

To: Ohio Power Siting Board Panel

From: Dominic Straquadine

Re: Marion County Solar Project, LLC (Case Number: 21-36-EL-BGN)

Date: 9/23/2021

Presentation of Credentials

A recent graduate of George Mason University (GMU) with a bachelor's degree in Environmental & Sustainability Studies, with a concentration in Environmental Policy & Politics, Dominic Straquadine has proven to be an achiever in academic settings. Dominic has also been named to the Dean's List of the College of Humanities and Social Sciences at GMU.

Possessing close ties to Marion, Dominic graduated from Ridgedale High School. He has worked with Ridgedale and a policy conference chapter at the school to teach concepts relating to government, research, and others. Also, he has worked with Marion County Recycling & Litter Prevention on many community projects that increased awareness of environmental and waste reduction concepts.

A passionate individual, Dominic has been actively involved in community environmental efforts, including the push to keep recycling in Marion, volunteering and organizing with numerous organizations like Friends of the Lower Olentangy Watershed and the Potomac Conservancy.

Introduction

Marion County Solar, LLC is working to develop a solar energy project in Marion County, Ohio. The following will be a review and analysis of data reported in the application to the Ohio Power Siting Board (OPSB) from the applicant. Additionally, the reported data will be compared against industry standards and academic review to verify the scope and depth of the document.

Given the information made available at the time of writing this document, it is the opinion of the author of this document that the project be approved on the condition that further outreach is done and improvements to project design are made.

As populations increase, so do power generation demands (Energy Information Administration, 2020). With solar energy technology becoming more efficient, along with price reductions of solar products, and the lessening viability of fossil fuel-based power generation, solar energy is becoming competitive, and its impacts are vast.

Environmental Impacts of Solar Energy Production

Mostly, solar energy comes with very little environmental concern when operational. However, there are things to note during other parts of a solar panel's life. Overall, this project is depicted as a low-emissions way of power generation and works to reduce the impacts of climate change on communities by not requiring resource-intensive strategies to maintain it.

Fabrication of solar panels: Solar panels and their components are built using small amounts of heavy metals and chemical compounds, such as cadmium (Mahmud, Huda, Farjana, Lang, 2018). To extract these metals requires extensive mining, which can be toxic to water ways and human health (Sierra Club, 2018).

Installation: Most concerns during project development come from clearing of trees and other vegetation, and from being placed close to water ways (van de Ven, Capellan-Perez, Arto, et. al., 2021). As specified in the application and data provided, little to no land will be cleared since the project is sited on an area with mostly developed farmland (Marion County Solar Project, LLC, p. 46, 2019). Additionally, with the project being sited with no threat of damage to waterways, there is no concern for harm to existing water supplies. Further, a number of permits have been acquired, along with plans being drafted to mitigate any potential for harm (Marion County Solar Project, LLC, p. 39-45, 2021).

Operation: No greenhouse gas emissions, damaging water pollution, or other harmful processes are associated with the operation of this project (Marion County Solar Project, LLC, p. 35-45, 2021). There is a need for more information from the project team to understand the planned obsolescence cycle of this technology and the economics associated.

Disposal/Replacement: More infrastructure needs to be in place to accommodate waste from renewable energy projects (Atasu, Duran, Wassenhove, 2021). With the heavy metals and electronic equipment, there is need for cost-effective and environmentally responsible disposal (Union of Concerned Scientists, 2013). It is recommended that the project team should reach out to Marion Co. Recycling and Litter Prevention and the DKMM Solid Waste District for guidance and further support.

Public Health Impacts of Solar Energy Production

Most public health concerns occur only during mining, manufacturing, and decommissioning of the solar panels and related components due to the heavy metals and waste generated (Mahmud, Huda, Farjana, Lang, 2018). This may not become an issue if materials are properly disposed of with accommodating infrastructure.

With multiple permits being acquired and plans drafted, the potential for harm from runoff, erosion, emissions, and other sources have been reduced significantly harm (Marion County Solar Project, LLC, p. 39-45, 2021).

Economic Impacts of Solar Energy Production

Largely, the advent of renewable energy comes as many call for more energy independence and portfolio diversification. Because of the growth within the industry, more jobs have been created to meet the demand (Sekaric, 2016). As Ohio continues to see more projects develop, there are several benefits being monitored (Michaud, Khalaf, Zimmer, Jenkins, 2020). With this project coming to Marion, there are a number of economic considerations to note, including job creation and tax revenues.

Over the last decade alone, there have been several advances in the technology and efficiency of solar panels that have allowed them to reduce in price and become more competitive with conventional means of energy production. Since 2010, for example, the general price for solar technology has fallen by 80% (National Renewable Energy Laboratory, 2021).

The jobs within the solar sector are numerous and span the life cycle of the product. In Ohio, this project will create and involve around 350 jobs, with approximately half of those being in Marion County (Marion County Solar Project, LLC, p. 29, 2021). As a result of these jobs, monies will be paid and spent in Ohio and communities within (Michaud, Khalaf, Zimmer, Jenkins, 2020).

Due to tax abatements for the project, there has been an agreement made that the project will pay the County \$21,000,000 over the course of its life (Marion County Solar Project, LLC, p. 29, 2021). More tax revenue will be paid to area groups, including Ridgedale Local Schools and Marion Township, which will receive \$350,000 per year and \$140,000 per year respectively (Marion County Solar Project, LLC, p. 29, 2021).

Siting of Solar Energy Projects

The location of energy projects coincides with their proximity to transmission lines and energy hubs and the availability of solar resources (Marion County Solar Project, phone conversation, 2021) (Environmental Protection Agency, n.d.).

According to the Solar Energy Industries Association (SEIA) (2019), only a small amount of land would be needed to power much of the U.S. solely on solar energy, thus leading to a sizably smaller project footprint compared to other sources of energy production. While many may raise concerns about renewable energy projects taking over many farm estates, the majority of farmland that is developed for other uses are for urban development projects, considering the expansion of cities and urban areas (Solar Energy Industries Association, 2019). In addition, solar output is continually increasing based on competitive growth within the technology (International Renewable Energy Agency, n.d.).

Another common concern regarding solar energy projects is the visual footprint associated with these large projects (Marion County Solar Project, LLC, p. 82, 2021). The project development team are encouraged to utilize fencing and vegetative screenings to reduce visual impairments while protecting output production (Hooper, 2021).

Additionally, many landowners where the projects are leased may be concerned with the viability of land after the project ends (Jones, 2021). To address this concern, the project team has noted that the land can, indeed, be farmed immediately after decommissioning and disposal

of the site's components (Marion County Solar Project, LLC, p. 78, 2021). However, it is recommended to the development team that nutrient-fixing vegetation be planted to ensure the soil remains rich and viable (Marion County Solar Project, LLC, p. 17, 2021).

Engagement Strategies

With solar energy and other forms of renewable energy gaining ground and more projects are popping up, especially in Ohio, outreach and public support are crucial to their success and survival, considering bills like Senate Bill 52 work to make the voices of communities more able to be heard (Wright, n.d.) (Bryce, 2021) (Jones, 2021).

Projects like these have come to and been developed in Ohio. The negative feelings toward these projects and the companies who develop them are focused on a lack of awareness, understanding of the projects, and their impacts. Dayton Daily News (Wilson, 2019) reports that many people did not know about the projects in Preble County until two weeks before a public hearing.

According to the application listed with the OPSB and conversations with the project development team, multiple efforts have been made to meet with groups, including Marion County Commissioners, Marion Township Trustees, and more (Marion County Solar Project, LLC, p. 30-31, 2021).

It is recommended that more is done to increase awareness and understanding of the project. Such options include church visits, school assemblies, radio and newspaper spots, and neighborhood visits.

Recommendations

- Infrastructure and understanding of waste disposal is needed for solar panel life cycles.
 - It is key to understand the planned obsolescence cycle of this technology and the economics associated.
- Mitigation strategies for visual impairment should be included in final design of the project.
 - Including: fencing and vegetative screening.
- To keep prime farmland viable over the lifespan of the project, an idea is to plant nutrient-fixing vegetation on the site.
- Community outreach framework should be more robust and expansive to allow for community engagement and understanding of concepts and impacts related to the project.

Conclusion

As the renewable energy industry grows, it will grow quickly—and has been. Information changes and brings to light new concepts and more understanding of the needs of the industry. With the presented due diligence of the project development team in assessing potential impacts of the project, data shows that there will be minimal disruption of land and water resources, minimal emissions, and notable economic benefits, this project demonstrates the ability to be a great asset to the County. Therefore, the author of this document recommends the approval of this solar energy project.

Should the project team and landowners work to develop more mitigation strategies to improve the integrity of this project, those strategies will work strengthen the case for more renewable energy projects in Ohio.

As renewable energy projects become more prevalent, Marion can chart a path forward and be a mark of the future for the area. To ensure the reputation and success of this project and others, Savion must remain committed to the values of honesty, openness, and transparency, and work to connect with and understand the community.

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