



Memorandum

Date: May 17, 2022

To: Toby Valentino, Assistant Development Manager, Ranger Power

From: Andrew Miller, Consultant

Re: Property tax impact of utility-scale solar development

Cc: Tyler Theile, Vice President & Director, Public Policy

Purpose

Ranger Power is a utility-scale energy developer that owns and operates renewable generation systems across the United States. Ranger Power plans to develop a utility-scale solar project in Hillsdale County, Michigan. Ranger Power retained Anderson Economic Group to determine the property tax impact the project will have on local taxing jurisdictions, including Hillsdale County, Allen Township, Fayette Township, Scipio Township, local schools, fire services, and others.

Project Overview

Ranger Power plans to construct a 150 megawatt solar project near Jonesville in Hillsdale County. The project, known as the Heartwood project, will be built on approximately 900 acres of land. Heartwood will consist of bifacial photovoltaic arrays mounted to single-axis trackers and several inverter stations to convert the electricity generated from DC to AC power. The project will be completely enclosed by a woven-wire fence with wooden posts in keeping with the rural and agricultural nature of the community, and will utilize compacted soil internal access roads. It will also feature vegetative landscaping in compliance with local ordinances. Construction is expected to begin in the second half of 2023 and cost approximately \$150 million. Upon completion (by late 2024) the project will generate increased property tax revenues for local taxing jurisdictions.

Findings

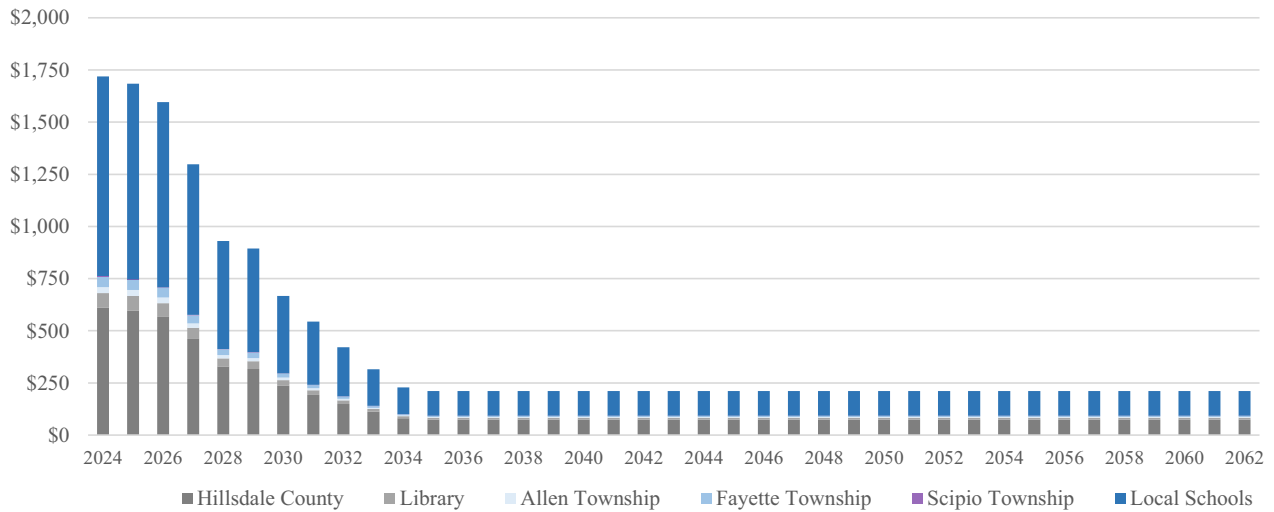
Our analysis shows that the Heartwood project will generate \$15.0 million in personal property tax revenues over the next 25 years, and \$16.4 million in personal property tax revenues over the next 40 years.

Once built, the Heartwood project will generate approximately \$15.0 million in personal property tax revenue over the next 25 years, and an additional \$1.4 million over the following 15 years for a

total of \$16.4 million in personal property tax revenue over the next 40 years. The project will result in increased personal property tax revenue for several local taxing jurisdictions. These include Hillsdale County, along with Allen, Fayette, and Scipio Townships. Also included are Jonesville Community Schools, Hillsdale Intermediate School District, and the Jonesville District Library.

Below, we show the projected annual personal property tax revenues for each taxing jurisdiction by year in Figure 1. See Table 1 on page 6 for a detailed summary of personal property tax revenues for each taxing jurisdiction by year.

Figure 1. Heartwood Project Annual Personal Property Tax Revenues by Taxing Jurisdictions, 2024-2063 (Thousands)



Source: Anderson Economic Group analysis using data from Ranger Power, Hillsdale County, and the State of Michigan
 Note: Hillsdale County includes county operations and health & senior services;
 Allen, Fayette, and Scipio Townships include township operations, local roads, and fire services;
 Local schools include Jonesville Community schools and Hillsdale Intermediate School District (ISD).

About Anderson Economic Group

Founded in 1996, Anderson Economic Group is a boutique research and consulting firm, with offices in East Lansing, Michigan, and Chicago, Illinois. The experts at AEG have particular expertise in conducting economic and fiscal impact studies, having worked for a wide range of clients. These clients include public and private utilities, wind and solar developers, state and local governments, nonprofit organizations, and corporations across the United States. A few of the relevant publications from our firm include:

- Economic and Fiscal Impact of an Offshore Wind Development, 2020.
- Economic and Fiscal Impact of Solar Developments in Three Michigan Counties, 2019.
- Economic and Fiscal Impact of St. Clair Power Plant in St. Clair County, Michigan, 2017.
- Economic and Fiscal Impact of Proposed Gas-Powered Plan in Niles, Michigan, 2017.
- Economic and Fiscal Impact of Proposed Wind Development in Tuscola County, Michigan, 2016.

For more information about Anderson Economic Group, please visit AndersonEconomicGroup.com.

About the Authors

Andrew Miller. Mr. Andrew Miller is a consultant in the public policy and economic analysis practice area at Anderson Economic Group. His work focuses on economic and fiscal impact analysis. Recent projects have included economic impact analyses of Fermi National Accelerator Laboratory, a large-scale renewable energy generation facility, and an interactive science learning center. Mr. Miller has also worked on projects involving housing policy, state economic indicators, and infrastructure funding. Mr. Miller holds a Master of Public Policy degree from the University of Chicago Harris School of Public Policy and a Bachelor of Arts degree in history from the University of Chicago.

Tyler Marie Theile. Ms. Tyler Theile is the vice president and COO at Anderson Economic Group. She also serves as director of AEG's public policy and economic analysis project area. Ms. Theile's recent projects include an analyses of power transmission infrastructure projects, economic impact analysis for mixed-use real estate development, valuation for various beer distributors, and an economic impact related to legislation changes. Ms. Theile is a graduate of Michigan State University's James Madison College, where she received a BA in international relations with a specialization in political economy.

Appendix: Methodology

We constructed a custom property tax impact model to determine the impact of the Heartwood project on relevant local entities. The model is based on our review of Michigan property assessment guidelines, and on assessments for other solar projects in the state. Our model projects the total property tax liability for the project's generation equipment (personal property). We describe our model below.

Personal Property Tax

In Michigan, solar generation equipment is considered personal property.¹ To determine the initial taxable value of the personal property associated with the project, we obtained construction cost data from Ranger Power and determined the property's initial taxable value. Based on our review of Michigan Department of Treasury guidance, we determined that the personal property associated with the Heartwood project would be classified entirely as industrial personal property.²

After determining the initial taxable value of the personal property, we projected the future taxable value of the project's personal property using the appropriate depreciation schedule.³ Because the project will be assessed as industrial personal property, it will be exempt from both local school operating tax and state education tax. We spoke with the City of Watervliet assessor to confirm our assumptions regarding assessment of personal property for the Heartwood project.

Property Tax Projection Limitations

The property tax revenue projections presented here are based on current assessment practices in Michigan and precedents set by the assessment of other solar projects in the state. The projections herein do not constitute tax advice, and are subject to limitations that include:

- Solar power is a nascent industry in Michigan, with many of the state's utility-scale projects coming online in the last five to ten years. The projections in this memorandum extend for 40 years—a length of time far exceeding the existence of any utility-scale solar project in Michigan.
- At some point over the next 40 years, it is possible that the State of Michigan will issue new guidance on how solar projects should be assessed. Our projections do not speculate on future regulatory changes or their impact on future property tax revenues.
- Our model assumes no increase in local taxing jurisdiction millage rates over the next 40 years. Our projections may differ from actual property tax revenues if local taxing jurisdictions raise their tax rates, or if Ranger Power builds additional capacity or brings new equipment onto the site at a later date.

1. See Michigan Department of Treasury memorandum, "Guidance Regarding Valuation and Assessment of Photovoltaic (Solar) Electric Generation Systems," April 5, 2022, www.michigan.gov.

2. Ibid.

3. See Michigan Department of Treasury Form 5762, "2022 Solar Energy System Report (as of 12-31-2021)," www.michigan.gov.

Sources Consulted

- Project construction costs from Ranger Power.
- Annual millage rates in Allen, Fayette, and Scipio Townships from Hillsdale County.
- Michigan Department of Treasury Form 5762, “2022 Solar Energy System Report (as of 12-31-2021),” www.michigan.gov/documents/treasury/5762_draft_10-07-21_002_738242_7.pdf.
- Michigan Department of Treasury memorandum, “Guidance Regarding Valuation and Assessment of Photovoltaic (Solar) Electric Generation Systems,” April 5, 2022, www.michigan.gov/documents/treasury/Updated_Guidance_Regarding_Valuation_Assessment_of_Solar_Electric_Generation_Systems_750801_7.pdf.
- Michigan State Tax Commission, “State Tax Commission Guide to Basic Assessing,” 2018, www.michigan.gov/documents/treasury/Guide_to_Basic_Assessing_1-16_511508_7.pdf

Table 1. Heartwood Project Personal Property Tax Revenue by Taxing Jurisdiction and Year

	County			Authorities	Allen Township			Fayette Township	Scipio Township	Local Schools		Personal Property Tax Impact
	Hillsdale County	Health & Senior Services	Other	Library	Allen Township	Fire	Roads	Fayette Township	Scipio Township	School Debt	ISD	
2024	\$366,593	\$184,740	\$70,658	\$72,285	\$10,066	\$13,178	\$6,573	\$50,756	\$3,255	\$622,500	\$353,445	\$1,754,048
2025	\$359,261	\$181,045	\$69,244	\$70,839	\$9,865	\$12,914	\$6,442	\$49,741	\$3,190	\$610,050	\$346,376	\$1,718,967
2026	\$351,929	\$177,350	\$67,831	\$69,394	\$9,663	\$12,651	\$6,310	\$48,726	\$3,125	\$597,600	\$339,307	\$1,683,886
2027	\$333,599	\$168,113	\$64,298	\$65,779	\$9,160	\$11,992	\$5,982	\$46,188	\$2,962	\$566,475	\$321,635	\$1,596,183
2028	\$271,278	\$136,708	\$52,287	\$53,491	\$7,449	\$9,752	\$4,864	\$37,559	\$2,409	\$460,650	\$261,549	\$1,297,995
2029	\$194,294	\$97,912	\$37,448	\$38,311	\$5,335	\$6,984	\$3,484	\$26,901	\$1,725	\$329,925	\$187,326	\$929,645
2030	\$186,962	\$94,217	\$36,035	\$36,865	\$5,134	\$6,721	\$3,352	\$25,885	\$1,660	\$317,475	\$180,257	\$894,564
2031	\$139,305	\$70,201	\$26,850	\$27,468	\$3,825	\$5,008	\$2,498	\$19,287	\$1,237	\$236,550	\$134,309	\$666,538
2032	\$113,644	\$57,269	\$21,904	\$22,408	\$3,120	\$4,085	\$2,038	\$15,734	\$1,009	\$192,975	\$109,568	\$543,755
2033	\$87,982	\$44,338	\$16,958	\$17,348	\$2,416	\$3,163	\$1,578	\$12,181	\$781	\$149,400	\$84,827	\$420,971
2034	\$65,987	\$33,253	\$12,718	\$13,011	\$1,812	\$2,372	\$1,183	\$9,136	\$586	\$112,050	\$63,620	\$315,729
2035	\$47,657	\$24,016	\$9,185	\$9,397	\$1,309	\$1,713	\$855	\$6,598	\$423	\$80,925	\$45,948	\$228,026
2036	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2037	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2038	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2039	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2040	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2041	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2042	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2043	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2044	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2045	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2046	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2047	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2048	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2049	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2050	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2051	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2052	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2053	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2054	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2055	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2056	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2057	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2058	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2059	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2060	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2061	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2062	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2063	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486
2064	\$43,991	\$22,169	\$8,479	\$8,674	\$1,208	\$1,581	\$789	\$6,091	\$391	\$74,700	\$42,413	\$210,486

Source: Anderson Economic Group analysis using data from Ranger Power, Hillsdale County, and the State of Michigan

Note: Assumes future tax rates are constant