

Renewable Energy

Contractors to meet the requirements of VA Sustainable Design Manual May 2014

A. Goal

1. Per VA requirements, the goal is to install onsite renewable electrical energy technology sufficient for providing a minimum of 10% of project's expected annual electricity consumption; in this case, by the photovoltaic system. The estimated annual electricity usage of the building has been calculated at 2,184,000 KWHR. Based on this estimate, the photovoltaic system will have to produce minimum of 2,184 KWHR of electricity to meet this requirement.
2. It is recommended that photovoltaic panels be located on parking lot installed on structure.

B. Photovoltaic System

1. Since solar panels, both photovoltaic and solar thermal, are dependent on direct sun for performance, one must ensure that they receive the maximum amount of sun on a daily basis throughout the year.
2. The inverter(s) shall be grid tied string style. Micro inverters are not acceptable. They shall have a minimum 15 year warranty.
3. The solar panel shall be either monocrystalline or polycrystalline, thin film is not acceptable. The panels shall be manufactured in the US, be high efficiency and have a 25 year warranty.
4. Identify orientation of proposed array location.
5. Identify inclination of proposed array location.
6. Calculate system output with a proven calculator such as PV Watts or one provided by the panel and/or inverter manufacturer.
7. Provide output metering and monitoring of the system operation that can be monitored via an internet page.
8. Install conduit for the DC wire run from the array to designated inverter location.
9. Install conduits from the AC wire run from the designated inverter location to the electric service panel.
10. Install circuit breakers for use by PV system in the electrical service panel.
11. Provide structures over parking lot to support PV panels.