

On behalf of the Morris County Improvement Authority (the Authority) Matrix New World Engineering Inc., (Matrix) performed a technical review of proposals [REDACTED] to evaluate and rank the viability of each Series 2011 unbuilt site photovoltaic (PV) project.

Our limited analysis included an overall proposal comparison illustrated below.

Vendor	Total PV System Size	Cost
[REDACTED]		

In summary, [REDACTED]

**2011 Series Unbuilt Site Evaluation and Ranking**

To evaluate and rank the viability of each proposed PV project, Matrix calculated each PV project’s lifetime energy production, energy retail value (annually for a 30-year expected useful life) and revenue generated from liquidation of Solar Renewable Energy Certificates (SRECs). The SREC revenue was estimated based on each PV system’s proposed generation and an assumed value of \$100 / SREC.

The costs to install PV systems and the total electric generation have an economic interdependence. Low installation costs and high electric generation creates the best economic performance. The relationship between performance and cost can be easily illustrated using a simple payback review. Matrix prepared a simple payback review to illustrate each proposed PV project’s basic ability to generate revenue in excess of the costs.

Figure 2 below illustrates general guidance to evaluate each project’s viability.

High	Simple payback ≤ 10 Years
Moderate	Simple payback 11-12 Years
Borderline	Simple payback 13-14 Years

*Figure 2*

Since these findings are preliminary and based on third party proposals only, it is appropriate to expect the proposed PV systems to change slightly in their viability and ranking after the necessary engineering due diligence has been completed.

**Findings**

Our findings indicate all of the proposed PV systems have an expected useful life of 30 years and have a simple payback of less than 15 years. Figure 3 illustrates our preliminary findings of viability and rank by Series 2011 Unbuilt Site.

Series 2011 Unbuilt Site	Expected Project Viability Ranking
Chatham High	High
Benedict Cuncinella School	High
Long Valley Middle School	High
Morris OTA	High
Sandshore Elementary	High
Tinc School	High
Randolph DPW	Moderate
Chester Municipal	Moderate
Hanover Municipal	Moderate
Morris County Vo-Tech	Moderate
Troy Hills Library - 1	Moderate
Montville Township Library	Borderline
Senior Center	Borderline

*Figure 3*

Based on our review of the information available we have determined 6 of the proposed PV projects are highly viable, 5 of the proposed projects are moderately viable and 2 of the proposed projects are borderline viable/not viable.

**Recommendation**

Matrix recommends the Authority proceed with the next phase of necessary engineering due diligence to determine the overall accuracy of each proposal and to confirm and document the constructability of all of the Series 2011 Unbuilt Sites. Further, Matrix suggests the Authority officiate a detailed economic evaluation of the utility, SREC and construction markets to adequately estimate total projects costs and benefits.

**PROJECT BULLETIN 2**  
**JULY 7, 2015**  
**PRELIMINARY EVALUATION OF VENDOR PROPOSALS FOR**  
**SERIES 2011 UNBUILT SITE EVALUATION**



Based on the information available, Matrix developed a preliminary schedule and timeline summary to illustrate the anticipated timing of key tasks and deadlines.

