## [Date]

[Recipient Name]

[County, Title]

[Address line 1]

[Address line 2]

Re: Regional Permitting and Inspections Process for Solar PV

## Dear \_\_\_:

As consumer demand for solar power continues to grow at an increasing pace in Washington, DC, Maryland and Virginia, local permitting and inspections processes for solar photovoltaics (PV) will become increasingly important, both to promote the local clean energy economy and to prevent permitting backlog.

Adopting and implementing best practices for solar PV permitting and inspections will ensure that systems are installed and operated safely, reliably and efficiently, and will reduce the paperwork burden for permitting & inspections staff. Several local jurisdictions are already undertaking efforts to implement best practices and streamline the solar permitting process.

The Maryland, DC, Virginia Solar Energy Industries Association (MDV-SEIA) and the Metropolitan Washington Council of Governments (MWCOG) support the consistent application of solar PV permitting and inspection best practices across the region. Regional consistency among the local efforts will further help to reduce the costs currently incurred by homeowners and solar companies in dealing with varying permit and inspection requirements across the municipalities in which they do business.

This effort aims to: (1) help municipalities and states meet their renewable energy and climate change goals by improving conditions for residential solar installations, (2) reduce the cost of solar PV for area residents and businesses, (3) foster regional job growth and economic competitiveness by helping local solar companies expand their businesses, and (4) improve and streamline the process for local permitting and inspections staff.

Attached are MDV-SEIA and MWCOG’s recommendations for municipalities on the permitting and inspection of residential solar PV installations.

Thank you for your consideration,

MDV-SEIA Metropolitan Washington Council of Governments

## Recommendations for Residential Solar PV Systems

Fees

1. Create a flat residential solar PV permit fee based on the actual cost to administer

Permitting

1. Require only one permit application submittal
2. Use a standard permit application form specific to solar PV systems
3. Adopt a permit submittal checklist (see template below)
4. Allow electronic permit application submittal
5. Enable online approval of application form[[1]](#footnote-1)
6. One-day walkthrough for permit review and approval[[2]](#footnote-2)
7. Streamline and expedite process for qualifying projects (see sample process below)

Inspections

1. Offer a specific inspection appointment time or small window
2. Require only one inspection visit
3. Adopt an inspection checklist (see template below)
4. Master electrician is not required to be on site for inspection but on call by phone to answer inspector questions

Website Enhancements

1. Post permit and inspection process information online, including applicable fee schedules
2. Make permit application form available online

These recommendations were developed with assistance from MWCOG’s partners on the US Department of Energy SunShot Initiative Rooftop Solar Challenge II: Optony, Inc., The National Association of Regional Councils, The Mid-America Regional Council, and Meister Consultants Group, Inc.



**Template: Residential Solar PV Permit Checklist**

Required Documents:

* Permit application and fee
* Permit drawings (see “Permit Drawing Checklist” below for details)
* Solar module specification sheet
* Inverter specification sheet
* Number of panels and capacity in kW of the system

Permit Drawing Checklist:

* Legend for symbols, abbreviations and notations used in the drawings
* Site Plan
  + General outline of the property showing boundaries
  + Proposed location of the solar array - roof or ground mount
  + Approximate location of existing electrical service entrance
  + Proposed path for the electrical connection and disconnects between the array and the existing electrical service
  + Proper setbacks from the roof boundaries as required by applicable fire code
* Structural
  + Roof composition or covering
  + Pitch of the roof
  + Roof support structure design (truss, rafter, spacing, webbing, etc.)
  + Proposed spans for roof attachments
  + Racking manufacturer’s minimum guidelines for installation
  + Attachment detail
  + If structural engineer review/stamp required these should be present:
    - Design wind speed
    - Ground snow load
    - Exposure category
    - Seismic design category
    - Lbs./ft2 of all equipment on the roof
    - Lbs. per attachment point
* Electrical (Single line drawing)
  + Interconnection of all system components
  + Fusing (OCPD) that is consistent with system design and anticipated loads
  + The type, size and rating of all proposed conductors
  + Conductor sizing and conduit fill calculations from the roof to the inverter DC disconnect
  + A grounding plan for all components that complies with local and NEC requirements
  + The type and sizing of all proposed disconnects
  + A description of the existing electrical service and its ability to accept additional load from the PV array (NEC “120% rule”)

**Template: Residential Solar PV Inspection Checklist**

Onsite Structural Inspection Process

* Module type and count match approved plans and spec sheets
* Array attachment method to roof structure
* Other AHJ-specific requirements

Onsite Electrical Inspection Process

* Proper wire management
* Proper module and array equipment grounding
* Proper installation and labeling of electrical boxes and conduit
* Conductor ratings and size match approved plans
* Proper installation of DC disconnect
* Proper labeling in accordance with NEC and local requirements
* Inverter specifications match max voltage of system
* OCPD rated to max voltage of system
* OCPD installation in accordance with manufacturer specifications
* OCPD at point of interconnect is adequately sized
* Main AC panel complies with 120% rule for bus bar rating
* Other AHJ-specific requirements

Supporting Material:

1. Interstate Renewable Energy Council (IREC), “[Field Inspection Guidelines for PV Systems (2010)](http://irecusa.org/wp-content/uploads/2010/07/PV-Field-Inspection-Guide-June-2010-F-1.pdf)”
2. Interstate Renewable Energy Council (IREC), “[Model Inspection Checklist for Rooftop PV Systems (2013)](http://www.irecusa.org/wp-content/uploads/2013/09/Model-Inspection-Checklist.pdf)”

**Simplified Permit for Qualifying Systems**

The Solar America Board for Codes and Standards (Solar ABCs) framework is widely regarded as a model for standardized and expedited permitting for qualifying solar PV systems. The U.S. Department of Energy funds Solar ABCs as part of its commitment to facilitate widespread adoption of safe, reliable, and cost-effective solar technologies. The Solar ABCs framework outlines criteria for residential solar PV projects to qualify for a standard, simplified permit process. The framework represents the culmination of work done by code enforcement officials, the Department of Energy, the Florida Solar Energy Center, and industry organizations across the country since 1999. It also provides templates to help ensure that plans submitted with permit applications always contain the same information in the same location for easier review.[[3]](#footnote-3)

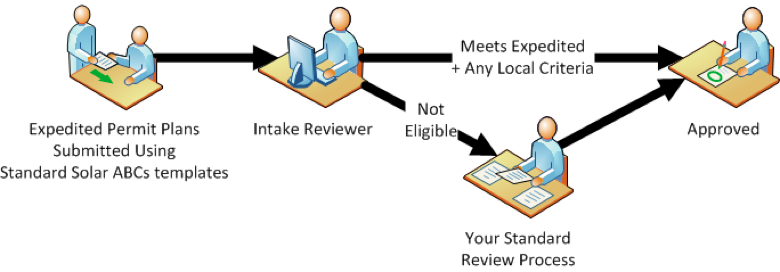
Under the Solar ABCs framework, projects must meet the following criteria:

* Structural Characteristics
  + The PV array is mounted on code-compliant structure
  + An engineered mounting system is used to attach array to structure
  + The PV Array has a distributed weight of less than 5 lbs./ft2 and less than 45lbs./attachment
* Electrical Characteristics
  + The proposed system’s DC nameplate size must be under 10kW
  + All products used are listed and identified for the application (i.e. modules, inverters, source combiners, etc.)

Projects meeting the above criteria would submit a permit package that includes:

* Completed permit application per jurisdiction requirements
* Site diagram showing the relative location of major components and any setbacks from roof boundaries as required by applicable fire and zoning codes
* Proposed standard electrical diagram (using one of several provided templates)
* Specification sheets for major components

Project approval would be expedited after a simple review of the provided materials.



1. For jobs where permit reviewers have concerns that cannot be handled with the applicant by email or phone, specific permit reviews can be moved to a face-to-face interaction to resolve concerns on an as-needed basis. [↑](#footnote-ref-1)
2. When online processing is not available, we recommend a one-day walkthrough permit review and approval process for residential solar PV systems. [↑](#footnote-ref-2)
3. “Expedited Permit Process For PV Systems: A Standardized Process for the Review of Small-Scale PV Systems”, Bill Brooks, P.E., Brooks Engineering, Revision 2, July 2012. Solar America Board for Codes and Standards ([www.solarabcs.org](http://www.solarabcs.org)). pp. 6, 8 [↑](#footnote-ref-3)