how often project developers offered a single benefit structure vs. combinations, and which kinds. For this first table, we did not consider landowner payments as a separate option, since the industry commonly includes these in projects, regardless of category.

The second table shows the results from studying each benefit structure and determining the total number of projects which used that benefit structure. For example, how common were PILOTs versus traditional tax revenue across all failed projects? What about compared with successful projects? Now, we can better compare the overall presence of different benefit structures in the data set, related to project outcomes. Furthermore, we can start establishing \$/megawatt (MW) benchmarks for individual benefit structures; please see the note under the second table for more details. Further increasing the sample size in future research can help confirm these \$/MW estimates.

These are two ways to examine and use the new Data Library, and we invite users to consider other ways they could pursue different research questions and build on this work.

Failed projects often only offered tax revenue, whereas successful projects offered combinations of benefits with additional funding and/or payments in lieu of taxes more often.

	Failed Projects (n=101)	Successful Projects (n=96)
Only tax revenue		
Number of projects:	66	40
% of total projects:	65%	42%

Tax revenue and one additional funding (HCAs, CBAs, direct payments)		
Number of projects:	20	32
% of total projects:	20%	33%
Only payments-in-lieu-of-taxes (PILOT)		
Number of projects:	11	15
% of total projects:	11%	16%
PILOT and one additional funding, (HCAs, CBAs, direct payments)		
Number of projects:	4	9
% of total projects:	4%	9%

We categorized each project into only one of these four mutually exclusive categories. Landowner payments are fairly common in all these categories.

Examining each benefit structure independently in the dataset, we start to establish potential \$/MW industry benchmarks. The relative similarity in magnitude between successful and failed projects could indicate project developers' typical budget strategies, while the structure frequencies underscore the opportunity for more direct, visible, and controllable structures.

	Failed Projects (n=101)	Successful Projects (n=96)
Landowner and neighbor payments		
Number of projects:	75	61
% of total projects:	74%	64%
Average value offered (\$/MW):	\$236,400	\$205,400
Tax revenue		

Number of projects:	86	72
% of total projects:	85%	75%
Average value offered (\$/MW):	\$217,700	\$195,700
Payments-in-lieu-of-taxes (PILOT)		
Number of projects:	15	24
% of total projects:	15%	25%
Average value offered (\$/MW):	\$245,600	\$229,900
Additional funding to broader community, like in HCAs, CBAs, direct payments		
Number of projects:	24	41
% of total projects:	24%	43%
Average value offered (\$/MW):	\$51,900	\$53,100
Average value offered (\$/MW per year):	\$2,000	\$2,100

For each project with the respective financial benefit, we summed the benefit total over the project lifetime, then standardized across this subset on a \$/MW comparison in 2026 dollars. The table shows the average \$/MW offered for that benefit for projects with known values.

6. Further description of our methodology

Please contact us to learn more about specific details for our preparation and analysis of the Data Library. See below for topics we would be happy to share more details on:

- How we distinguished between payments that counted as "additional community funding" versus smaller payments we categorized only as limited money for community engagement

- Our calculations for \$/MW averages for each type of benefit structure in 2026 dollars in the article, and creation of the box-and-whisker plot in the article
- State tax structures for renewable projects and initial analysis on their relationship with local project approval or denial
- Further clarification on assumptions and decision-making with financial benefit analysis
- Initial ideas for regulators and legislators to create enabling structures at the state-level that could support project approval and benefit local constituents