

**DEQ SOLAR ENERGY  
REGULATORY ADVISORY PANEL  
(SOLAR RAP)**

**FINAL MEETING NOTES  
RAP MEETING – TUESDAY, NOVEMBER 9, 2010  
DEQ PIEDMONT REGIONAL OFFICE CONFERENCE ROOM**

**Meeting Attendees**

<i>RAP Members</i>	<i>Interested Public</i>	<i>DEQ Staff</i>
Emil Avram - Dominion (Alternate)	Tom Fitzgerald - Lockheed Martin	Carol Wampler
Ron Jenkins - DOF	Corey Chamberlain - Dominion	Gary Graham
Ken Jurman - DMME	Sarah Cosby – Dominion (alternate)	
Robert Meyers - Northampton County	Mitch King - Old Mill Power	
Ray Fernald - VA DGIF		
Julie Langan - VA DHR		
Nikki Rovner - TNC		
John Hart - AEC Idom		
John Daniel - Troutman Sanders		
Larry Jackson - APCO		
Scott Sklar - Stella Group		
Richard Good - Solar Services		
Cathy Snyder - Lockheed Martin		

NOTE: The following Solar RAP Members were absent from the meeting: Tom Smith - DCR; Tony Watkinson - VMRC; Larry Land - VACO; Stephen Versen - VDACS; James Golden and Rick Weeks – DEQ; Bob Bisha - Dominion (Alternates Present); Dan Holmes - PEC; Debra Jacobson - GWU; Larry Lombardi - Norfolk; Richard Street - Spotsylvania County

*The meeting convened at 9:35am.*

**1. Welcome.** (Carol Wampler)

Carol Wampler, RAP Leader and Meeting Facilitator, welcomed all of the meeting participants to the meeting and thanked them for all of their hard work. Today's objective is to discuss the 11/8/10 Working Draft of Solar Provisions Only (handout, attachment A), to reach consensus on language where consensus is possible, and to assign non-consensus issues to members for the purpose of proposing alternative language.

**2. RAP Discussion of Draft Overview (handout, attachment B) and Draft Solar PBR Provisions (handout, attachment A).** (Carol Wampler)

a) General Comments:

- Delegation of some options to local governments and communities is covered by the draft PBR language requiring the applicant to obtain local government approval before the application is complete.
- Encouraging individuals to become energy self-sufficient using solar resources is covered

by the lack of requirements for homeowner solar arrays.

- There are basic differences between the Tier 3 desktop studies for wildlife (DGIF) and historic resources (DHR). If a proposed site is not in any of the areas identified in the DGIF desktop review, then the project is approvable without further review by DGIF. Historic Resources' desktop review is different because the surveys (architectural surveys to some degree, but more particularly archeological surveys) are incomplete, and the result may require further review by DHR. It may be that since solar arrays with platform footings do not disturb the ground, the requirement for archeological studies may be dispensed with in those cases.
- Private ownership does not automatically meet the statutory requirement to protect natural resources.

b) Discussion of size categories for PBR Tiers:

- Ground disturbance for large solar arrays correlates more closely with that of smaller wind turbine projects than for larger wind turbine projects.
- KW is hard to correlate with the impact of solar arrays on natural resources because the efficiency of the technology changes quickly, the standards for measuring output vary, and the actual footprint of the project on the land may vary (e.g. rooftop arrays cover as much as 100% of the available area, while commercial land arrays may cover 67% or less of the available area). The disturbance area is more meaningful in terms of impact.
- Self-certification of commercial projects might be used to expedite reviews. The proposed Tier 2 requirements amount to self-certification.
- Nameplate rated capacity is not the project's real output capacity; it is a standardized laboratory-created number that is much higher than the actual capacity of the project to produce power. The rated capacity could be redefined to use another standardized number that better reflects the real capacity of the project to produce power, such as PV USA Test Conditions.
- Tiers could be defined in terms of both a KW rating and an area, but the KW ratings should be somewhat higher than those in the working draft handout so as not to limit the advancing solar technology. KW can't be dispensed with entirely because the statutory requirements are stated in terms of KW rating.
- Impact of a project on area of 1 to 10 acres or larger are of concern to DGIF.
- Rooftop, parking lot, or building-mounted solar arrays are not subject to regulation under the PBR.

*ACTION Item: the title of the Part III section referring to tiers 1 and 2 will be changed to clarify that size requirements do not apply to a number of the categories listed within Part III.*

- According to the working draft, Tier 1 (100KW or less) has no requirements. Tier 2 (greater than 100KW but equal to or less than 1 MW) requires the applicant to notify DEQ, obtain local government certification, certify that the applicant has performed the basic desktop surveys described in the section. Tier 3 (greater than 1MW up to 100MW) requires a fee and an application that meets the 14 specified requirements in 9VAC15-50-30 (lines 154-232).
- Anything up to 10 acres ought to have only Tier 2 requirements and if the project can fit up to and including a 5MW project onto 10 acres, it should not require Tier 3 review.

*Break at 10:55. Resumed at 11:05. Continued discussion of the PBR tier size categories.*

- Anything up to 2 acres ought to have only Tier 1 requirements and if the project can fit up to and including a 500KW project onto 2 acres, it should not require Tier 2 requirements.
- The tier power ratings should reflect improvements in solar module efficiency over the next 4 years until the regulation is next reviewed according to the periodic review requirements.
- PV USA test condition (PTC) ratings should be used to rate solar module output capacity instead of standard test condition (STC) ratings or nameplate ratings.

*CONSENSUS: Redefine "rated capacity" to include the use of PTC rated capacity of the module output.*

*CONSENSUS: Change the draft PBR to reflect the following tier limits:*

	<u><i>Rated Capacity</i></u>	<u><i>Disturbance Zone</i></u>
<i>Tier 1</i>	$\leq 500 \text{ KW}$	$\leq 2 \text{ acres}$
<i>Tier 2</i>	$> 500 \text{ kW to } \leq 5 \text{ MW}$	$> 2 \text{ acres to } 10 \text{ acres}$
<i>Tier 3</i>	$> 5 \text{ MW to } 100 \text{ MW}$	$> 10 \text{ acres}$

c) Discussion of Tier 3 application requirements (proposed 9VAC15-50-30, lines 154-232).

- Some corrections are needed to delete "wind" and change to "solar." (Typos)
- No objections to requirements for operating plans, professional engineer certifications, site plans or public comment periods.
- It is unlikely that there will be any projects over 5MW in nearshore waters or submerged lands, so these provisions (from the Wind PBR) can be omitted from the Solar PBR.
- Any fee should only cover staff costs associated with this PBR.

*CONSENSUS: All 14 requirements for the application are appropriate, assuming that minor typographical corrections are made and the bolded language in item 13 concerning nearshore waters and submerged lands (lines 222 through 225) is removed.*

d) Discussion of the Tier 3 wildlife analysis requirements (proposed 9VAC15-50-40, lines 255-271).

- A desktop analysis is proposed to identify wildlife resources within 2 miles of the project, and sea turtle nesting areas within 1/2 mile of the project.
- A desktop analysis is proposed to identify projects within areas designated as Coastal Avian Protection Zones (CAPZ).
- No analysis for bats or automatically required field work are proposed.
- Some corrections are needed to change "wind" to "solar."

e) Discussion of Tier 3 wildlife determination of significant adverse impact requirement (proposed 9VAC15-50-50, lines 308-315).

- The definition of significant impacts is an operational definition. If threatened or endangered (T&E) species are within the disturbance zone, if the disturbance zone is

within a half mile of sea turtle nesting sites, or the disturbance zone is within certain CAPZ areas, then the regulation specifies that DEQ "shall find" that significant adverse impacts are likely.

- Mitigation may be required if project is within these distances, and mitigation may be significant. But most of the mitigation requirements are already in guidance and so additional fieldwork may be unlikely unless the applicant wishes to rebut the results of the analysis. The exception may be eagle nesting sites, where less is known about the sites. Additional field work may be necessary.
- If there may be a finding of significant adverse impacts as a result of these desktop surveys, it is desirable for the developer to open conversations with DEQ staff, who will involve the affected agencies, early in the application process.

f) Discussion of Tier 3 wildlife mitigation requirements (proposed 9VAC15-50-60, lines 322-358).

- For T&E species in the disturbance zones, take "all reasonable measures" to avoid significant adverse impacts; or if can't avoid, then minimize; and if can't minimize, then offset.
- Where the disturbance zone is within 1/2 mile of sea turtle nesting sites, take "all reasonable measures" to avoid significant adverse impacts; or if can't avoid, then minimize. Steps for minimizing impact are specified. Same as in Wind PBR.
- For projects located within certain avian CAPZ, offset with \$1,000 per MW of capacity.
- Other mitigation may be necessary also, since adequate mitigation is determined on a site-specific and species-specific case-by-case basis.
- The "beach house" rule was suggested by a RAP member. In the Wind RAP's, this concept was sometimes termed the "Paylor Principle," because the DEQ director believes that we should interpret our statutory mandates (i.e., to promote renewable energy and to protect natural resources) with this principle in mind: We should not make it more difficult to develop renewable-energy projects than it is to develop other types of projects, unless there is a good reason (e.g., the well-documented negative impact of wind turbines on bats). One of the RAP's tasks is to evaluate whether solar projects present a "good reason" to provide protections for wildlife and/or historic resources that are not required of other types of development.

*CONSENSUS: The requirements of the determination of the Tier 3 wildlife analysis section requirements (9VAC15-50-40, lines 255-271), the significant adverse impact section (9VAC15-50-50, lines 308-315), and the wildlife mitigation section (9VAC15-50-60, lines 322-358) are satisfactory.*

*The RAP broke for lunch at 12:20pm*

*The meeting reconvened after lunch at 1:30pm*

#### **- Discussion of Draft Solar PBR Provisions (continued from morning)**

g) Discussion of the Tier 3 historic resources analysis requirements (proposed 9VAC15-50-40, lines 273-293).

- In areas where there is scant information about historic resources, a desktop survey is not sufficient to analyze those resources. A survey and analysis by a qualified professional would be required to (i) gather information on known resources within 0.5 miles of the disturbance zone, (ii) do a field survey to identify other architectural/cultural landscape resources within 0.5 miles of the disturbance zone and any archeological resources within the disturbance zone, (iii) determine if the newly identified resources rise to the level of significance of being eligible for listing in the Virginia Landmarks Register (VLR), and (iv) determine if there is a significant negative impact of the project on those significant resources.
- It is probably unlikely that areas with identified architectural or cultural landscape resources will be the site of a proposed project because of the expense of clearing the area and the potential for public concern. The more likely concern would be for the potential destruction of archeological resources. If the footings do not disturb the ground, then destruction of archeological resources may not be a concern.
- The cost of a qualified professional is a small proportion of the overall cost of the project, but it is necessary to have a professional doing the surveys and making those determinations.
- DHR regulations and guidance should be sufficient to specify the level of data collection, and the PBR (line 242-244) requires a certain level of analysis and requires that the agency notify the applicant of deficiencies. This should be sufficient to keep the application process from dragging on.

*ACTION Item: Scott Sklar will provide DHR with information on platform footings. DHR will review the information provided and determine if additional language (worked out between Scott Sklar, John Daniel and DHR) is appropriate that would specify when Tier3 archeological field studies are not necessary for projects having platform (non-penetrating) footings.*

*CONSENSUS: The requirements of the Tier 3 historic analysis section requirements (9VAC15-50-40, lines 273-293) are satisfactory. If DHR, Scott Sklar, and John Daniel can come up with language for exclusion of non-penetrating footings or a way for such footings to justify either no archeological survey or an abbreviated analysis and review of archeological resources, that is acceptable to DHR, then the proposed language may be included also.*

- h) Discussion of the Tier 3 historic resources determination of significant adverse impacts (proposed 9VAC15-50-50, lines 316-319) and mitigation requirements (proposed 9VAC15-50-60, lines 359-372).
- All means to minimize significant adverse impacts to VLR architectural resources will be used where possible, either through design of the project or through screening. If not possible, then a reasonable offset mitigation plan is required.
  - Where destruction of the resource is necessary, particularly with VLR archeological resources, documentation of the resource and data recovery is required.
  - All single-family and duplex private residences and buildings less than 50 years of age would not be subject to these requirements. Other buildings would be subject to requirements according to the tiered criteria.

*CONSENSUS: The requirements of the Tier 3 historic resource analysis section requirements (9VAC15-50-40, lines 273-293), the significant adverse impact section (9VAC15-50-50, lines 316-319), and the historic wildlife mitigation section (9VAC15-50-60, lines 359-372) are satisfactory. The bolded language in lines 282-285 requiring the use of context maps for analysis of known historic resources will be left in the proposal.*

- i) Discussion of the Tier 3 analysis for other resources (proposed 9VAC15-50-40, lines 294-299).
  - A determination of significant adverse impact and mitigation for impacts on natural heritage resources (DCR), scenic resources, T&E insects (VDACS) is not required by statute, but survey and analysis may be required.
  - The proposed requirement to do a preconstruction desktop survey for natural heritage resources within the disturbance zone should be left in the proposal. These surveys will also identify T&E insects. If mitigation is required for wildlife impacts, then the applicant may opt to benefit relevant natural heritage resources as part of the wildlife mitigation plan.
  - The identification of critical habitat areas under "other resources" is important because the public will be informed about those impacts, and will have the opportunity to get on board with the project (or to request the applicant to take impacts into account), so that the project doesn't turn into an ongoing fight with the public over these other types of resources.
  - The other bolded language may be deleted.

*CONSENSUS: The requirements of the Tier 3 "other resources" analysis section requirements (9VAC15-50-40, lines 294-299) are satisfactory, except that the extra bolded language in lines 295-298 will be edited to remove everything but the requirement for the preconstruction desktop survey for natural heritage resources.*

- j) Discussion of the Tier 3 site plan and context map requirements (proposed 9VAC15-50-70, lines 294-299).
  - The site plan and context map requirement is fairly standard.

*CONSENSUS: The requirements of the Tier 3 site plan and context map requirements (9VAC15-50-70, lines 374-389) are satisfactory.*

*ACTION ITEM: Carol will update the proposal with changes reflecting the consensus items, and will email out the revised proposal. Please respond with comments within two weeks if there is something that is not satisfactory and please include proposed language that would resolve the issue. Carol will continue to revise, email revisions, and ask for responses within a reasonable time limit.*

### **3. Public Forum.**

No one signed up for the public forum. However, comments from the public were entertained during the RAP discussions.

#### **4. Announcements.**

There were no announcements.

#### **5. Further Meetings.**

No additional meetings were scheduled. If the action items cannot be satisfactorily resolved by emailing proposed revisions, then an additional meeting may be scheduled in the near future. RAP members were thanked for their service and congratulated on reaching consensus on all issues.

*The meeting was adjourned at 2:55pm.*

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**WORKING DRAFT**  
**11 8 2010 Solar Provisions Only**  
Reflecting Input from DHR on 10/28/10 & 11/4/10  
and Input from DGIF on 11/3/10 & 11/4/10

**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Establishment of permit(s) by rule for the construction and operation of small solar energy projects**

CHAPTER 40  
SMALL RENEWABLE ENERGY PROJECTS (SOLAR) PERMIT BY RULE  
Part I  
Definitions and Applicability

**9VAC15-50-10. Definitions.**

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise: **[check that other definitions from Wind PBR are not needed] [Solar experts: please check PV-related definitions carefully]**

"Applicant" means the owner or operator who submits an application to the department for a permit by rule pursuant to this chapter.

**“Archive search” means . . . [to be provided by DHR]**

"Coastal Avian Protection Zones" or "CAPZ" means the areas designated on the map of "Coastal Avian Protection Zones" generated on the department's Coastal GEMS geospatial data system (9VAC15-50-120 C 1).

**“Concentrating Photovoltaics” or “CPV” means PV systems with equipment to focus or direct sunlight on the PV cells. For purposes of this Chapter, CPV is included in the definition of PV.**

"Department" means the Department of Environmental Quality, its director, or the director's designee.

"DCR" means the Department of Conservation and Recreation.

"DGIF" means the Department of Game and Inland Fisheries.

"Disturbance zone" means the area within the site directly impacted by construction and operation of the solar energy project, and within 100 feet of the boundary of the directly impacted area.

"Ecological core" means an area of nonfragmented forest, marsh, dune, or beach of ecological importance that is at least 100 acres in size and identified in DCR's Natural Landscape Assessment web-based application (9VAC15-40-120 C 2) .

"Historic resource" means any prehistoric or historic district, site, building, structure, object, or cultural landscape that is included or meets the criteria necessary for inclusion in the Virginia Landmarks Register pursuant to the authorities of § 10.1-2205 of the Code of Virginia and in accordance with 17VAC5-30-40 through 17VAC5-30-70.

**“Integrated PV” means photovoltaics incorporated into building materials, such as shingles.**



44 **(Do we need definition of “distributed PV”?)**

45 "Interconnection point" means the point or points where the solar energy project  
46 connects to a project substation for transmission to the electrical grid.

47 "Invasive plant species" means non-native plant species that cause, or are likely to  
48 cause, economic or ecological harm or harm to human health as established by  
49 Presidential Executive Order 13112 (64 FR 6183, February 3, 1999) and contained on  
50 DCR's Invasive Alien Plant Species of Virginia (9VAC15-50-120 B 3) . **(Needed?)**

51 **“Other solar technologies” means materials or devices or methodologies of**  
52 **producing electricity from sunlight other than PV or CPV.**

53 "Natural heritage resource" means the habitat of rare, threatened, or endangered  
54 plant and animal species, rare or state significant natural communities or geologic sites,  
55 and similar features of scientific interest benefiting the welfare of the citizens of the  
56 Commonwealth.

57 **[“Nearshore waters” and “State-Owned Submerged Lands” – needed for**  
58 **solar? If so, then there are several provisions from Wind PBR that need to be**  
59 **incorporated.]**

60 "Operator" means the person responsible for the overall operation and management  
61 of a solar energy project.

62 "Owner" means the person who owns all or a portion of a solar energy project.

63 **“Parking lot” means . . . [to be provided by DHR]**

64 "Permit by rule" means provisions of the regulations stating that a project or activity  
65 is deemed to have a permit if it meets the requirements of the provision.

66 "Person" means any individual, partnership, firm, association, joint venture, public or  
67 private corporation, trust, estate, commission, board, public or private institution, utility,  
68 cooperative, county, city, town, or other political subdivision of the Commonwealth, any  
69 interstate body, or any other legal entity.

70 **“Photovoltaic” or “PV” means materials and devices that absorb sunlight**  
71 **and convert it directly into electricity by semiconductors.**

72 **“Photovoltaic cell” or “PV cell” means a solid state device that converts**  
73 **sunlight directly into electricity. PV cells may be connected together to form PV**  
74 **modules, which in turn may be combined and connected to form PV arrays (often**  
75 **called PV panels).**

76 **“Photovoltaic system” or “PV system” means PV cells, which may be**  
77 **connected into one or more PV modules or arrays, including any appurtenant**  
78 **wiring, electric connections, mounting hardware, power-conditioning equipment**  
79 **(inverter), and storage batteries. [Does this def need to be modified to account for**  
80 **PV cells integrated into building materials?]**

81 "Pre-construction" means any time prior to commencing land-clearing operations  
82 necessary for the installation of energy-generating structures at the small solar energy  
83 project.

84 "Rated capacity" means the maximum capacity of a solar energy project based on  
85 the sum total of each PV system's nameplate capacity. **(Does this term need to be re-**  
86 **defined in terms of solar?)**

87 "Site" means the area containing a solar energy project that is under common  
 88 ownership or operating control. Electrical infrastructure and other appurtenant structures  
 89 up to the interconnection point shall be considered to be within the site.

90 "Small renewable energy project" means (i) an electrical generation facility with a  
 91 rated capacity not exceeding 100 megawatts that generates electricity only from  
 92 sunlight, wind, falling water, wave motion, tides, or geothermal power, or (ii) an electrical  
 93 generation facility with a rated capacity not exceeding 20 megawatts that generates  
 94 electricity only from biomass, energy from waste, or municipal solid waste.

95 **"Small solar energy project," "solar energy project," or "project" means a**  
 96 **small renewable energy project that (i) generates electricity from sunlight, whose**  
 97 **main purpose is to supply electricity, consisting of one or more PV systems and**  
 98 **other appurtenant structures and facilities within the boundaries of the site; and**  
 99 **(ii) is designed for, or capable of, operation at a rated capacity equal to or less**  
 100 **than 100 megawatts. Two or more solar energy projects otherwise spatially**  
 101 **separated but under common ownership or operational control, which are**  
 102 **connected to the electrical grid [?] under a single interconnection agreement,**  
 103 **shall be considered a single solar energy project. Nothing in this definition shall**  
 104 **imply that a permit by rule is required for the construction of test structures to**  
 105 **determine the appropriateness of a site for the development of a solar energy**  
 106 **project.**

107 "T&E," "state threatened or endangered species," or "state-listed species" means  
 108 any wildlife species designated as a Virginia endangered or threatened species by DGIF  
 109 pursuant to the § 29.1-563-570 of the Code of Virginia and 4VAC15-20-130.

110 "VLR" means the Virginia Landmarks Register (9VAC15-50-120 B 1).

111 "VLR-eligible" means those historic resources that meet the criteria necessary for  
 112 inclusion on the VLR pursuant to 17VAC5-30-40 through 17VAC5-30-70 but are not  
 113 listed in VLR.

114 "VLR-listed" means those historic resources that have been listed in the VLR in  
 115 accordance with the criteria of 17VAC5-30-40 through 17VAC5-30-70.

116 "Wildlife" means wild animals; except, however, that T&E insect species shall only be  
 117 addressed as part of natural heritage resources and shall not be considered T&E  
 118 wildlife.

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## 120 **9VAC15-50-20. Authority and applicability.**

121 This regulation is issued under authority of Article 5 (§ 10.1-1197.5 et seq.) of  
 122 Chapter 11.1 of Title 10.1 of the Code of Virginia. The regulation contains requirements  
 123 for solar-powered electric generation projects consisting of **PV** systems and associated  
 124 facilities with **either no connection to the electrical grid** or a single interconnection to  
 125 the electrical grid, that are designed for, or capable of, operation at a **rated capacity [ Is**  
 126 **"rated capacity" the correct measurement to use for solar projects?]** equal to or  
 127 less than 100 megawatts. The department has determined that a permit by rule is  
 128 required for small solar energy projects with a rated capacity **greater than 1 megawatt**  
 129 **(?)** and this regulation contains the permit by rule provisions for these projects in Part II  
 130 (9VAC15-50-30 et seq.) of this chapter. The department has also determined that a **full**  
 131 **(?)** permit by rule is not required for small solar energy projects with a rated capacity of **1**  
 132 **megawatt or less (?)**, and this regulation contains notification and other provisions for

133 these projects in Part III (9VAC15-50-130) of this chapter. **[This section to be revised**  
 134 **to reflect RAP's decisions regarding size categories.]**

135 **The department has determined that small renewable energy projects utilizing**  
 136 **other solar technologies shall fulfill all of the requirements in 15VAC15-40 as**  
 137 **prescribed for small wind energy projects, unless (1) the owner or operator of the**  
 138 **proposed project presents to the department information indicating that the other**  
 139 **solar technology presents no greater likelihood of significant adverse impacts to**  
 140 **natural resources than does PV technology, and (2) the department determines**  
 141 **that it is appropriate for the proposed project utilizing the other solar technology**  
 142 **to meet the requirements of this chapter (9VAC15-50) or of some modification to**  
 143 **either 9VAC15-40 or 9VAC15-50, as prescribed by the department.**

144

145

Part II

146

Permit by Rule Provisions

147

**9VAC15-50-30. Application for permit by rule for solar energy projects.**

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A. The owner or operator of a small solar energy project with a rated capacity greater  
 149 than **1 megawatt [?]** shall submit to the department a complete application, in which he  
 150 satisfactorily accomplishes all of the following: **[Do we want to include all of these**  
 151 **requirements for solar projects? If we delete some requirements, then we may**  
 152 **also need to delete other corresponding sections from Wind PBR model that**  
 153 **explain the requirement that's being deleted.]**

154

1. In accordance with § 10.1-1197.6 B 1 of the Code of Virginia, and as early in  
 155 the project development process as practicable, furnishes to the department a  
 156 notice of intent, to be published in the Virginia Register, that he intends to submit  
 157 the necessary documentation for a permit by rule for a small renewable energy  
 158 project;

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2. In accordance with § 10.1-1197.6 B 2 of the Code of Virginia, furnishes to the  
 160 department a certification by the governing body of the locality or localities  
 161 wherein the small renewable energy project will be located that the project  
 162 complies with all applicable land use ordinances;

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3. In accordance with § 10.1-1197.6 B 3 of the Code of Virginia, furnishes to the  
 164 department copies of all interconnection studies undertaken by the regional  
 165 transmission organization or transmission owner, or both, on behalf of the small  
 166 renewable energy project, **if the project will be interconnected to the**  
 167 **electrical grid;**

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4. In accordance with § 10.1-1197.6 B 4 of the Code of Virginia, furnishes to the  
 169 department a copy of the final interconnection agreement, **if any**, between the  
 170 small renewable energy project and the regional transmission organization or  
 171 transmission owner indicating that the connection of the small renewable energy  
 172 project will not cause a reliability problem for the system. If the final agreement is  
 173 not available, the most recent interconnection study shall be sufficient for the  
 174 purposes of this section. When a final interconnection agreement is complete, it  
 175 shall be provided to the department. The department shall forward a copy of the  
 176 agreement or study to the State Corporation Commission;

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5. In accordance with § 10.1-1197.6 B 5 of the Code of Virginia, furnishes to the  
 178 department a certification signed by a professional engineer licensed in Virginia  
 179 that the maximum generation capacity of the small wind energy project, as  
 180 designed, does not exceed 100 megawatts;

- 181 6. In accordance with § 10.1-1197.6 B 6 of the Code of Virginia, furnishes to the  
182 department an analysis of potential environmental impacts of the small  
183 renewable energy project's operations on attainment of national ambient air  
184 quality standards;
- 185 7. In accordance with § 10.1-1197.6 B 7 of the Code of Virginia, furnishes to the  
186 department, where relevant, an analysis of the beneficial and adverse impacts of  
187 the proposed project on natural resources. The owner or operator shall perform  
188 the analyses prescribed in 9VAC15-50-40. For wildlife, that analysis shall be  
189 based on information on the presence, activity, and migratory behavior of wildlife  
190 to be collected at the site for a period of time dictated by the site conditions and  
191 biology of the wildlife being studied, not exceeding 12 months;
- 192 8. In accordance with § 10.1-1197.6 B 8 of the Code of Virginia, furnishes to the  
193 department a mitigation plan pursuant to 9VAC15-50-60 that details reasonable  
194 actions to be taken by the owner or operator to avoid, minimize, or otherwise  
195 mitigate such impacts, and to measure the efficacy of those actions; provided,  
196 however, that the provisions of 9VAC15-50-30 A 8 shall only be required if the  
197 department determines, pursuant to 9VAC15-50-50, that the information  
198 collected pursuant to § 10.1-1197.6 B 7 of the Code of Virginia and 9VAC15-50-  
199 40 indicates that significant adverse impacts to wildlife or historic resources are  
200 likely. The mitigation plan shall be an addendum to the operating plan of the solar  
201 energy project, and the owner or operator shall implement the mitigation plan as  
202 deemed complete and adequate by the department. The mitigation plan shall be  
203 an enforceable part of the permit by rule; **(Do we need to require operating**  
204 **plan for solar?)**
- 205 9. In accordance with § 10.1-1197.6 B 9 of the Code of Virginia, furnishes to the  
206 department a certification signed by a professional engineer licensed in Virginia  
207 that the project is designed in accordance with 9VAC15-50-80; **(?)**
- 208 10. In accordance with § 10.1-1197.6 B 10 of the Code of Virginia, furnishes to  
209 the department an operating plan that includes a description of how the project  
210 will be operated in compliance with its mitigation plan, if such a mitigation plan is  
211 required pursuant to 9VAC15-40-50; **(?)**
- 212 11. In accordance with § 10.1-1197.6 B 11 of the Code of Virginia, furnishes to  
213 the department a detailed site plan meeting the requirements of 9VAC15-50-70;
- 214 12. In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, furnishes to  
215 the department a certification signed by the applicant that the small wind energy  
216 project has applied for or obtained all necessary environmental permits;
- 217 13. Prior to authorization of the project and in accordance with §§ 10.1-1197.6 B  
218 13 and 10.1-1197.6 B 14 of the Code of Virginia, conducts a 30-day public review  
219 and comment period and holds a public meeting pursuant to 9VAC15-50-90. The  
220 public meeting shall be held in the locality or, if the project is located in more than  
221 one locality, in a place proximate to the location of the proposed project;  
222 **however, for projects located in nearshore waters or on state owned**  
223 **submerged lands, the meeting shall be held in the locality that is the**  
224 **closest distance from the approximate center of the project's disturbance**  
225 **zone. (delete nearshore refs for solar?)** Following the public meeting and  
226 public comment period, the applicant shall prepare a report summarizing the  
227 issues raised by the public and include any written comments received and the  
228 applicant's response to those comments. The report shall be provided to the  
229 department as part of this application; and

230 14. In accordance with 9VAC15-50-110, furnishes to the department the  
 231 appropriate fee. **(Need to calculate fee appropriate for solar. Possibly not**  
 232 **as high as for wind?)**

233 B. Within 90 days of receiving all of the required documents and fees listed in  
 234 subsection A of this section, the department shall determine, after consultation with other  
 235 agencies in the Secretariat of Natural Resources, whether the application is complete  
 236 and whether it adequately meets the requirements of this chapter, pursuant to § 10.1-  
 237 1197.7 A of the Code of Virginia.

238 1. If the department determines that the application meets the requirements of  
 239 this chapter, then the department shall notify the applicant in writing that he is  
 240 authorized to construct and operate a small solar energy project pursuant to this  
 241 chapter.

242 2. If the department determines that the application does not meet the  
 243 requirements of this chapter, then the department shall notify the applicant in  
 244 writing and specify the deficiencies.

245 3. If the applicant chooses to correct deficiencies in a previously submitted  
 246 application, the department shall follow the procedures of this subsection and  
 247 notify the applicant whether the revised application meets the requirements of  
 248 this chapter within 60 days of receiving the revised application.

249 4. Any case decision by the department pursuant to this subsection shall be  
 250 subject to the process and appeal provisions of the Administrative Process Act  
 251 (§ 2.2-4000 et seq. of the Code of Virginia).

252

253 **9VAC15-50-40. Analysis of the beneficial and adverse impacts on natural**  
 254 **resources.**

255 A. Analyses of wildlife. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of  
 256 Virginia, the applicant shall conduct pre-construction wildlife analyses. The analyses of  
 257 wildlife shall include the following:

258 1. Desktop surveys and maps. The applicant shall obtain a wildlife report and  
 259 map generated from DGIF's Virginia Fish and Wildlife Information Service web-  
 260 based application (9VAC15-50-120 C 3) or from a data and mapping system  
 261 including the most recent data available from DGIF's subscriber-based Wildlife  
 262 Environmental Review Map Service of the following: (i) known wildlife species  
 263 and habitat features on the site or within two (2) miles of the boundary of the  
 264 site; and (ii) known or potential sea turtle nesting beaches located within one-half  
 265 (1/2) mile of the disturbance zone. **[Note: These reqmnts are significantly**  
 266 **reduced from reqmnts of Wind PBR.]**

267 2. Desktop map for avian resources in Coastal Avian Protection Zones (CAPZ).  
 268 The applicant shall consult the "Coastal Avian Protection Zones" map generated  
 269 on the department's Coastal GEMS geospatial data system (9VAC15-50-120 C  
 270 1) and determine whether the proposed wind energy project site will be located in  
 271 part or in whole within one or more CAPZ.

272

273 B. Analyses of historic resources. To fulfill the requirements of § 10.1-1197.6 B 7 of  
 274 the Code of Virginia, the applicant shall also conduct a pre-construction historic  
 275 resources analysis. **(?)** The analysis shall be conducted by a qualified professional  
 276 meeting the professional qualification standards of the Secretary of the Interior's

277 Standards for Archeology and Historic Preservation (9VAC15-50-120 B 2) in the  
278 appropriate discipline. The analysis shall include each of the following:

279 1. Compilation of known historic resources. The applicant shall gather  
280 information on known historic resources within the disturbance zone and within  
281 0.5 miles of the disturbance zone boundary and present this information on a  
282 topographic map **(or, if we require a context map, known historic resources**  
283 **could be shown on context map – as we require for Wind PBR). (Is it**  
284 **correct to assume that a non-professional can perform this compilation of**  
285 **known resources? Answer: No.)**

286 2. Architectural survey. The applicant shall conduct a field survey of all  
287 architectural resources, including cultural landscapes, 50 years of age or older,  
288 within the disturbance zone and within 0.5 miles **[reduced from Wind reqmnt]**  
289 of the disturbance zone boundary and evaluate the eligibility of any identified  
290 resource for listing in the VLR.

291 3. Archaeological survey. The applicant shall conduct an archaeological field  
292 survey of the disturbance zone and evaluate the eligibility of any identified  
293 archaeological site for listing in the VLR.

294 C. Analyses of other natural resources. To fulfill the requirements of § 10.1-1197.6 B  
295 7 of the Code of Virginia, the applicant shall also conduct **[pre-construction analyses**  
296 **of the impact of the proposed project on other natural resources, which have not**  
297 **been addressed pursuant to subsection A or B of this section, as follows: Note –**  
298 **delete what's in this bracket?]** a **[pre-construction]** desktop survey of natural  
299 heritage resources within the disturbance zone.

300 D. Summary report. The applicant shall provide to the department a report  
301 presenting the findings of the studies and analyses conducted pursuant to subdivisions  
302 A, B, and C of this subsection, along with all data and supporting documents. The  
303 applicant shall assess and describe the expected beneficial and adverse impacts, if any,  
304 of the proposed project on wildlife and historic resources identified by these studies and  
305 analyses.

306

### 307 **9VAC15-50-50. Determination of likely significant adverse impacts.**

308 A. The department shall find that significant adverse impacts to wildlife are likely  
309 whenever the wildlife analyses prescribed in 9VAC15-50-40 A document that either of  
310 the following conditions exists:

311 1. State-listed T&E wildlife are found to occur within the disturbance zone; or the  
312 disturbance zone is located on or within **one-half (1/2) mile [reduced from**  
313 **Wind reqmnt]** of a known or potential sea turtle nesting beach.

314 2. The disturbance zone is located in part or in whole within zones 1, 2, 3, 4, 5,  
315 10, 11, 12, or 14 on the Coastal Avian Protection Zones (CAPZ) map.

316 B. The department shall find that significant adverse impacts to historic resources  
317 are likely whenever the historic resources analyses prescribed by 9VAC15-50-40 B  
318 indicate that the proposed project is likely to diminish significantly any aspect of a  
319 historic resource's integrity.

320

### 321 **9VAC15-50-60. Mitigation plan.**

- 322 A. If the department determines that significant adverse impacts to wildlife or  
 323 historic resources or both are likely, then the applicant shall prepare a mitigation  
 324 plan.
- 325 B. Mitigation measures for significant adverse impacts to wildlife shall include:
- 326 1. For state-listed T&E wildlife, the applicant shall take all reasonable measures  
 327 to avoid significant adverse impacts, or shall demonstrate in the mitigation plan  
 328 what significant adverse impacts cannot practicably be avoided and why  
 329 additional proposed actions are reasonable. These additional proposed actions  
 330 may include best practices to avoid, minimize, or offset adverse impacts to  
 331 resources analyzed pursuant to 9VAC15-50-40 A or 9VAC15-50-40 C.
- 332 2. For proposed projects where the disturbance zone is located on **or within**  
 333 **one-half (½) mile** of a known or potential sea turtle nesting beach, the applicant  
 334 shall take all reasonable measures to avoid significant adverse impacts or shall  
 335 demonstrate in the mitigation plan what significant adverse impacts cannot  
 336 practicably be avoided, and why additional proposed mitigation actions are  
 337 reasonable. Mitigation measures shall include the following: **(taken from Wind**  
 338 **PBR)**
- 339 a. Avoiding construction within likely sea turtle crawl or nesting habitats  
 340 during the turtle nesting and hatching season (May 20 - October 31). If  
 341 avoiding construction during this period is not possible, then conducting daily  
 342 crawl surveys of the disturbance zone (May 20 - August 31) and one (1) mile  
 343 beyond the northern and southern reaches of the disturbance zone  
 344 (hereinafter "sea turtle nest survey zone") between sunrise and 9:00 a.m. by  
 345 qualified individuals who have the ability to distinguish accurately between  
 346 nesting and non-nesting emergences.
- 347 b. If construction is scheduled during the nesting season, then including  
 348 measures to protect nests and hatchlings found within the sea turtle nest  
 349 survey zone.
- 350 c. Minimizing nighttime construction during the nesting season, and designing  
 351 project lighting during the construction and operational phases to minimize  
 352 impacts on nesting sea turtles and hatchlings.
- 353 3. For projects located in part or in whole within zones 1, 2, 3, 4, 5, 10, 11, 12, or  
 354 14 on the Coastal Avian Protection Zones (CAPZ) map, contribute \$1,000.00 per  
 355 megawatt of rated capacity, or partial megawatt thereof, to a fund designated by  
 356 the department in support of scientific research investigating the impacts of  
 357 projects in CAPZ on avian resources. **(taken from Wind PBR de minimis**  
 358 **requirements for 5MW or less)**
- 359 C. Mitigation measures for significant adverse impacts to historic resources shall  
 360 include:
- 361 1. Significant adverse impacts to VLR-eligible or VLR-listed architectural  
 362 resources shall be minimized, to the extent practicable, through design of the  
 363 solar energy project or the installation of vegetative or other screening.
- 364 2. If significant adverse impacts to VLR-eligible or VLR-listed architectural  
 365 resources cannot be avoided or minimized such that impacts are no longer  
 366 significantly adverse, then the applicant shall develop a reasonable and  
 367 proportionate mitigation plan that offsets the significantly adverse impacts and  
 368 has a demonstrable public benefit and benefit for the affected or similar resource.

369 3. If any identified VLR-eligible or VLR-listed archaeological site cannot be  
 370 avoided or minimized to such a degree as to avoid a significant adverse impact,  
 371 significant adverse impacts of the project will be mitigated through archaeological  
 372 data recovery.

373

374 **9VAC15-40-70. Site plan and context map requirements.**

375 A. The applicant shall submit a site plan that includes maps showing the physical  
 376 features, topography and land cover of the area within the site, both before and  
 377 after construction of the proposed project. The site plan shall be submitted at a  
 378 scale sufficient to show, and shall include, the following: (i) the boundaries of the  
 379 site; (ii) the location, height, and dimensions of all existing and proposed PV  
 380 systems, other structures, fencing, and other infrastructure; (iii) the location,  
 381 grades, and dimensions of all temporary and permanent on-site and access  
 382 roads from the nearest county or state maintained road; and (iv) water bodies,  
 383 waterways, wetlands, and drainage channels.

384 B. The applicant shall submit a context map including the area encompassed by  
 385 the site and within five miles of the site boundary. The context map shall show  
 386 state and federal resource lands and other protected areas, Coastal Avian  
 387 Protection Zones, historic resources, state roads, waterways, locality  
 388 boundaries, forests, open spaces, and transmission and substation  
 389 infrastructure. **[Are these maps “overkill” for solar projects?]**

390

391 **9VAC15-40-80. Small solar energy project design standards.**

392 The design and installation of the small solar energy project shall incorporate any  
 393 requirements of the mitigation plan that pertain to design and installation, if a mitigation  
 394 plan is required pursuant to 9VAC15-50-50.

395

396 **9VAC15-40-90. Public participation.**

397 A. Before the initiation of any construction at the small solar energy project, the  
 398 applicant shall comply with this section. The owner or operator shall first publish a notice  
 399 once a week for two consecutive weeks in a major local newspaper of general circulation  
 400 informing the public that he intends to construct and operate a project eligible for a  
 401 permit by rule. No later than the date of newspaper publication of the initial notice, the  
 402 owner or operator shall submit to the department a copy of the notice along with  
 403 electronic copies of all documents that the applicant plans to submit in support of the  
 404 application. The notice shall include:

405 1. A brief description of the proposed project and its location, including the  
 406 approximate dimensions of the site, approximate number and configuration of PV  
 407 systems, and approximate maximum height of PV systems;

408 2. A statement that the purpose of the public participation is to acquaint the  
 409 public with the technical aspects of the proposed project and how the standards  
 410 and the requirements of this chapter will be met, to identify issues of concern, to  
 411 facilitate communication, and to establish a dialogue between the owner or  
 412 operator and persons who may be affected by the project;

413 3. Announcement of a 30-day comment period in accordance with subsection C  
 414 of this section, and the name, telephone number, address, and email address of



415 the applicant who can be contacted by the interested persons to answer  
416 questions or to whom comments shall be sent;

417 4. Announcement of the date, time, and place for a public meeting held in  
418 accordance with subsection D of this section; and

419 5. Location where copies of the documentation to be submitted to the department  
420 in support of the permit by rule application will be available for inspection.

421 B. The owner or operator shall place a copy of the documentation in a location  
422 accessible to the public during business hours for the duration of the 30-day comment  
423 period in the vicinity of the proposed project.

424 C. The public shall be provided at least 30 days to comment on the technical and  
425 the regulatory aspects of the proposal. The comment period shall begin no sooner than  
426 15 days after the applicant initially publishes the notice in the local newspaper.

427 D The applicant shall hold a public meeting not earlier than 15 days after the  
428 beginning of the 30-day public comment period and no later than seven days before the  
429 close of the 30-day comment period. The meeting shall be held in the locality or, if the  
430 project is located in more than one locality, in a place proximate to the location of the  
431 proposed project.

432 E. For purposes of this chapter, the applicant and any interested party who submits  
433 written comments on the proposal to the applicant during the public comment period or  
434 who signs in and provides oral comments at the public meeting shall be deemed to have  
435 participated in the proceeding for a permit by rule under this chapter and pursuant to  
436 § 10.1-1197.7 B of the Code of Virginia. **[Are full public participation reqmnts  
437 appropriate for solar?]**

438

439 **9VAC15-40-100. Change of ownership, project modifications, termination.**

440 A. Change of ownership. A permit by rule may be transferred to a new owner or  
441 operator if:

442 1. The current owner or operator notifies the department at least 30 days in  
443 advance of the transfer date by submittal of a notice per subdivision 2 of this  
444 subsection;

445 2. The notice shall include a written agreement between the existing and new  
446 owner or operator containing a specific date for transfer of permit responsibility,  
447 coverage, and liability between them; and

448 3. The transfer of the permit by rule to the new owner or operator shall be  
449 effective on the date specified in the agreement described in subdivision 2 of this  
450 subsection.

451 B. Project modifications. Provided project modifications are in accordance with the  
452 requirements of this permit by rule and do not increase the rated capacity of the small  
453 solar energy project, the owner or operator of a project authorized under a permit by rule  
454 may modify its design or operation or both by furnishing to the department new  
455 certificates prepared by a professional engineer, new documentation required under  
456 9VAC15-50-30, and the appropriate fee in accordance with 9VAC15-50-110. The  
457 department shall review the received modification submittal in accordance with the  
458 provisions of subsection B of 9VAC15-50-30.

459 C. Permit by rule termination. The department may terminate the permit by rule  
460 whenever the department finds that:

- 461 1. The applicant has knowingly or willfully misrepresented or failed to disclose a  
462 material fact in any report or certification required under this chapter; or  
463 2. After the department has taken enforcement actions pursuant to 9VAC15-50-  
464 140, the owner or operator persistently operates the project in significant violation  
465 of the project's mitigation plan.

466 Prior to terminating a permit by rule pursuant to subdivision 1 or 2 of this subsection,  
467 the department shall hold an informal fact-finding proceeding pursuant to § 2.2-4019 of  
468 the Virginia Administrative Process Act in order to assess whether to continue with  
469 termination of the permit by rule or to issue any other appropriate order. If the  
470 department determines that it should continue with the termination of the permit by rule,  
471 the department shall hold a formal hearing pursuant to § 2.2-4020 of the Virginia  
472 Administrative Process Act. Notice of the formal hearing shall be delivered to the owner  
473 or operator. Any owner or operator whose permit by rule is terminated by the department  
474 shall cease operating his small solar energy project.

475

476 **9VAC15-40-110. Fees.**

477 A. Purpose. The purpose of this section is to establish schedules and procedures  
478 pertaining to the payment and collection of fees from any applicant seeking a new permit  
479 by rule or a modification to an existing permit by rule for a small solar energy project.

480 B. Permit fee payment and deposit. Fees for permit by rule applications or  
481 modifications shall be paid by the applicant as follows:

- 482 1. Due date. All permit application fees or modification fees are due on submittal  
483 day of the application or modification package.  
484 2. Method of payment. Fees shall be paid by check, draft, or postal money order  
485 made payable to "Treasurer of Virginia/DEQ" and shall be sent to the  
486 Department of Environmental Quality, Receipts Control, P.O. Box 10150,  
487 Richmond, VA 23240.  
488 3. Incomplete payments. All incomplete payments shall be deemed  
489 nonpayments.  
490 4. Late payment. No application or modification submittal will be deemed  
491 complete until the department receives proper payment.

492 C. Fee schedules. Each application for a permit by rule and each application for a  
493 modification of a permit by rule is a separate action and shall be assessed a separate  
494 fee. The amount of the permit application fee is based on the costs associated with the  
495 permitting program required by this chapter. The fee schedules are shown in the  
496 following table:

Type of Action	Fee
Permit by rule application (including first three years of operation)	\$16,000 <b>TBA(?)</b>
Permit by rule modification (after first three years of operation)	\$5,000 <b>TBA(?)</b>

497 D. Use of fees. Fees are assessed for the purpose of defraying the department's  
 498 costs of administering and enforcing the provisions of this chapter including, but not  
 499 limited to, permit by rule processing, permit by rule modification processing, and  
 500 inspection and monitoring of small solar energy projects to ensure compliance with this  
 501 chapter. Fees collected pursuant to this section shall be used for the administrative and  
 502 enforcement purposes specified in this section and in § 10.1-1197.6 E of the Code of  
 503 Virginia.

504 E. Fund. The fees, received by the department in accordance with this chapter, shall  
 505 be deposited in the Small Renewable Energy Project Fee Fund.

506 F. Periodic review of fees. Beginning July 1, 2013, and periodically thereafter, the  
 507 department shall review the schedule of fees established pursuant to this section to  
 508 ensure that the total fees collected are sufficient to cover 100% of the department's  
 509 direct costs associated with use of the fees.

510

511 **9VAC15-40-120. Internet accessible resources.**

512 **[check that all of these are needed for solar]**

513 A. This chapter refers to resources to be used by applicants in gathering information  
 514 to be submitted to the department. These resources are available through the Internet;  
 515 therefore, in order to assist applicants, the uniform resource locator or Internet address  
 516 is provided for each of the references listed in this section.

517 B. Internet available resources.

518 1. The Virginia Landmarks Register, Virginia Department of Historic Resources,  
 519 2801 Kensington Avenue, Richmond, Virginia. Available at the following Internet  
 520 address: <http://www.dhr.virginia.gov/register/register.htm>.

521 2. Professional Qualifications Standards, the Secretary of the Interior's Standards  
 522 and Guidelines for Archeology and Historic Preservation, as amended and  
 523 annotated (48 FR 44716-740, September 29, 1983), National Parks Service,  
 524 Washington, DC. Available at the following Internet address:  
 525 [http://www.nps.gov/history/local-law/arch\\_stnds\\_9.htm](http://www.nps.gov/history/local-law/arch_stnds_9.htm).

526 3. Invasive alien plant species of Virginia, Virginia Department of Conservation  
 527 and Recreation, Division of Natural Heritage, Richmond, Virginia. Available at the  
 528 following Internet address:  
 529 [http://www.dcr.virginia.gov/natural\\_heritage/invspinfo.shtml](http://www.dcr.virginia.gov/natural_heritage/invspinfo.shtml).

530 4. The Natural Communities of Virginia, Classification of Ecological Community  
 531 Groups, Second Approximation, Version 2.3, Virginia Department of  
 532 Conservation and Recreation, Division of Natural Heritage, Richmond, VA.  
 533 Available at the following Internet address:  
 534 [http://www.dcr.virginia.gov/natural\\_heritage/ncintro.shtml](http://www.dcr.virginia.gov/natural_heritage/ncintro.shtml).

535 5. Virginia Outdoors Plan, 2007, Virginia Department of Conservation and  
 536 Recreation, Richmond, Virginia. Available at the following Internet address:  
 537 [http://www.dcr.virginia.gov/recreational\\_planning/vop.shtml](http://www.dcr.virginia.gov/recreational_planning/vop.shtml).

538 6. Virginia's Comprehensive Wildlife Conservation Strategy, 2005 (referred to as  
 539 the Virginia Wildlife Action Plan) , Virginia Department of Game and Inland  
 540 Fisheries, 4010 West Broad Street, Richmond, Virginia. Available at the following  
 541 Internet address: <http://www.bewildvirginia.org/wildlifeplan/>.

542 C. Internet applications.

543 1. Coastal GEMS application, 2010, Virginia Department of Environmental  
 544 Quality. Available at the following Internet address:  
 545 <http://www.deq.virginia.gov/coastal/coastalgems.html>.

546 NOTE: This website is maintained by the department. Assistance and information  
 547 may be obtained by contacting Virginia Coastal Zone Management Program,  
 548 Virginia Department of Environmental Quality, 629 E. Main Street, Richmond,  
 549 Virginia 23219, (804) 698-4000.

550 2. Natural Landscape Assessment, 2010, Virginia Department of Conservation  
 551 and Recreation. Available at the following Internet address: for detailed  
 552 information on ecological cores go to  
 553 [http://www.dcr.virginia.gov/natural\\_heritage/vclnavnla.shtm](http://www.dcr.virginia.gov/natural_heritage/vclnavnla.shtm). Land maps may be  
 554 viewed at DCR's Land Conservation Data Explorer Geographic Information  
 555 System website at <http://www.vaconservedlands.org/gis.aspx>.

556 NOTE: The website is maintained by DCR. Actual shapefiles and metadata are  
 557 available for free by contacting a DCR staff person at  
 558 [vaconslands@dcr.virginia.gov](mailto:vaconslands@dcr.virginia.gov) or DCR, Division of Natural Heritage, 217  
 559 Governor Street, Richmond, Virginia 23219, (804) 786-7951.

560 3. Virginia Fish and Wildlife Information Service 2010, Virginia Department of  
 561 Game and Inland Fisheries. Available at the following Internet address:  
 562 <http://www.vafwis.org/fwis/>.

563 NOTE: This website is maintained by DGIF and is accessible to the public as  
 564 "visitors", or to registered subscribers. Registration, however, is required for  
 565 access to resource- or species-specific locational data and records. Assistance  
 566 and information may be obtained by contacting DGIF, Fish and Wildlife  
 567 Information Service, 4010 West Broad Street, Richmond, Virginia 23230, (804)  
 568 367-6913.

569

570

### Part III

571

#### Notification and Other Provisions for Projects of **One Megawatt** or Less (?)

572

#### **9VAC15-50-130. Small solar energy projects of 1 megawatt or less. [?]**

573

A The owner or operator of a small solar energy project is not required to submit  
 574 any notification or certification to the department if he meets any one (1) of the following  
 575 criteria:

576

1. The small solar energy project has a rated capacity equal to or less than 100 kilowatts.

577

578

2. The small solar energy project is mounted on a single-family or duplex private residence.

579

580

3. The small solar energy project is mounted on one or more building(s) less than 50 years old.

581

582

4. The small solar energy project is mounted over one or more existing, paved parking lots.

583

584

5. The small solar energy project utilizes integrated PV only, provided that the building or structure on which the integrated PV materials are used is less than 50 years old.

585

586

587

B The owner or operator of a small solar energy project with a rated capacity **greater than 100 kilowatts and less than or equal to 1 megawatt (?)** shall notify the

588

589 department by submitting a certification by the governing body of the locality or localities  
590 wherein the project will be located that the project complies with all applicable land use  
591 ordinances. **In addition, the owner or operator of such small solar energy projects**  
592 **shall certify in writing to the department that he has performed (i) a desktop**  
593 **survey of known VLR-listed and VLR-eligible historic resources by means of an**  
594 **archive search of DHR's database, and (ii) a desktop survey of T&E species within**  
595 **the disturbance zone by means of the provisions set forth in 9VAC15-50-40 A 1.**

596

597

598

Part IV  
Enforcement

599

**9VAC15-50-140. Enforcement.**

600

601

602

The department may enforce the provisions of this chapter and any permits by rule authorized under this chapter in accordance with §§ 10.1-1197.9, 10.1-1197.10, and 10.1-1197.11 of the Code of Virginia. In so doing, the department may:

603

1. Issue directives in accordance with the law;

604

2. Issue special orders in accordance with the law;

605

3. Issue emergency special orders in accordance with the law;

606

607

4. Seek injunction, mandamus or other appropriate remedy as authorized by the law;

608

5. Seek civil penalties under the law; or

609

6. Seek remedies under the law, or under other laws including the common law.

610

**DOCUMENTS INCORPORATED BY REFERENCE (9VAC15-50)**

611

612

613

The Natural Communities of Virginia, Classification of Ecological Community Groups, Second Approximation (Version 2.2), 2006, Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA.

614

615

Virginia Outdoors Plan, 2007, Virginia Department of Conservation and Recreation, Richmond, Virginia.

616

617

Virginia's Comprehensive Wildlife Conservation Strategy, 2005, Virginia Department of Game and Inland Fisheries, Richmond, Virginia.

## OVERVIEW

### Possible Tiers of Solar PBR Requirements

October 27, 2010 (**November 8, 2010**, update)

Revised after discussions with DHR on 10/28/10 & 11/4/10  
and discussion with DGIF on 11/3/10

#### 1. No Requirements

(analogous to 500kW or less in Wind PBR)

For: 100 kW or less

Mounted on single-family or duplex private residences

Mounted on buildings < 50 years old

Mounted over existing, paved parking lots  
(will define “parking lot”)

Integrated PV on buildings < 50 years old

**See 9VAC15-50-130 of draft Solar PBR**

#### 2. No Substantive Requirements

(analogous to >500kW to 5 MW in Wind PBR)

For: > 100 KW to 1 MW

Required: Notify DEQ & provide local-government certification

Also require applicant to certify to DEQ that he has performed “due diligence” (for information only; no substantive requirement flows from results), as follows:

- desktop survey of known historic resources via archive search of DHR database (in Guidance, recommend contacting DHR if known VLR listed or eligible found – for advisory information);
- desktop survey to indicate possible T&E species within disturbance zone (in Guidance – recommend contacting DGIF if T&E found – for advisory information)

**See 9VAC15-50-130 of draft Solar PBR**

#### 3. Substantive Requirements

(somewhat reduced from full Wind PBR for >5MW to 100 MW)

For: > 1 MW to 100 MW

Required:

- All (or some?) 14 statutory requirements and fee
- For Wildlife:

Analysis: Submit desktop surveys (but reduced requirement from Wind PBR)

Submit desktop of CAPZ map

Submit desktop of natural heritage resources

Mitigation: - If T&E in disturbance zone, then reasonable mitigation plan to avoid, minimize, or offset

- If within ½ mile of sea turtle nesting

beach, then mitigation plan as prescribed in reg construction May 20 – October 31, and

(avoid design lighting to

minimize impacts).

- If located in CAPZ 1,2,3,4,5,10,11,12, or 14, then contribute \$1000/MW or part thereof toward research. (similar to Wind PBR 5 MW or less)

- For Historic Resources:

Analysis: Submit desktop and architectural/archaeological field surveys performed by DOI-qualified professional.

Mitigation: If analyses indicate that significantly diminishes historic resource's integrity, then mitigation as prescribed in Wind PBR (DHR to provide explanatory info for PBR or Guidance).

**See 9VAC15-50-30 through -120 of draft Solar PBR**

#### **4. Complete (Wind) PBR & Fee**

For: **Other Solar Technologies** (not PV or CPV), unless applicant shows no greater adverse impact than PV, and department determines that Solar (i.e., PV) PBR requirements are appropriate (or variation thereon)

**See Wind PBR 9VAC15-40**

#### **BACKGROUND NOTES:**

##### **Background info in email from Scott Sklar on September 7, 2010:**

200 sq ft/per one kilowatt output at noon is the conservative number for rooftops. 95% of all rooftops would be less than 100 kW (or 20,000 sq ft). Most of the remaining rooftops would range from 500 kW to 3 MW - likely rooftop or parking lot mounted systems.

**Info from Dominion at RAP meeting:** For solar projects in Virginia, it takes approximately 10 acres to generate 1 MW.

##### **Background info from developer re cost of HR consultants on 10/26/10:**

If you need to perform both a Phase I and Phase II cultural and historic resources investigation at a site, then the cost would be in the ballpark of \$50k. If you only had to do a Phase I, it would only be about \$15k. However, if anything is found during a Phase I, you will be required to perform a Phase II that involves actual field work such as shovel tests, etc. A Phase II assessment usually runs about \$30 - \$40k or so. If you have to do a visual impact assessment, it could be another \$10 to \$15k. I think if you use an average cost of \$50k for a Phase I and Phase II survey, or use a range of \$15 to \$70k (depending on the level of surveys required), you would be fine. The costs are really very dependent on the level of surveys required.

DHR Comments: These costs vary widely depending on the scale of the project, its location, and how comprehensively the area has been previously surveyed for historic resources. A Phase 1 should be viewed as a siting and planning tool as it can identify areas to be avoided, thus obviating the need for a Phase 2. It is not always the case that a Phase 2 will be required.

**Addenda from another developer & from DHR on 10/28/10:** Even the "desktop" survey of known historic resources should be performed by a qualified professional. Desktop is only precursor to field studies; does not necessarily provide conclusive data; only points the professional in some likely directions for field studies; only field studies can render reliable and relevant data re historic resources, and whether these resources are VLR-listed or VLR-eligible.