Solar Eligibility Checklist for Expedited Photovoltaic Permitting for One- and Two-Family Dwellings

2016 CEC
MICROINVERTER (AND ACM SYSTEMS)

GENERAL REQUIREMENTS

A. System size is 10 kW DC rating or less □ Y □ N
B. System is located in an area with a ground snow load of ___ (≤ 20 pounds). □ Y □ N
C. System is being installed on a legally permitted structure □ Y □ N
D. The solar array if roof-mounted on one or two family dwelling □ or accessory structure □ □ Y □ N
E. Solar system is utility interactive and without battery storage □ Y □ N
F. Permit application is completed and attached □ Y □ N

ELECTRICAL REQUIREMENTS

No more than four photovoltaic module strings are connected to each Maximum Power Point Tracking (MPPT) input where source circuit fusing is included in the inverter □ Y □ N
1) No more than two strings per MPPT input where source circuit fusing is not included □ Y □ N
2) Fuses (if needed) are rated to the series fuse rating of the PV module □ Y □ N
3) No more than one noninverter-integrated DC combiner is utilized per inverter □ Y □ N
A. For central inverter systems: No more than two inverters are utilized □ Y □ N
B. The PV system is interconnected to a single-phase AC service panel of nominal 120/240 Vac with a bus bar rating of 225 A or less □ Y □ N
C. The PV system is connected to the load side of the utility distribution equipment □ Y □ N
D. A Solar PV Standard Plan and supporting documentation is completed and attached □ Y □ N

STRUCTURAL REQUIREMENTS

A. A completed Structural Criteria and supporting documentation is attached (if required) □ Y □ N
(see pages 7 - 11 for information on structural criteria, fill out and sign page 11)

FIRE SAFETY REQUIREMENTS

A. Clear access pathways provided (see last page for worksheet / or attach field copy on back) □ Y □ N
B. Fire classification solar system is provided (UL 1703 for racking & module proposed) □ Y □ N
C. All required markings and labels are provided (guide lines given on sheet 6) □ Y □ N
D. A diagram of the roof layout of all panels, modules, clear access pathways and approximate locations of electrical disconnecting means and roof access points is completed and attached (see last page for worksheet / or attach field copy on back) □ Y □ N

Notes:
1. These criteria are intended for expedited solar permitting process.
2. If any items are checked NO, revise design to fit within Eligibility Checklist, otherwise permit application will go through standard review process.

**FEES UNDER THIS SYSTEM ARE BASED UPON ONE PLAN CHECK REVIEW AND ONE FIELD INSPECTION. ANY ADDITIONAL PLAN REVIEW OR INSPECTIONS WILL BE CHARGED AT BUILDING SERVICES CURRENT TIME AND MATERIAL RATE.**
Solar PV Standard Plan – Simplified Microinverter and ACM Systems for One- and Two-Family Dwellings

SCOPE: Use this plan ONLY for systems using utility-interactive Microinverters or AC Modules (ACM) not exceeding a combined system AC inverter output rating of 10 kW, with a maximum of 3 branch circuits, one PV module per inverter and with PV module ISC maximum of 10-A DC, installed on a roof of a one- or two-family dwelling or accessory structure. The photovoltaic system must interconnect to a single-phase AC service panel of 120/240 Vac with service panel bus bar rating of 225 A or less. This plan is not intended for bipolar systems, hybrid systems or systems that utilize storage batteries, charge controllers or trackers. Systems must be in compliance with current California Building Standards Codes and any local amendments. Other articles of the California Electrical Code (CEC) shall apply as specified in section 690.3.

MANUFACTURER’S SPECIFICATION SHEETS MUST BE PROVIDED for proposed inverters, modules, combiner/junction boxes and racking systems. Installation instructions for bonding and grounding equipment shall be provided. Listed and labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling (CEC 110.3). Equipment intended for use with PV system shall be identified and listed for the application CEC 690.4(D).

Applicant and Site Information

Job Address: _______________________________ Permit #: __________________
Contractor/Engineer Name: _______________________________ License # and Class: __________________
Signature: _______________________________ Date: ______________ Phone Number: ______________

1. General Requirements and System Information

☐ Microinverter
Number of PV modules installed: __________
Number of Microinverters installed: __________

☐ AC Module (ACM)
Number of ACMs installed: __________

Note: Listed Alternating-Current Module (ACM) is defined in CEC 690.2 and installed per CEC 690.6

1.1 Number of Branch Circuits, 1, 2 or 3: __________

1.2 Actual number of Microinverters or ACMs per branch circuit: 1 _______ 2 _______ 3 _______

1.3 Total AC system power rating = (Total Number of Microinverters or ACMs) * (AC inverter power output)
   = __________ Watts

1.4 Lowest expected ambient temperature for this plan -1 to -5 degrees C, using a correction factor of 1.12

1.5 Average ambient high temperature for this plan: = +47°C
   Note: For lower expected ambient or higher average ambient high temperatures, use Comprehensive Standard Plan.
2. Microinverter or ACM Information and Ratings

Microinverters with ungrounded DC inputs shall be installed in accordance with CEC 690.35.

Microinverter or ACM Manufacturer: ____________________________

Model: ____________________________

2.1 Rated (continuous) AC output power: ___________ Watts

2.2 Nominal AC voltage rating: ___________ Volts

2.3 Rated (continuous) AC output current: ___________ Amps

*If installing ACMs, skip [STEPS 2.4]*

2.4 Maximum DC input voltage rating: ___________ Volts (limited to 79 V, otherwise use the Comprehensive Standard Plan)

2.5 Maximum AC output overcurrent protection device (OCPD) ___________ Amps

2.6 Maximum number of Microinverters or ACMs per branch circuit: ___________

3. PV Module Information

*If installing ACMs, skip to [STEP 4]*

PV Module Manufacturer:

Model: ____________________________

Module DC output power under standard test conditions (STC) = ___________ Watts

3.1 Module V_{oc} at STC (from module nameplate): ___________ Volts

3.2 Module I_{sc} at STC (from module nameplate): ___________ Amps

3.3 Adjusted PV Module DC voltage at minimum temperature = [Table 1] ___________ [cannot exceed Step 2.4]

| Table 1. Module V_{oc} at STC Based on Inverter Maximum DC Input Voltage Derived from CEC 690.7 |
|--------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Microinverter Max. DC Input [STEP 2.4] (Volts) | 34    | 37    | 40    | 43    | 46    | 49    | 52    | 55    | 58    | 61    | 64    | 67    | 70    |
| Max. Module VOC @ STC, 1.12 (-1 to -5°C) Correction Factor (Volts) | 30.4  | 33.0  | 35.7  | 38.4  | 41.1  | 43.8  | 46.4  | 49.1  | 51.8  | 54.5  | 57.1  | 59.8  | 62.5  | 65.2  | 67.9  | 70.5  |
4. **Branch Circuit Output Information**

Fill in [Table 3] to describe the branch circuit inverter output conductor and OCPD size. Use [Table 2] for determining the OCPD and Minimum Conductor size.

<table>
<thead>
<tr>
<th>Circuit Current (Amps)</th>
<th>Circuit Power (Watts)</th>
<th>OCPD (Amps)</th>
<th>Minimum Conductor Size (AWG)</th>
<th>Minimum Metal Conduit Size for 6 Current Carrying Conductors</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>2880</td>
<td>15</td>
<td>12</td>
<td>¾”</td>
</tr>
<tr>
<td>16</td>
<td>3840</td>
<td>20</td>
<td>10</td>
<td>¾”</td>
</tr>
<tr>
<td>20</td>
<td>4800</td>
<td>25</td>
<td>8</td>
<td>1”</td>
</tr>
<tr>
<td>24</td>
<td>5760</td>
<td>30</td>
<td>8</td>
<td>1”</td>
</tr>
</tbody>
</table>

*CEC 690.8 and 210.19 (A)(1) Factored in Table 2. Conductors are copper, insulation must be 90°C wet-rated. Table 2 values are based on maximum ambient temperature of 69°C, which includes 22°C adder, exposed to direct sunlight, mounted > 0.5 inches above rooftop, ≤ 6 current carrying conductors (3 circuits) in a circular raceway. Otherwise use Comprehensive Standard Plan.

<table>
<thead>
<tr>
<th>Table 3. PV Array Configuration Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch 1</td>
</tr>
<tr>
<td>Number of Microinverters or ACMs [STEP 1]</td>
</tr>
<tr>
<td>Selected Conductor Size</td>
</tr>
<tr>
<td>Selected Branch and Inverter Output OCPD</td>
</tr>
</tbody>
</table>
5. Solar Load Center (if used)

a. Solar Load Center is to have a bus bar rating not less than 100 Amps. Otherwise use Comprehensive Standard Plan.

5.2 Circuit Power see [STEP 1] = ___________ Watts

5.3 Circuit Current = (Circuit Power) / (AC voltage) = ___________ Amps

<table>
<thead>
<tr>
<th>Circuit Current (Amps)</th>
<th>Circuit Power (Watts)</th>
<th>OCPD (Amps)</th>
<th>Minimum Conductor Size (AWG)</th>
<th>Minimum Metal Conduit Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>5760</td>
<td>30</td>
<td>10</td>
<td>½”</td>
</tr>
<tr>
<td>28</td>
<td>6720</td>
<td>35</td>
<td>8</td>
<td>¾”</td>
</tr>
<tr>
<td>32</td>
<td>7680</td>
<td>40</td>
<td>8</td>
<td>¾”</td>
</tr>
<tr>
<td>36</td>
<td>8640</td>
<td>45</td>
<td>8</td>
<td>¾”</td>
</tr>
<tr>
<td>40</td>
<td>9600</td>
<td>50</td>
<td>8</td>
<td>¾”</td>
</tr>
<tr>
<td>41.6</td>
<td>≤ 10000</td>
<td>60</td>
<td>6</td>
<td>¾”</td>
</tr>
</tbody>
</table>

**CEC 690.8 and 210.19 (A)(1) Factored in Table 4, Conductors are copper, insulation must be 90°C wet-rated. Table 4 values are based on maximum ambient temperature of 47°C (no rooftop temperature adder in this calculation), ≤ 3 current carrying conductors in a circular raceway. Otherwise use Comprehensive Standard Plan.

6. Point of Connection to Utility:

a. Load Side Connection only! Otherwise use the Comprehensive Standard Plan.

b. Is the PV OCPD positioned at the opposite end from input feeder location or main OCPD location?
   - ☐ Yes
   - ☐ No (If No, then use 100% row in Table 5)

6.3 Per 705.12(D)(2): (Combined inverter output OCPD size + Main OCPD size) ≤ [bus bar size x (100% or 120%)]

<table>
<thead>
<tr>
<th>Table 5. Maximum Combined Inverter Output Circuit OCPD (circle column)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus bar Size (Amps)</td>
</tr>
<tr>
<td>Main OCPD (Amps)</td>
</tr>
<tr>
<td>Maximum Combined Inverter OCPD with 120% of bus bar rating (Amps)</td>
</tr>
<tr>
<td>Maximum Combined Inverter OCPD with 100% of bus bar rating (Amps)</td>
</tr>
</tbody>
</table>

†This plan limits the maximum system size to less than 10 kW, therefore the OCPD size is limited to 60 A. Reduction of Main Breaker is not permitted with this plan.
7. Grounding and Bonding

Check one of the boxes for whether system is grounded or ungrounded: □ Grounded    □ Ungrounded

For Microinverters with a grounded DC input, systems must follow the requirements of GEC (CEC 690.47) and EGC (CEC 690.43).

For ACM systems and Microinverters with ungrounded a DC input follow the EGC requirements of (CEC 690.43).

8. Markings

Informational note: ANSI Z535.4 provides guidelines for the design of safety signs and labels for application to products. A phenolic plaque with contrasting colors between the text and background would meet the intent of the code for permanency. No type size is specified, but 20 point (3/8") should be considered the minimum. See

NOTE: CEC 705.10 requires a permanent plaque or directory denoting all electric power sources on or in the premises.
### Table 1. Maximum Horizontal Anchor Spacing

<table>
<thead>
<tr>
<th>Roof Slope</th>
<th>Rafter Spacing</th>
<th>16” o.c.</th>
<th>24” o.c.</th>
<th>32” o.c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photovoltaic Arrays (4 psf max)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat to 6:12</td>
<td>0° to 26°</td>
<td>5'-4&quot;</td>
<td>6'-0&quot;</td>
<td>5'-4&quot;</td>
</tr>
<tr>
<td>7:12 to 12:12</td>
<td>27° to 45°</td>
<td>1'-4&quot;</td>
<td>2'-0&quot; **</td>
<td>2'-8&quot;</td>
</tr>
<tr>
<td>13:12 to 24:12</td>
<td>46° to 63°</td>
<td>1'-4&quot;</td>
<td>2'-0&quot;</td>
<td>2'-8&quot;</td>
</tr>
<tr>
<td>Solar Thermal Arrays (5 psf max)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat to 6:12</td>
<td>0° to 26°</td>
<td>4'-0&quot;</td>
<td>4'-0&quot;</td>
<td>5'-4&quot;</td>
</tr>
<tr>
<td>7:12 to 12:12</td>
<td>27° to 45°</td>
<td>1'-4&quot;</td>
<td>2'-0&quot;</td>
<td>2'-8&quot;</td>
</tr>
<tr>
<td>13:12 to 24:12</td>
<td>46° to 63°</td>
<td>Calc. Req'd</td>
<td>Calc. Req'd</td>
<td>Calc. Req'd</td>
</tr>
</tbody>
</table>

*Solar support component manufacturer’s guidelines may be relied upon to ensure the array above the roof is properly designed, but manufacturer’s guidelines typically do NOT check to ensure that the roof itself can support the concentrated loads from the solar array. Table 1 assumes that the roof complied with the building code in effect at the time of construction, and places limits on anchor horizontal spacing to ensure that a roof structure is not overloaded under either downward loads or wind uplift loads. Note 3 below lists the basic assumptions upon which this table is based.*

**Table 1 Notes:**

1. Anchors are also known as “stand-offs”, “feet”, “mounts” or “points of attachment”. Horizontal anchor spacing is also known as “cross-slope” or “east-west” anchor spacing (see Figure 2).

2. If anchors are staggered from row-to-row going up the roof, the anchor spacing may be twice that shown above, but no greater than 6’-0”.

3. For manufactured plated wood trusses at slopes of flat to 6:12, the horizontal anchor spacing shall not exceed 6’-0” and anchors in adjacent rows shall be staggered.

4. This table is based on the following assumptions:
   - The roof structure conformed to building code requirements at the time it was built.
   - The attached list of criteria are met.
   - Mean roof height is not greater than 40 feet.
   - Roof sheathing is at least 7/16” thick oriented strand board or plywood. 1x skip sheathing is acceptable.
   - If the dwelling is in Wind Exposure B (typical urban, suburban or wooded areas farther than 500 yards from large open fields), no more than one of the following conditions apply:
     - The dwelling is located in a special wind region with design wind speed between 115 and 130 Mph per ASCE 7-10, or
     - The dwelling is located on the top half of a tall hill, provided average slope steeper is less than 15%. (Continue on next page)
- If the dwelling is in Wind Exposure C (within 500 yards of large open fields or grasslands), all of the following conditions apply:
  - Design wind speed is 110 mph or less (not in a Special Wind Region), and
  - The dwelling is not located on the top half of a tall hill.
- The solar array displaces roof live loads (temporary construction loads) that the roof was originally designed to carry.
- The Structural Technical Appendix provides additional information about analysis assumptions.

<table>
<thead>
<tr>
<th>Assumed Vintage</th>
<th>Nominal Size</th>
<th>Actual Size</th>
<th>Non-Tile Roof&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Rafter Spacing</th>
<th>Tile Roof&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>16&quot; o.c.</td>
<td>24&quot; o.c.</td>
<td>32&quot; o.c.</td>
</tr>
<tr>
<td>Post-1960</td>
<td>2x4</td>
<td>1½&quot;x3½&quot;&quot;</td>
<td>9'-10&quot;</td>
<td>8'-0&quot;</td>
<td>6'-6&quot;</td>
</tr>
<tr>
<td></td>
<td>2x6</td>
<td>1½&quot;x5½&quot;&quot;</td>
<td>14'-4&quot;</td>
<td>11'-9&quot;</td>
<td>9'-6&quot;</td>
</tr>
<tr>
<td></td>
<td>2x8</td>
<td>1½&quot;x7¾&quot;&quot;</td>
<td>18'-2&quot;</td>
<td>14'-10&quot;</td>
<td>12'-0&quot;</td>
</tr>
<tr>
<td>Pre-1960</td>
<td>2x4</td>
<td>1¼&quot;x3¾&quot;&quot;</td>
<td>11'-3&quot;</td>
<td>9'-9&quot;</td>
<td>7'-9&quot;</td>
</tr>
<tr>
<td></td>
<td>2x6</td>
<td>1¼&quot;x5¾&quot;&quot;</td>
<td>17'-0&quot;</td>
<td>14'-0&quot;</td>
<td>11'-3&quot;</td>
</tr>
<tr>
<td></td>
<td>2x8</td>
<td>1¼&quot;x7¾&quot;&quot;</td>
<td>22'-3&quot;</td>
<td>18'-0&quot;</td>
<td>14'-6&quot;</td>
</tr>
</tbody>
</table>

Beyond a visual review by the Contractor checking for unusual sagging or deterioration, some CBOs may want additional assurance that the roof structure complies with structural building code requirements. Table 2 is an optional table some CBOs may elect to use to provide additional assurance by requiring a check of existing roof rafter spans, and supports optional criteria 1.B.5 and 1.B.6. For post-1960 construction, these span tables match the rafter span tables found in the 2013 California Building and Residential codes. For pre-1960 construction, the rafter span tables are based on structural calculations with lumber sizes and wood species & grade appropriate for older construction. Note 5 below lists the basic assumptions upon which this table is based.

Table 2 Notes:
1. See Figure 4 for definition of roof rafter maximum horizontal span.
2. “Non-tile Roof “ = asphalt shingle, wood shingle or wood shake, with an assumed roof assembly weight of 10 psf.
3. “Tile Roof “ = clay tile or cement tile, with an assumed roof assembly weight of 20psf
4. Unaltered manufactured plated-wood trusses may be assumed to be code compliant and meet intent of Table 2.
5. This table is based on the following assumptions:
   - Span/deflection ratio is equal to or greater than 180.
   - For post-1960 construction, wood species and grade is Douglas Fir-Larch No. 2.
   - For pre-1960 construction, wood species and grade is Douglas Fir-Larch No. 1.
   - Other wood species and/or grade are also acceptable if allowable bending stress is equal or greater to that listed above.
Figure 1. Roof Visual Structural Review (Contractor's Site Audit) of Existing Conditions.

The site auditor should verify the following:

1. No visually apparent disallowed rafter holes, notches and truss modifications as shown above.
2. No visually apparent structural decay or un-repaired fire damage.
3. Roof sag, measured in inches, is not more than the rafter or ridge beam length in feet divided by 20.

Rafters that fail the above criteria should not be used to support solar arrays unless they are first strengthened.

Figure 4. Definition of Rafter Horizontal Span.
Figure 2. Sample Solar Panel Array and Anchor Layout Diagram (Roof Plan).

Figure 3. Typical Anchor with Lag Screw Attachment.
STRUCTURAL CRITERIA FOR RESIDENTIAL FLUSH-MOUNTED SOLAR ARRAYS

1. ROOF CHECKS
   A. Visual Review/Contractor’s Site Audit of Existing Conditions:
      1) Is the roof a single roof without a reroof overlay? □ Y □ N
      2) Does the roof structure appear structurally sound, without signs of alterations
         or significant structural deterioration or sagging, as illustrated in Figure 1? □ Y □ N
   B. Roof Structure Data:
      1) Measured roof slope (e.g. 6:12): __________ :12
      2) Measured rafter spacing (center-to-center): __________ inch
      3) Type of roof framing (rafter or manufactured truss): □ Rafter □ Truss

2. SOLAR ARRAY CHECKS
   A. Flush-mounted Solar Array:
      1) Is the plane of the modules (panels) parallel to the plane of the roof? □ Y □ N
      2) Is there a 2” to 10” gap between underside of module and the roof surface? □ Y □ N
      3) Modules do not overhang any roof edges (ridges, hops, gable ends, eaves)? □ Y □ N
   B. Do the modules plus support components weigh no more than:
      4 psf for photovoltaic arrays or 5 psf for solar thermal arrays? □ Y □ N
   C. Does the array cover no more than half of the total roof area (all roof planes)? □ Y □ N
   D. Are solar support component manufacturer’s project-specific completed worksheets,
      tables with relevant cells circled, or web-based calculator results attached? □ Y □ N
   E. Is a roof plan of the module and anchor layout attached? (see Figure 2) □ Y □ N
   F. Downward Load Check (Anchor Layout Check):
      1) Proposed anchor horizontal spacing (see Figure 2): ___’ - ___” ft-in
      2) Horizontal anchor spacing per Table 1: ___’ - ___” ft-in
      3) Is proposed anchor horizontal spacing less than Table 1 spacing? □ Y □ N
   G. Wind Uplift Check (Anchor Fastener Check):
      1) Anchor fastener data (see Figure 3):
         a. Diameter of lag screw, hanger bolt or self-drilling screw: ___ inch
         b. Embedment depth of rafter: ___ inch
         c. Number of screws per anchor (typically one): ___
         d. Are 5/16” diameter lag screws with 2.5” embedment into the rafter
            used, OR does the anchor fastener meet the manufacturer’s guidelines? □ Y □ N

3. SUMMARY
   A. All items above are checked YES. No additional calculations are required.
   B. One or more items are checked NO. Attach project-specific drawings and calculations stamped and signed by a California-licensed Civil or Structural Engineer.

Job Address: ________________________ Permit #: ________________________
Contractor/Installer: ________________________ License # & Class: ________________________
Signature: ________________________ Date: _____________ Phone #: ________________________
### Equipment Schedule

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description: (Provide model if provided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Main Electrical Service Panel</td>
</tr>
<tr>
<td>6</td>
<td>Utility External Disconnect Switch Yes / No:</td>
</tr>
<tr>
<td>5</td>
<td>Performative Meter Yes / No:</td>
</tr>
<tr>
<td>4</td>
<td>Solar Load Center Yes / No:</td>
</tr>
<tr>
<td>3</td>
<td>Junction Box (es):</td>
</tr>
<tr>
<td>2</td>
<td>Microinverter (Y/n) (AC/DC):</td>
</tr>
<tr>
<td>1</td>
<td>Solar Panel Module or AC/DC:</td>
</tr>
</tbody>
</table>

### Single-Line Diagram for Microinverters or ACMS

- Check a box for dc system grounding: □ Grounded □ Ungrounded
- Refer to NEC 690.120 for EGC installation & Table 250.122 for sizing
- For grounded dc power systems, EGC & EGC are required
- For ungrounded dc power systems, EGC is required
- When Required: DC EGC:

### Central/String Inverter Systems for One- and Two-Family Dwellings

Solar PV Standard Plan — Simplified

### Conductor, Cable, and Conduit Schedule

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description: (Provide model if provided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>EGC (when required):</td>
</tr>
<tr>
<td>3</td>
<td>EGC:</td>
</tr>
<tr>
<td>2</td>
<td>Current-Carrying Conductors:</td>
</tr>
<tr>
<td>1</td>
<td>(for each branch circuit)</td>
</tr>
<tr>
<td>0</td>
<td>EGC (when required):</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description: (Provide model if provided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>EGC:</td>
</tr>
<tr>
<td>3</td>
<td>Current-Carrying Conductors:</td>
</tr>
<tr>
<td>2</td>
<td>(for each branch circuit)</td>
</tr>
<tr>
<td>1</td>
<td>EGC (when required):</td>
</tr>
</tbody>
</table>

### Single-Line Diagram

- Main Service Panel OCPD (Table 5)
- Combined Inverter OCPD (Table 4)
- Branch 1 OCPD size (Table 5)
- Branch 2 OCPD size (Table 5)
- Branch 3 OCPD size (Table 5)
- Solar Load Center
- DC Circuit OCPS
- PV AC

### Single-Line Diagram

- Consult with your local ARJ and/or utility
- Refer to NEC 250.120 for EGC installation & Table 250.122 for sizing
- For grounded dc power systems, EGC & EGC are required
- For ungrounded dc power systems, EGC is required
- When Required: DC EGC: