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AGRICULTURAL SOLAR ELECTRIC INVESTMENT ANALYSIS BULLETIN SERIES

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Photovoltaic (PV) panels are an increasingly common sight on urban rooftops and rural properties across the U.S. The declining cost of equipment and installation makes installing a behind-the-electric-meter (net metered) solar electric system enticing for many homeowners, businesses, non-profits, and agricultural producers. Evaluating the financial prudence of an investment in solar requires careful consideration of installation costs, the value of production, and operation and maintenance costs.

Unfortunately, some installers are not forthcoming with information necessary to make fully informed investment decisions. Third-party ownership structures, such as leases, further increase the challenge of understanding the viability of an investment. This six-part series distills the information collection and decision process into six parts:

Part 1: Estimating System Production – Learn how site-specific factors such as shading, orientation, tilt, temperature, and panel degradation can influence the amount of electricity produced by a PV solar system.

Part 2: Assessing System Cost – Grasp a better understanding of direct system costs, indirect capital costs, operations and maintenance, and standard assumptions that provide a more accurate financial analysis, fostering informed investment decisions.

Part 3: Forecasting the Value of Electricity – Not all electrons are created equal. To calculate energy savings for a project, one must consider important variables, including the details of the individual rate structure, net

metering agreements, and the assumed energy escalation rate that influence the value of electricity a PV system produces.

Part 4: Understanding Incentives – Despite declining costs for PV solar, there are various federal, state, and local incentives which greatly affect the financial viability of a PV installation.

Part 5: Conducting a Financial Analysis – Understanding the solar resource production, system cost, value of electricity, and available incentives enables a robust financial analysis. Accurately evaluating the viability of a solar project requires understanding financial concepts such as simple payback, net present value, and the levelized cost of energy.

Part 6: PV Solar Example – The importance of accurate evaluation is clear when applied to a hypothetical project. Using the National Renewable Energy Laboratory developed the System Advisory Model (SAM) you will learn how to estimate the system production and financial impacts of renewable energy projects.

Bulletin series available for download at: go.osu.edu/farmenergy