Virginia Regulatory Town Hall

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Proposed Regulation
Agency Background Document

Agency name	Department of Environmental Quality (DEQ)
Virginia Administrative Code (VAC) citation	9 VAC 15 - 40
Regulation title	Small Renewable Energy Projects (Wind) Permit by Rule
Action title	Establishment of one or more permits by rule necessary for the construction and operation of small renewable energy projects mandated by the Virginia 2009 Acts of Assembly Chapters 808 and 854 (HB 2175/SB 1347). Specifically, this regulatory action focuses on wind energy projects.
Date this document prepared	January 2010

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 36 (2006) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual.*

Brief summary

In a short paragraph, please summarize all substantive provisions of new regulations or changes to existing regulations that are being proposed in this regulatory action.

The purpose of this regulatory action is to implement 2009 state legislation requiring the Department of Environmental Quality to develop one or more permits by rule for wind-energy projects with rated capacity not exceeding 100 megawatts. By means of this legislation, the General Assembly moved permitting authority for these projects from the State Corporation Commission to DEQ. By requiring a "permit by rule," the legislature is mandating that permit requirements be set forth "up front" within this regulation, rather than being developed on a case-by-case basis. The legislation mandates that the permit by rule include conditions and standards necessary to protect the Commonwealth's natural resources. The proposal establishes requirements for potential environmental impacts analyses, mitigation plans, facility site planning, public participation, permit fees, inter-agency consultations, compliance and enforcement. The legislation requires DEQ to determine if multiple permits by rule are necessary to address all the renewable-energy media. DEQ determined that multiple permits by rule are necessary. This proposal constitutes DEQ's permit by rule for wind energy projects.

Legal basis

Please identify the state and/or federal legal authority to promulgate this proposed regulation, including (1) the most relevant law and/or regulation, including Code of Virginia citation and General Assembly chapter number(s), if applicable, and (2) promulgating entity, i.e., the agency, board, or person. Describe the legal authority and the extent to which the authority is mandatory or discretionary.

This regulatory action is undertaken by the Department of Environmental Quality pursuant to Code of Virginia Sections 10.1-1197.5 through 10.1-1197.11, 2009 Acts of Assembly Chapters 808 and 854. The legislation mandates that DEQ develop one or more permits by rule for small renewable energy projects.

Purpose

Please explain the need for the new or amended regulation by (1) detailing the specific reasons why this regulatory action is essential to protect the health, safety, or welfare of citizens, and (2) discussing the goals of the proposal, the environmental benefits, and the problems the proposal is intended to solve.

This regulatory action is necessary in order for DEQ to carry out the requirements of 2009 Acts of Assembly Chapters 808 and 854 (hereinafter "2009 statute"). The regulatory action is essential to protect the health, safety, and welfare of Virginia citizens because it will establish necessary requirements, other than those established in applicable environmental permits, to protect Virginia's natural resources that may be affected by the construction and operation of small renewable energy projects.

Substance

Please briefly identify and explain the new substantive provisions (for new regulations), the substantive changes to existing sections, or both where appropriate. (More detail about these changes is requested in the "Detail of changes" section.)

This regulatory action addresses the need for a reasonable degree of certainty and timeliness in the natural-resource protections required of small wind energy projects by setting forth, as fully as practicable, these required protections "up front" in this new permit by rule for wind energy projects. The regulatory action describes how the Department will address analysis of potential environmental impacts, mitigation plans, facility site planning, public participation, permit fees, inter-agency consultations, compliance, enforcement, and other topics that may be brought up during the public comment period.

Issues

Please identify the issues associated with the proposed regulatory action, including:
1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions;

2) the primary advantages and disadvantages to the agency or the Commonwealth; and
3) other pertinent matters of interest to the regulated community, government officials, and the public.

If the regulatory action poses no disadvantages to the public or the Commonwealth, please so indicate.

The primary advantages of the proposed regulation to the public include the following:

For any individual or company wishing to develop a small wind energy project, the proposed regulation provides certain, consistent and, DEQ believes, reasonable standards for obtaining a permit to construct and operate. Furthermore, the proposal mandates that DEQ process permit applications in no more than 90 days – a timeframe that should help developers in their planning. Provision of certain and timely regulatory requirements should assist developers in obtaining project financing.

For individuals or companies wishing to develop very small projects (5 MW and below), the proposal requires notification to DEQ for these projects. This should make it less costly to develop residential-scale and community-scale projects.

Another advantage -- to the regulated community, government officials, and the public – is that this proposal creates a clear and, DEQ believes, an efficient path for development of wind energy in Virginia. Avoiding additional electrical generation from fossil fuels is a benefit for the environment, because renewable energy projects do not emit greenhouse gases or other air pollutants. Developing and expanding new, environmentally-friendly industry in Virginia is also a boost for our economy, and a significant step in creating energy independence from foreign oil interests.

Of interest is the agreement of the regulatory advisory panel (RAP) – a group comprised of representatives from environmental advocacy groups, industry, local government, academia, industry, and state agencies – on all but a small number of issues presented in the proposal. Across the country, wind energy projects are typically lightning rods for significant controversy. The fact that the RAP was able to agree on the vast majority of issues was a significant milestone in creating a more constructive and productive process for approving proposed wind energy projects in Virginia.

The proposal poses no known disadvantages to the public or the Commonwealth.

Requirements more restrictive than federal

Please identify and describe any requirement of the proposal which are more restrictive than applicable federal requirements. Include a rationale for the need for the more restrictive requirements. If there are no applicable federal requirements or no requirements that exceed applicable federal requirements, include a statement to that effect.

There are no applicable federal requirements.

Localities particularly affected

Please identify any locality particularly affected by the proposed regulation. Locality particularly affected means any locality which bears any identified disproportionate material impact which would not be experienced by other localities.

The proposed regulation applies statewide and is not designed to have a disproportionate material impact on any particular locality. As a practical matter, however, wind-energy projects will be located where adequate wind conditions exist (generally Class 3 winds or higher for commercial-scale projects).

Public participation

Please include a statement that in addition to any other comments on the proposal, the agency is seeking comments on the costs and benefits of the proposal, the impacts on the regulated community and the impacts of the regulation on farm or forest land preservation.

In addition to any other comments, the agency is seeking comments on the costs and benefits of the proposal, the potential impacts of this regulatory proposal and any impacts of the regulation on farm and forest land preservation. Also, the agency/board is seeking information on impacts on small businesses as defined in § 2.2-4007.1 of the Code of Virginia. Information may include 1) projected reporting, recordkeeping and other administrative costs, 2) probable effect of the regulation on affected small businesses, and 3) description of less intrusive or costly alternative methods of achieving the purpose of the regulation.

Anyone wishing to submit written comments may do so at the public hearing or by mail, email or fax to Carol C. Wampler, Department of Environmental Quality, 629 East Main Street, P. O. Box 1105, Richmond, VA 23218, ph: 804-698-4579, fax: 804-698-4416, or **carol.wampler@deq.virginia.gov**. Comments may also be submitted through the Public Forum feature of the Virginia Regulatory Town Hall web site at **www.townhall.virginia.gov**. Written comments must include the name and address of the commenter. In order to be considered, comments must be received by 11:59 p.m. on the date established as the close of the comment period.

A public hearing will be held and notice of the public hearing will appear on the Virginia Regulatory Town Hall website (www.townhall.virginia.gov) and published in the Virginia Register of Regulations. The public may submit both oral and written comments at that time.

Economic impact

Please identify the anticipated economic impact of the proposed new regulations or amendments to the existing regulation. When describing a particular economic impact, please specify which new requirement or change in requirement creates the anticipated economic impact.

Projected cost to the state to implement and enforce the proposed regulation, including (a) fund source / fund detail, and (b) a	The fee schedule presented in the proposal is designed to recover DEQ's ongoing costs in implementing and enforcing the proposed

delineation of one-time versus on-going expenditures	regulation. Fees will be collected from permit applicants.
Projected cost of the new regulations or changes to existing regulations on localities	The new regulations are not expected to create costs for localities, unless a locality itself chooses to develop a wind energy project, in which case the locality's costs will be similar to the costs of any other permit applicant (as summarized below). There would be potential costs and benefits to a locality if a project is developed within its jurisdiction; however, those costs and benefits would occur because of the existence of the project – with its potential health and safety issues, access-road construction, etc. – and not because of these regulations. The locality, pursuant to its land-use authority, has the power to determine whether or not a project can be located within its jurisdiction. A locality's decisions in this regard are separate from the operation of the proposed regulations. Pursuant to the 2009 statute, DEQ only requires that the local government certify that the applicant has met all local land-use requirements.
Description of the individuals, businesses or other entities likely to be affected by the new regulations or changes to existing regulations	Individuals, businesses or other entities wishing to develop a small wind energy project of 100 MW or less will be affected by the new regulations.
Agency's best estimate of the number of such entities that will be affected. Please include an estimate of the number of small businesses affected. Small business means a business entity, including its affiliates, that (i) is independently owned and operated and (ii) employs fewer than 500 full-time employees or has gross annual sales of less than $6 million.	DEQ staff is currently aware of two proposed ridge-top projects that could be subject to the new regulation, if the owner/operator chooses to apply for DEQ's permit by rule once these new regulations become final. DEQ does not know how many other projects may be pursued by developers in Virginia. To the extent that small businesses seek to develop smaller projects (5 MW or less), notifications to DEQ will be necessary and the number of these projects is not known.
All projected costs of the new regulations or changes to existing regulations for affected individuals, businesses, or other entities. Please be specific and do include all costs. Be sure to include the projected reporting, recordkeeping, and other administrative costs required for compliance by small businesses. Specify any costs related to the development of real estate for commercial or residential purposes that are a consequence of the proposed regulatory changes or new regulations.	Projected costs to an entity applying for a wind permit by rule are estimated as follows: 1. Cost estimate to apply for the wind permit by rule: 100MW = $545,000; 50MW = $405,000; and 10MW = $310,000. These cost estimates include completion of permit by rule application requirements both desktop and pre-construction field efforts (e.g. wildlife studies, cultural studies, natural resource studies, scenic impact studies, reporting, P.E.

	certification, NAAQS analysis, public meetings/report, application fee, and administrative costs). 2. Cost estimate for first year of post construction wildlife monitoring: 100MW = $170,000; 50MW = $90,000; and 10MW = $40,000. These estimates include the labor, reporting, and administrative costs necessary to conduct the first year of post construction wildlife monitoring. 3. Cost estimate for subsequent years of wildlife mitigation and monitoring: Financial cost cap of $5,000 per turbine per year (that is, the equivalent of approximately 120 hours of curtailment, as specified in the proposed regulation). 4. Cost estimate to submit notification for a more than 500 kw but less than 5 MW wind project is nominal. Requires only submittal of local approvals. All costs are presented as 2010 dollars. Estimates could increase depending on several factors not included above (e.g., specialized species surveys, wetland/stream delineations, phase II/III cultural surveys, etc.). These estimates were developed by two companies with experience in developing wind energy projects, with assistance from their consultant. These cost estimates include reporting, recordkeeping, and administrative costs. The costs are expected to be the same for any individual or business (small or otherwise) that develops a project in the size category addressed by this regulation. No development of commercial or residential real estate is expected to be necessitated as a direct consequence of the new regulation.
Beneficial impact the regulation is designed to produce.	The regulation, like the 2009 enabling legislation, is designed to facilitate development of wind energy while also protecting natural resources. Wind and other

	renewable-energy projects help reduce harmful air pollutants and our country's dependence on foreign oil, and help increase jobs and economic development related to construction and operation of wind projects.

Alternatives

Please describe any viable alternatives to the proposal considered and the rationale used by the agency to select the least burdensome or intrusive alternative that meets the essential purpose of the action. Also, include discussion of less intrusive or less costly alternatives for small businesses, as defined in §2.2-4007.1 of the Code of Virginia, of achieving the purpose of the regulation.

DEQ and other regulatory authorities generally consider permit requirements on a case-by-case basis as each individual permit application is received. The natural-resource protections required of applicants who wish to construct and operate small wind-energy projects in Virginia have heretofore been addressed in this fashion by the State Corporation Commission. In enacting this legislation, the Virginia General Assembly chose to direct DEQ to develop this permit by rule rather than adhering to the more traditional case-by-case alternative. In the current regulatory action, DEQ is considering only the permit-by-rule alternative mandated by the General Assembly.

Concerning provisions within this permit by rule, DEQ considered various alternatives on a large number of issues during the RAP and NOIRA processes. By the end of the process, only four issues remained on which the RAP did not have substantive consensus. These issues, and the rationale behind the alternatives considered, are as follows:

1. Permit by rule applicability.

From the early weeks of the RAP's deliberations, the issue of providing either a *de minimis* exemption or lesser regulatory requirements for small wind energy projects with a rated capacity less than 5 megawatts was a topic of considerable discussion. Additionally, under the existing procedure, the SCC provides a 5 megawatt exemption for all renewable-energy projects, across the board. During the RAP process, the RAP considered the issue to be important, so it was analyzed by the General Subcommittee, which in turn included the issue in its report to the plenary RAP. The RAP unanimously recommended a *de minimis* exemption be provided for small wind energy projects of 500 kilowatts or less. A three-fourths majority of the RAP membership recommended lesser regulatory requirements for wind energy project less than 5 megawatts. The 2009 statute does not explicitly allow for a *de minimis* exemption and, based on counsel from the Attorney General's Office, a *de minimis* exemption is not included. The DEQ has evaluated the RAP discussions relative to small wind energy projects less than 5 megawatts, which included consideration of their lesser impacts to natural resources, existing SCC requirements and legislative intent to encourage renewable energy sources. Based on this evaluation, the department has determined:

a. Permit by rule for 5 megawatts or greater. The DEQ has determined that it is necessary for small wind energy projects equal to or greater than 5 megawatts and equal to or less than 100 megawatts to obtain a permit by rule.

b. Notification for less than 5 megawatts. The DEQ has reviewed the RAP discussions regarding projects of less than 5 megawatts. At the November plenary RAP meeting, 12 of the 16 members present could support less burdensome regulatory requirements for projects less than 5 megawatts. The proposal is for these small wind energy projects of less than 5 megawatts to notify the DEQ and submit certifications verifying that appropriate local government approvals have been obtained. This process should be adequate to detect environmental "fatal flaws." So-called "fatal flaws" are conditions that would strongly militate against locating a project at the site in question. An example of a "fatal flaw" might be breeding grounds for T&E species in the area where turbines would be erected. Although, renewable energy projects of less than 5 megawatts do not have to currently undergo the SCC process, some RAP members could no longer raise their hands in support of this level, believing that projects of this size should be required to perform the full analyses and potential mitigation requirements prescribed by the new permit by rule. Industry representatives asserted that requiring these extensive measures would be burdensome and expensive, and would "kill" development in Virginia of what is generally called "community-scale" projects. These community-scale projects are a likely growth sector for land-based wind projects in Virginia. Community-scale projects in other states typically consist of one or two turbines that provide power to the school, factory, military facility, sewage treatment plant, or similar operation at the project site, and perhaps also to a similarly-sized facility nearby. Some RAP members took the middle ground, apparently believing that "clean" results of a basic environmental audit would be sufficient protection of natural resources for community-scale projects.

A subset of the less than 5 megawatt private wind projects are for either residential or commercial electrical generation needs. SCC's net metering provision is 500 kilowatts. Residential electricity customers with wind turbines with rated capacity up to 100 kilowatts, and commercial customers with wind turbines with rated capacity up to 500 kilowatts, are eligible to utilize the net metering provision. Using the net metering cut-off for residential and commercial use costumers, the proposed regulations do not require notifications for residential and commercial wind energy generation. It should be noted that a major part of the RAP's mission was to balance the 2009 statute's two mandates – to facilitate renewable energy and to protect natural resources. In general wind-energy parlance, the RAP supported no notification requirements for "residential-scale". Residential-scale projects typically provide power to the customer's own home, farm, or commercial business.

Rationale:
(1) While the 2009 statute does not explicitly allow a *de minimis* exemption, the statute does direct DEQ to "develop . . . a permit by rule or permits by rule if it is determined by the Department that one or more such permits by rule are necessary for the construction and operation of small renewable energy projects, including such conditions and standards necessary to protect the Commonwealth's natural resources." Based on information provided by the RAP and balancing of the mandates with the statutory obligations, DEQ has determined that, while an exemption cannot be sought, all of the permit by rule provisions that have been developed are not appropriate for community-scale projects of 5 megawatts or less. For community-scale projects, DEQ proposes notification and local government certification requirements be met in order to meet the mandates of encouraging development and protection of natural resources.

(2) DEQ believes that requiring these community and residential scale wind projects to undergo the year long pre-construction and multi-year post-construction studies, monitoring, and reporting that are required for a permit by rule will significantly diminish the number of these projects developed in Virginia and the Commonwealth will therefore not realize the benefits of

these types of projects. Streamlining the regulatory requirements for these community-scale projects will encourage development, and this will in turn, reduce the need for additional fossil-fuel based generation, and the owners/operators of these small projects may realize financial and operational benefits from not having to purchase all of their electric power from the grid. Although there may be some natural-resource impacts from projects of 5 megawatts and less at the respective construction sites, other existing state environmental protection regulatory programs and local government approval processes are expected to address the environmental issues surrounding these smaller projects. Additionally, these projects are usually placed in developed areas which minimize the potential impacts to many natural resources. DEQ believes that there are benefits of reduced regulatory requirements for these projects in order to encourage this sector and the 5 megawatt level is a reasonable balance point between the statute's mandate to facilitate development of renewable energy projects and its mandate to protect natural resources.

(3) The 5 megawatt balance point duplicates existing law. As a matter of policy, DEQ believes that regulations implementing the 2009 statute – one of whose purposes is to make it "easier" to develop wind-energy projects – should not incorporate standards that would make such development "harder."

(4) The proposed regulation does not specifically include a requirement for a Phase I environmental audit for community-scale projects less than 5 megawatts. Even these small projects of 5 megawatts and less generally cannot be constructed without local government approval or outside financing. As a practical matter, financial institutions and investors do not fund projects without a "clean" Phase I audit and/or other assurance that major environmental liabilities do not exist at the proposed project site. For this reason, DEQ believes that a basic level of environmental scrutiny will occur at proposed project sites in the normal course of doing business, without DEQ's having to spell out how this scrutiny should be done. Additionally, DEQ retains its enforcement authority over these community-scale projects because, as proposed, they will be subject to the regulation. Therefore, if concerns do arise, appropriate action may be taken.

Conclusion: The regulations provide for a common sense balance of regulatory requirements based on the likely impacts from the small wind energy project. This "tiered" regulatory approach is necessary in order to accommodate the mandates to encourage small renewable energy and to protect our natural resources.

2. Inclusion of Species of Greatest Conservation Need (SGCN) as a Mandatory Trigger for Wildlife Mitigation.

The 2009 statute requires the applicant to analyze the beneficial and adverse impacts of the proposed project on natural resources. Further, if the information collected pursuant to these analyses indicates that significant adverse impacts to wildlife or historic resources are likely, then the applicant must submit a mitigation plan detailing actions he will take to avoid, minimize, or otherwise mitigate such impacts, and to measure the efficacy of those actions. One of the RAP's chief tasks was to recommend to DEQ appropriate standards for DEQ to use in determining that significant adverse impacts are likely and how these impacts will be mitigated. In practice, these standards for determining significant adverse impact become mandatory "triggers" for requiring the applicant to develop and submit a mitigation plan.

The RAP's consideration of the appropriate "triggers" for wildlife mitigation produced one of the three issues on which consensus was not achieved. Highlights of the RAP's consideration are as follows:

In the section of the proposed regulation dealing with mandatory triggers for a wildlife mitigation plan, the first trigger – presence of or habitat for bats – was readily agreed to by all RAP members. The unique negative effect of wind turbines on bats is well documented, and virtually every other state and country requires some kind of mitigation for bat fatalities at wind projects, usually in the form of operational curtailment.

The second mandatory trigger – other wildlife – was more controversial among RAP members. Originally, these trigger provisions included not only bats, but also all other wildlife as well. In mid-December, industry representatives put forward a proposed draft in which the mandatory triggers for wildlife mitigation were bats and T&E wildlife. All RAP members agreed that T&E wildlife must be taken into account. DGIF and other RAP representatives, however, believed that the T&E wildlife trigger was not inclusive enough – that a greater number of other wildlife species and factors should be included as mandatory triggers for mitigation. A summary of the RAP's discussions of this issue during late December and early January follows.

All RAP members agreed that the statute does not literally mean for DEQ to protect all wildlife. Mitigation should not be required for common species of wildlife, like crows. The question then becomes, for wildlife other than bats, where should the regulatory line be drawn?

DGIF, in a cooperative meeting with DEQ, narrowed this issue down to the following two alternatives for the RAP to consider at its final meeting: (1) for DEQ to require a mitigation plan if T&E wildlife are found in the project's disturbance zone or (2) for DEQ to require a mitigation plan if T&E wildlife or Tier 1 or Tier 2 Species of Greatest Conservation Need (vertebrates only) are found in the disturbance zone.

DGIF preferred the second choice and provided to the RAP extensive scientific information showing that the Tier 1 & 2 SGCN vertebrate list includes species that are at serious risk and warrant protection. They further showed that the number of SGCN species and the burden of surveying for these species were small, for two reasons – (1) the RAP had already agreed that applicants should survey for categories that encompass a number of species on the Tier 1 & 2 list (Natural Heritage Resources, etc.), and (2) wind projects are unlikely to be built in geographic areas that do not have at least Category 3 winds, thus excluding a number of Tier 1 & 2 species that are found in areas with insufficient wind conditions.

After DGIF's presentation to the RAP, each individual RAP member expressed his/her views on the two proposals.

RAP members from environmental advocacy groups and from a number of state agencies agreed with DGIF and favored making Tier 1 & 2 species, as well as T&E species, a mandatory regulatory trigger for mitigation. All but one representative agreed that the trigger should be limited to Tier 1 and 2 vertebrates.

RAP members from DEQ, DHR, and local government commented on the proposals but abstained from expressing support for either proposal. The RAP member from academia was absent from the meeting.

RAP members from industry and DMME preferred limiting the second mandatory regulatory trigger to T&E species only. In fact, some industry representatives did not want SGCN to be considered at all – even in the survey and analyses section – because SGCN consideration is not required in any other state where they do business. Industry representatives stated other

reasons why they opposed the inclusion of Tier 1 & 2 SGCN vertebrates as mandatory triggers for mitigation.

DEQ chose the alternative of limiting the second mandatory trigger for wildlife mitigation to T&E species. DEQ's reasons include the following points:

(1) T&E species have been designated via a formal regulatory process, and the SGCN species lists have not. Although DGIF explained that the federal government directs wildlife agencies in every state to compile SGCN lists based on scientific evidence and expert opinion, some RAP members were uncomfortable that formation of the SGCN lists does not entail the same type of public input and formal decision-making process that T&E designations do.

(2) Drawing the line at "Tier 1 & 2 SGCN vertebrates" may be logical in a practical sense, because virtually all RAP members agreed that including Tiers 3 & 4 and/or invertebrates would be expensive and burdensome for the applicant. This standard seems somewhat arbitrary in a scientific sense, however, since there does not appear to be scientific research or precedent for drawing the regulatory line at "Tier 1 & 2" or "Tier 1 & 2 vertebrates."

(3) Only T&E species -- and <u>not</u> SGCN species -- are elevated to mandatory regulatory status in other environmental programs (cf. the MOU signed by DEQ, DGIF, and DCR regarding how these species are handled in Virginia Water Protection Permits). As a matter of policy, it appears questionable to elevate SGCN species to mandatory regulatory status for renewable energy projects – which the legislature has singled out to be facilitated and encouraged – when SGCN species do not receive this elevated treatment in other programs that are not so favored by the legislature.

(4) Even if Tier 1 & 2 vertebrate species were made a mandatory trigger for mitigation, the 2009 statute gives DEQ limited tools to effect significant protection of these species. Impacts on wildlife – other than bats – are primarily avoided or minimized in the early stages of project development. As discussed elsewhere in this submission, the 2009 statute gives DEQ authority over the construction and operation stages of small renewable energy projects but not over the first stage -- siting. Authority over siting presumably falls primarily to local governments. It may be possible for a local government to block a developer from putting any turbines on a site within its jurisdiction, pursuant to the local government's zoning and land-use authority. By contrast, DEQ's permitting authority over construction and operation does not appear to reach that far. As a practical matter, what could DEQ do to protect Tier 1 & 2 vertebrates via mitigation at the construction and operational stages? Operational mitigation – specifically curtailment – has been shown to decrease fatalities significantly for bats, but the same has not been shown for other wildlife species. As for mitigation at the construction stage, DEQ does have explicit authority over approval of a site plan under the 2009 statute. Under the proposed site plan requirement and other provisions, DEQ could, for example, require a developer to mitigate by moving a turbine from one location to another within the proposed site to avoid an SGCN nesting area or similar. If, by contrast, opponents of a proposed project contended that no turbines should be built because the proposed site lies within the migration corridor of an SGCN species, then DEQ's authority might not be of great effect. Whether to forbid development at a site appears to relate to siting authority rather than to permitting/mitigation authority. Thus, since siting is not under DEQ's statutory authority, it may generally be of limited practical benefit for DEQ to require mitigation for wildlife, other than for bats. Making Tier 1 & 2 vertebrates a mandatory, across-the-board trigger for mitigation does not seem to take this practical reality into account.

(5) The proposed regulation brings SGCN and other wildlife-related issues into the public eye, even if the regulation does not elevate SGCN to be a mandatory trigger for mitigation. As recommended by the RAP, this proposed regulation specifies that an applicant must survey for and analyze likely impacts to a broad array of wildlife. The results of these surveys and analyses will become part of the public record, which this regulation requires the applicant to make available to the public, including local government. Thus, a local government could consider this information when it determines whether to grant the zoning and special use permits required for a wind energy project to be sited in its jurisdiction. Indirectly, the proposed regulation could assist the local government in making its siting decisions, if the local government so chose.

(6) DEQ staff did not find evidence that other states or federal guidelines mandate that SGCN constitute a requirement for mitigation.

Conclusion: For the reasons cited above, the proposed regulation does not elevate Tiers 1 & 2 SGCN (vertebrates) to mandatory regulatory status by making their existence an automatic trigger for a wildlife mitigation plan. The proposed mandatory triggers are bats and T&E species. Under the proposed regulations, an applicant may opt to propose mitigation for SGCN or other wildlife concerns detected during the survey/analysis process, but such is not required. The proposed regulation does include SGCN Tiers 1&2 vertebrates among the natural resources that an applicant must survey and analyze. Even though some industry representatives objected to the SGCN concept entirely, DEQ believes that surveying and analyzing Tiers 1&2 vertebrates is not an unreasonable burden, especially in the context of all the other wildlife analyses supported without objection by the RAP.

3. Inclusion of coastal avian field studies.

At the wildlife work session on December 21, an environmental-group representative drew the RAP's attention to a recent NJ study, whose preliminary results showed significantly higher than expected avian fatalities at a coastal wind energy project. The attendees at that work session agreed conceptually that the proposed regulation should include a requirement for the applicant to perform desktop mapping of coastal avian migration corridors if the proposed site falls within Virginia's coastal zone.

When this mapping concept was presented to the plenary RAP, an environmental-group representative asked that follow-up field surveys also be added to the desktop coastal avian migratory mapping requirement. Most RAP members agreed with this proposal, but independent developers spoke against requiring field surveys. Later, utility developers told DEQ that they also objected to requiring field surveys. While DEQ was concerned about adding a field-study provision without time for full review by the RAP, DEQ, in order to move forward responsibly, drafted both a desktop mapping and a field study provision, with assistance from DEQ's Coastal Zone Management (CZM) staff. These provisions were then circulated to academic experts relied on by CZM staff, to DGIF, to TNC, and to industry representatives for feedback by January 14.

The RAP members surveyed expressed no serious objection to the wording of the two provisions, although DGIF wanted to expand the field surveys to include resident as well as migratory birds. The university scientists, however, painted a considerably different picture. In brief summary, one stated that the appropriate methods for performing field surveys for coastal migratory birds are not fully developed and that traditional methods are likely to be inadequate or inappropriate. The other professor also expressed significant doubts concerning possible field surveys. He pointed out that relatively little is known concerning coastal and offshore avian

behavior, and that "we still don't know what we don't know." Even if appropriate field-survey methods could be employed, he said it is unclear what meaningful measures could be employed in response to the findings of the field surveys.

DEQ staff presented two alternatives to the DEQ director for addressing the coastal migratory avian issue. The first required only a desktop mapping of relevant coastal avian migration corridors – a relatively simple procedure to which there was no objection from RAP members. The second required that both desktop mapping and follow-up field surveys, where relevant, be performed. Industry representatives had objected to the second alternative, and academic experts had raised uncertainties about the proposal, that time and circumstances did not allow DEQ or the RAP to pursue.

The proposed regulation requires only desktop mapping of coastal avian migratory corridors in the present proposal, for the reasons outlined above, and also in view of DEQ's plan to address offshore issues in a connected, but separate, RAP process scheduled to begin later in 2010.

Background of offshore issue: The 2009 General Assembly directed DEQ to develop these permits by rule for small renewable energy projects, beginning with wind energy. The 2009 General Assembly also directed VMRC to perform a mapping/leasing study of potential sites for renewable energy projects on state-owned bottoms within the 3-mile limit of state waters. VMRC's legislation requires that results of the study be reported to the General Assembly in March 2010. During the summer of 2009, DEQ needed to determine whether to establish an Offshore Subcommittee within the current wind RAP, or to postpone consideration of offshore wind projects until after VMRC completed at least the bulk of its study. The directors of DEQ, VMRC, and DMME met in late summer 2009 and decided that DEQ should postpone its specific consideration of offshore projects. DEQ's plan continues to be to reconvene the wind RAP – with the addition of experts in offshore matters – as soon as practicable after VMRC submits its report in March. In the meantime, VMRC staff has served ably on the wind RAP, and DEQ staff and VMRC staff have worked cooperatively to coordinate their respective projects involving wind energy projects.

The RAP recommended, and DEQ accepted the recommendation, that the proposed regulation be general in nature – not specifying whether it applies to land-based and/or offshore projects. With this approach, the regulation should be finalized by the statutory deadline for wind projects. This proposal is by no means the last word on what the wind permit by rule will provide with respect to offshore projects within state waters. DEQ intends to consider fully – with the assistance of the RAP and additional offshore experts – what the wind permit by rule should provide concerning offshore projects. These recommendations will be consistent with and build upon the results of VMRC's study. Although the proposed regulation only contains a desktop mapping requirement for coastal avian migration issues at this point, DEQ anticipates that a number of measures may be added to or changed in the proposal, based on the work of the offshore wind RAP. This approach seems sounder than trying to craft a coastal field-study provision at the very end of the RAP process and in the face of confusion and conflicts expressed by RAP members and academic experts. DEQ hopes that the offshore RAP effort may "catch up" with the current rule-making, so that the current proposal and any potential offshore amendments might become final at, or close to, the same time. DEQ believes that the future offshore RAP effort may create the opportunity for consensus concerning coastal/offshore avian field studies to be reached.

Conclusion: The proposed regulation sets forth the requirement that the applicant must map coastal avian migratory corridors for proposed wind energy projects in the coastal zone, a

concept agreed to by the RAP. The possibility of requiring follow-up field surveys will be part of the offshore RAP's agenda. DEQ will convene the offshore RAP as soon as practicable after VMRC submits its report to the General Assembly in March.

The foregoing issues represent the chief provisions on which the wind RAP did not reach substantive consensus and on which DEQ needed to consider multiple alternatives. Additional comments on these provisions may be found in the Detail of Changes section of this submission.

There was an additional provision, however, on which the RAP reached substantive agreement but chose not to recommend exactly how this provision should be worded in the proposed regulation. That issue was the financial cap on wildlife mitigation and post-construction monitoring after the first year of operation.

4. Financial cap on wildlife mitigation and post-construction monitoring.

The cap on the applicant's costs of wildlife mitigation and post-construction monitoring was agreed on by all RAP members. It was apparent that there should be some defined point at which the applicant has performed enough mitigation. RAP members considered numeric standards (such as 10 bats per turbine per year) and percentage decrease in bat fatalities. There was no significant precedent for adopting such quantitative standards in either other states or federal guidance, especially as an across-the-board requirement for all projects. The SCC set a numeric standard in a recent Virginia case, but that standard was established on a case-specific basis after the SCC established an extensive record in the case. DEQ will not have the opportunity to develop a record of each case under the permit by rule approach.

Therefore, the RAP turned its attention to other alternatives. The Living Resources Subcommittee came up with a proposed cap of $5000/turbine/year, and developed methodology for apportioning this amount appropriately between mitigation and monitoring. DEQ expects to include this methodology in guidance. The $5000 cap was the subcommittee's way of balancing the goals of facilitating renewable energy and protecting natural resources. Their calculations showed that, for this amount of money, an applicant could curtail operations for an adequate number of hours during low-wind-speed nights in the relevant seasons of the year in order to minimize bat fatalities appropriately. The plenary RAP agreed with this recommendation.

The only remaining challenge was to figure out how to phrase the cap provision so that the public would understand its import. Many were concerned that the public might view a $5000 cap as a way to "buy" permission to kill bats, rather than as a proxy for a reasonable standard of bat mitigation. The RAP formulated three possible language provisions and asked DEQ to utilize the wording it deemed best.

DEQ considered stating the cap as (1) $5000/turbine/year, (2)119 hours/turbine/year, and (3) a formula by which the equivalent of these figures could be derived. Note that 119 hours was the result of a "back calculation" of the method by which the original $5000 cap provision was established by the RAP and would provide an equivalent degree of curtailment. Stakeholders from industry preferred using the 119 hours version.

The proposed regulation describes the cap in terms of hours of curtailment, but rounds the number from 119 to 120. DEQ believes that a number like 119 may give the impression of a

higher degree of precision than actually exists. A representative of industry responded to DEQ's inquiry that rounding the figure to 120 was reasonable.

DEQ is soliciting further public input and will consider any alternatives and issues presented by the public during the upcoming comment period on this proposal that meet the goals of the statute, the regulation, and the agency.

Regulatory flexibility analysis

Please describe the agency's analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.

The permit by rule, in and of itself, is a regulatory method that is considered a less burdensome, faster approach for small businesses and indeed for all applicants.

Small businesses, and all other applicants, whose projects are less than 5 megawatts, but more than 500 kw will have only notification requirements to meet. Applicants with a project of 500 kw or less will have no requirements except those required by local governments.

Since there is no accurate way to predict what type or size of entity will apply for this permit by rule, it is difficult to analyze impacts on small businesses per se.

The RAP and DEQ worked very hard to see that all requirements in the proposal are necessary and reasonable, within the mandates of the enabling legislation.

Public comment

Please summarize all comments received during public comment period following the publication of the NOIRA, and provide the agency response.

Commenter	Comment	Agency response
Bill Dodson, Jr.	Dr. Dodson cautions against regulating wind projects, especially small ones, in this time of need. He favors monitoring and studying impacts at this time.	Dr. Dodson's comment was reported to the regulatory advisory panel and taken into consideration during advisory-panel and agency deliberations.

Christiana Bolgiano	Ms. Bolgiano's comments address three major topics: (1) need for deadlines for permit conditions, monitoring, & enforcement; (2) need to protect human health and safety, especially from the effects of low frequency sound; (3) need to protect natural resources (especially wildlife and forests) with regard to site design, operational protocols, and cumulative impacts.	Ms. Bolgiano's comments were reported to the regulatory advisory panel and considered during advisory-panel and agency deliberations.
Christine H. Porter, Dept of the Navy (DOD)	DOD is pleased to continue working with DEQ to develop and increase use of alternative energy. DOD wants to participate in the regulatory process to address concerns about turbine height and pre-permitting notification and review. DOD is concerned about possible effects of wind projects on military training and operations.	The Navy's comments were reported to the regulatory advisory panel and taken into consideration during advisory-panel and agency deliberations. A representative from the Navy participated in a number of advisory panel meetings and conversations with DEQ staff.

From the pool of stakeholders who had responded to DEQ's public notice, DEQ convened a Regulatory Advisory Panel (RAP) to assist DEQ in developing this proposal. Following is a listing of the members of the RAP:

State Government
DCR – Tom Smith; John Davy & Chris Ludwig, alternates
DGIF – Ray Fernald; Rick Reynolds, alternate
DHR – Julie Langan; Roger Kirchen, alternate
VMRC – Tony Watkinson; Elizabeth Murphy, alternate
DOF – Ronald Jenkins
DMME – Ken Jurman
VDACS – Stephen Versen; Larry Nichols, alternate
DEQ – James Golden
Deputy Secretary of Natural Resources Nikki Rovner

Industry
John Daniel, Troutman Sanders – counsel for independent wind development clients; David Groberg & Don Giecek, Invenergy, alternates
Theo de Wolff, private consultant – independent wind developer
Bob Bisha, Dominion – utility wind developer; Emil Avram, alternate
Larry Jackson, Appalachian Power – utility wind developer; Ron Jefferson, alternate

Environmental Organizations
TNC – Judy Dunscomb; David Phemister, alternate

PEC – Dan Holmes; Todd Benson, alternate
Sierra Club (Virginia) – Jayme Hill; Ivy Main & Steve Bruckner, alternates
Audubon – Mary Elfner; Debi Osborne, alternate

Academia
Jonathan Miles, JMU & various wind organizations/research groups; Maria Papadakis, JMU, alternate

Local Government
VACO – Larry Land

Ex officio
Carol Wampler, RAP Leader, DEQ

The first, introductory meeting of the RAP occurred on July 22, 2009. The RAP was subdivided into three subcommittees for the first half of the deliberation period, as follows: Living Resources (chaired by The Nature Conservancy representative), Landscape (chaired by professors from JMU), and General Provisions (chaired by Deputy Secretary of Natural Resources). After one and a half meeting days of introductory and background presentations, the subcommittees set about analyzing their respective issues and formulating recommendations to the plenary RAP. The subcommittee approach was utilized to enable the RAP to address the numerous and complex resource-protection issues potentially relevant to wind energy facilities within the short timeframe imposed by the 2009 statute. In September, while the subcommittees continued to meet, NOIRA comments were received by DEQ and presented to the RAP and its subcommittees for consideration during the RAP process. Subcommittee chairmen presented their groups' recommendations to the plenary RAP in late October 2009. After several plenary RAP meetings at which these recommendations were discussed and analyzed, DEQ staff met in December with each sister agency individually, and then convened five one-day RAP work sessions, in order to refine further the suggested provisions. Two final plenary RAP meetings occurred on January 5 and 7, 2010, at which RAP members reviewed the preliminary draft and options DEQ staff had compiled, based on the successive recommendations and options produced at all the earlier stages of RAP deliberations. As a result of the diligent and dedicated work of the RAP, consensus was achieved on all substantive issues except three, which are explained in the "Alternatives" and "Detail of Changes" sections of this submission. All RAP plenary meetings, subcommittee meetings, and work sessions enjoyed a high degree of attendance and participation by RAP members and other interested parties. Because of this exceptional degree of public participation, DEQ staff was able to present to the DEQ director a draft proposal to which no RAP member had expressed objection, save on the three aforementioned issues. As prescribed by the 2009 statute, this is the first DEQ permit regulation to be approved by the director, rather than by a citizen board. This proposal represents the DEQ director's decisions based on the statutory intent of the 2009 legislation, the extensive record developed during the RAP process, public comment, ongoing guidance from the Attorney General's office, and the agency's purpose and capabilities.

Family impact

Please assess the impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights

of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

The Department does not expect that the regulation will have a direct impact on the institution of the family and family stability.

Detail of changes

Please detail all changes that are being proposed and the consequences of the proposed changes. If the proposed regulation is a new chapter, describe the intent of the language and the expected impact if implemented in each section. Please detail the difference between the requirements of the new provisions and the current practice or if applicable, the requirements of other existing regulations in place.

If the proposed regulation is intended to replace an emergency regulation, please list separately (1) all provisions of the new regulation or changes to existing regulations between the pre-emergency regulation and the proposed regulation, and (2) only changes made since the publication of the emergency regulation.

Proposed 9 VAC 15-40 is a new chapter designed to implement the statutory mandates of Virginia 2009 Acts of Assembly Chapters 808 and 854 ("the 2009 statute"), which move permitting authority for environmental requirements of small renewable energy projects from the State Corporation Commission (SCC) to the Department of Environmental Quality (DEQ).

The legislation requires DEQ to develop "permits by rule," which are streamlined permitting vehicles currently utilized in DEQ's solid waste division, and which set forth "up front" what requirements all applicants must meet in order to be covered by the permit by rule. The legislation further requires that the regulations include standards necessary to protect the Commonwealth's natural resources. These proposed regulations seek to balance the two statutory goals – (1) to streamline and facilitate development of small renewable energy projects and (2) to protect natural resources.

Pursuant to the statute's provisions, DEQ determined that more than one permit by rule will be necessary to address all renewable media. The current proposal addresses wind-energy projects.

HOW THE PROPOSED REGULATION COMPARES WITH CURRENT LAW:
Under current law, developers of proposed wind energy projects must apply to the SCC, where hearings are held to determine what natural-resource protections will be required at the proposed project site. The SCC's determination is made on a case-by-case basis. The SCC receives input from the natural-resource agencies regarding the agencies' recommendations for needed resource protections for a proposed project. To the best of our knowledge, there are few guidelines in place to inform either the agencies' recommendations or the SCC's acceptance or rejection of those recommendations. There are no time limitations on how long the SCC process may take.

Under the 2009 statute applicants must apply to DEQ for a permit by rule regarding the construction and operation of a proposed wind energy project of 100 megawatts or less. Under

this proposed regulation a project of 5 megawatts to 100 megawatts must apply for a permit by rule and projects 500 kw to 5 megawatts must submit a copy of the local government approval to DEQ. The proposed regulation sets forth, in detailed fashion, what all applicants must do to gain permit coverage or provide notification. The combination of the proposed regulation plus DEQ's guidance will fully explain how each standard must be achieved. The proposal also sets forth the requirement that DEQ process that application and render a decision to the applicant within 90 days. The other natural-resource agencies will continue to have input into this process, but in a different fashion than under existing law. All of the natural-resource agencies were represented on the Regulatory Advisory Panel (RAP) that developed recommendations for this regulation. Further, these agencies will be consulted by DEQ when DEQ makes a decision about each permit application, as required by the 2009 statute. By these methods, input from the natural-resource agencies will continue to be a vital part of the permit decision, but within carefully defined structures and time frames.

HOW NEW REGULATIONS ADDRESS GOALS OF INDUSTRY AND OF ENVIRONMENTAL INTERESTS:
Nationwide, representatives of the wind-energy industry generally articulate three major needs when they seek governmental permission to develop a wind project: certainty, timeliness, and reasonableness. As stated above, the proposed regulation will provide a very high degree of certainty and timeliness. As for reasonableness, the proposed provisions also provide the most appropriate and reasonable standards the RAP and DEQ could develop to balance facilitating renewable energy with protecting natural resources, in compliance with the mandates of the statute. Accordingly, DEQ believes that the proposed regulations put wind developers in a better position than did existing law.

The statute and proposed regulations also address resource-protection needs often cited by environmental advocacy groups and by DEQ's sister agencies as being top priorities. Under the new regimen, significant resource protections will be required for every single project, even if no advocacy group has the time or resources to comment on an individual application. That is the nature of a permit by rule -- to lay out uniform, across-the-board standards for all projects. Virginia's 2009 statute goes further than most other states' standards do in requiring certain natural-resource protections, and the proposed regulations implement those protections, as set forth below. Further, DEQ has an effective apparatus for regulatory enforcement, which some observers of current wind projects believe the SCC lacks. Thus, the proposed regulation achieves many of the goals of environmental groups with respect to wind projects.

In summary, the statute and these proposed regulations provide a number of advantages, for both industry and environmental interests. They help promote development of wind energy, which is an environmental and economic benefit to all citizens.

HOW THE NEW PERMIT BY RULE FITS INTO LOCAL, STATE, AND FEDERAL REQUIREMENTS:
The permit by rule proposal implements the requirements of the 2009 legislation, which defines natural-resource protections at small wind energy projects in Virginia. For the most part, the resources enumerated in the 2009 legislation are not the subject of regulation under current law, but rather are the subject of advisory consultations with natural-resource agencies other than DEQ. DEQ is a regulatory agency. The 2009 statute makes clear that DEQ's regulatory environmental permits (air, water, waste, wetlands, etc.), as well as those regulatory permits of any other agency, if relevant, are still required. The 2009 statute requires that the permit by rule applicant submit to DEQ certification that he has obtained, or applied for, these other environmental permits. The 2009 statute does not abrogate these other permit requirements.

Nor does it abrogate local requirements, as reflected by the fact that the 2009 statute requires the applicant to submit to DEQ certification that he has complied with local land-use provisions. Since the 2009 statute does not explicitly speak to federal requirements, the proposed regulation does not reference federal requirements either. It seems clear, however, that the applicant must comply with requirements of FAA and other federal agencies. To help the public understand that the proposed permit by rule is only one of many requirements a wind energy developer must fulfill, DEQ plans to make information about the full scope of local, state, and federal requirements available on its website. DEQ is currently researching these requirements.

Section Number	Proposed Requirements	Rationale and Consequences
	Part I Definitions and Applicability.	
10	Definitions. The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise: "Applicant" means the owner or operator who submits an application to the department for a permit by rule pursuant to this chapter. "Coastal zone" means the jurisdictions of Tidewater Virginia, as follows: the counties of Accomack, Arlington, Caroline, Charles City, Chesterfield, Essex, Fairfax, Gloucester, Hanover, Henrico, Isle of Wight, James City, King George, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northampton, Northumberland, Prince George, Prince William, Richmond, Spotsylvania, Stafford, Surry, Westmoreland, and York; and the cities of Alexandria, Chesapeake, Colonial Heights, Fairfax, Falls Church, Fredericksburg, Hampton, Hopewell, Newport News, Norfolk, Petersburg, Poquoson, Portsmouth, Richmond, Suffolk, Virginia Beach, and Williamsburg. "Department" means the Department of Environmental Quality, its director, or the director's designee. "DCR" means the Department of Conservation and Recreation.	The definitions explain meanings of relevant terms as these terms are used in the proposed regulation. In a number of instances, the definitions reflect specific decisions debated and recommended by the RAP, and these definitions are not intended to have application beyond the reach of the proposed regulation. Where possible, the RAP used definitions taken from the natural-resource agencies' existing laws and regulations. The definition of "coastal zone" is taken from the Chesapeake Bay Preservation Act and other existing Virginia laws.

	"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 wind energy project, and within 100 feet of the boundary of the directly impacted area.	The definition of "disturbance zone" is important because the proposal prescribes certain environmental analyses or procedures that the applicant must perform within this area. Analyses and protections required for the disturbance zone are generally more detailed and stricter than those for the larger surrounding area or "site."
	"Ecological core" means an area of non-fragmented 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 B 2).	
	"Historic Resource" means any prehistoric or historic district, site, building, structure, object, or cultural landscape which 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.	Since the proposal is a state regulation, the RAP recommended using a Virginia definition of "historic resource."
	"Interconnection point" means the point or points where the wind energy project connects to a project substation for transmission to the electrical grid.	
	"Invasive plant species" means non-native plant species that cause, or are likely to cause, economic or ecological harm or harm to human health as established by Presidential Executive Order 13112 (64 FR 6183, February 3, 1999), and contained on DCR's Invasive Alien Plant Species of Virginia (9VAC15-40-120 A 3).	
	"Natural heritage resource" means the habitat of rare, threatened, or endangered plant and animal species, rare or state significant natural communities or geologic sites, and similar features of scientific interest benefiting the welfare of the citizens of the Commonwealth.	

	"Operator" means the person responsible for the overall operation and management of a wind energy project. "Owner" means the person who owns all or a portion of a wind energy project.	
	"Permit by rule" means provisions of the regulations stating that a project or activity is deemed to have a permit if it meets the requirements of the provision.	Although the 2009 statute directs DEQ to develop permits by rule for renewable energy projects, the term "permit by rule" had never been defined in either statute or regulation. "Permit by rule" is a permitting vehicle utilized in DEQ's solid waste permitting programs. The RAP adhered as closely as possible, given all the 2009 statute's provisions, to the permit by rule model from solid waste in developing standards for the current wind permit by rule. The regulatory definition is a new one, but it conforms to DEQ's practices for permits by rule in the solid waste program.
	"Person" means any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, county, city, town, or other political subdivision of the Commonwealth, any interstate body, or any other legal entity.	
	"Phase of a project" means one continuous period of construction, startup, and testing activity of the wind energy project. A phase is deemed complete when 90 calendar days have elapsed since the last previous wind turbine has been placed in service, except when a delay has been caused by a significant force majeure event, in which case a phase is deemed complete when 180 calendar days have elapsed since the last previous wind turbine has been placed in service. "Post-construction" means any time after the last turbine on the wind energy project or phase of that project has been placed in service. "Pre-construction" means any time prior to commencing land-clearing operations	The definition of "phase" was developed to prevent an applicant from potentially "gaming the system." Some RAP members were concerned that an unscrupulous developer might purposely delay erecting the last turbine so that he could operate all the others without a needed mitigation plan.

	necessary for the installation of energy-generating structures at the small wind energy project. "Rated capacity" means the maximum capacity of a wind energy project based on the sum total of each turbine's nameplate capacity.	
	"SGCN" or "species of greatest conservation need" means any vertebrate species so designated by DGIF as Tier 1 or Tier 2 in the Virginia Wildlife Action Plan (9VAC15-40-120 A 6).	DGIF and all other RAP members (save one) agreed that it was appropriate to confine any consideration of Species of Greatest Conservation Need to vertebrates only. They stated that invertebrate species can be incredibly hard to locate and identify, and qualified experts in the field who might assist an applicant are scarce. All RAP members agreed that the most important SGCN are listed in Tiers 1 & 2, and that it would be appropriate for the wind permit by rule to address only species listed in those tiers, and not in Tiers 3 and 4. The number of species an applicant will have to address is considerably reduced by confining SGCN to only Tiers 1 & 2 vertebrates.
	"Site" means the area containing a wind energy project that is under common ownership or operating control. Electrical infrastructure and other appurtenant structures up to the interconnection point shall be considered to be within the site.	
	"Small renewable energy project" means (i) an electrical generation facility with a rated capacity not exceeding 100 megawatts that generates electricity only from sunlight, wind, falling water, wave motion, tides, or geothermal power, or (ii) an electrical generation facility with a rated capacity not exceeding 20 megawatts that generates electricity only from biomass, energy from waste, or municipal solid waste.	This is the definition of "small renewable energy project" set forth in the 2009 statute.
	"Small wind energy project" or "wind energy project" or "project" (i) means a small renewable energy project that generates electricity from wind, whose main purpose is to supply electricity, consisting of one or more wind turbines and other accessory structures and	

	buildings, including substations, post-construction meteorological towers, electrical infrastructure, and other appurtenant structures and facilities within the boundaries of the site; and (ii) is designed for, or capable of, operation at a rated capacity equal to or less than 100 megawatts. Two or more wind energy projects otherwise spatially separated but under common ownership or operational control that are connected to the electrical grid under a single interconnection agreement, shall be considered a single wind energy project. Nothing in this definition shall imply that a permit by rule is required for the construction of meteorological towers to determine the appropriateness of a site for the development of a wind energy project.	
	"T&E" or "state threatened or endangered species" or "state-listed species" means any wildlife species designated as a Virginia endangered or threatened species by DGIF pursuant to the §29.1-563-570 of the Code of Virginia and 4VAC15-20-130.	This definition of "T&E" purposely focuses on those T&E species designated by DGIF, and omits T&E insects designated by VDACS. See note below regarding definition of "wildlife."
	"VLR" means the Virginia Landmarks Register (9VAC15-40-120 A 1). "VLR-eligible" means those historic resources that meet the criteria necessary for inclusion on the VLR pursuant to 17VAC5-30-40 through 17VAC5-30-70 but are not listed in VLR. "VLR-listed" means those historic resources that have been listed in the VLR in accordance with the criteria of 17VAC5-30-40 through 17VAC5-30-70.	
	"Wildlife" means wild animals; except, however, that T&E insect species shall only be addressed as part of natural heritage resources, and shall not be considered T&E wildlife.	Theoretically, a simple word like "wildlife" should be easy to define; however, the RAP discovered that quite the opposite is true. The RAP reviewed numerous definitions from both state and federal laws and regulations, discussed numerous related issues and sub-issues, and finally concluded it best to use a broad, general definition. Details like "non-native," "exotic," "undomesticated," etc. will be addressed in

		DEQ's guidance as needed. The RAP, including representatives of the Virginia Department of Agriculture and Consumer Services (VDACS) and of DGIF, agreed that T&E insects should be treated as part of Natural Heritage Resources and not as wildlife. This approach is consistent with how T&E plants and insects are addressed under VDACS' law as it applies to all development projects. That is, developers consult DCR's mapping of Natural Heritage Resources. If habitat for T&E plants or insects is found on the proposed development site, then the developer consults with VDACS. Pursuant to VDACS' law, landowners and persons acting with the landowner's explicit permission – who could include developers who lease land for wind energy projects – can take any action they deem appropriate on their own land. This proviso to the definition of "wildlife" is designed to prevent the presence of T&E insects from becoming an automatic, mandatory trigger for wildlife mitigation under the proposed regulation.
20	Authority and applicability. This regulation is issued under authority of Article 5 (§ 10.1-1197.5 et seq.) of Chapter 11.1 of Title 10.1 of the Code of Virginia. The regulation contains requirements for wind-powered electric generation projects consisting of wind turbines and associated facilities with a single interconnection to the electrical grid that are designed for, or capable of, operation at a rated capacity equal to or less than 100 megawatts. The department has determined that a permit by rule is required for small wind energy projects with a rated capacity equal to or greater than 5 megawatts and this regulation contains the permit by rule provisions for these projects in Part II (9VAC15-40-30 et seq.) of this chapter. The department has also determined that a permit by rule is not required for small wind energy projects with a rated capacity less than 5 megawatts and this regulation contains notification provisions for these projects in Part III (9VAC15-40-130) of	This section reiterates the statute's provision that this regulation shall apply to projects of 100 megawatts and smaller. The SCC retains authority over projects larger than 100 megawatts. The section also details which regulatory provisions will apply to projects of 5 megawatts or greater and which will apply to projects less than 5 megawatts. Further discussion regarding this issue is provided in the alternatives section of this document.

	this chapter.	
	Part II Permit by Rule Provisions	
30	Application for a permit by rule for wind energy projects. A. The owner or operator of a small wind energy project with a rated capacity equal to or greater than 5 megawatts shall submit a complete application to the department, in which he satisfactorily accomplishes all of the following: 1. In accordance with § 10.1-1197.6 B 1 of the Code of Virginia, furnishes to the department a notice of intent, to be published in the Virginia Register, that he intends to submit the necessary documentation for a permit by rule for a small renewable energy project; 2. In accordance with § 10.1-1197.6 B 2 of the Code of Virginia, furnishes to the department a certification by the governing body of the locality or localities wherein the small renewable energy project will be located that the project complies with all applicable land use ordinances;	This section lists the basic application requirements as set forth in the 2009 statute. If a particular requirement warrants detailed explanation, then that explanation is set forth either in guidance, in a subsequent section of the proposed regulation, or in both. For example, the analyses, determination of significant adverse impact, and mitigation requirements in paragraphs 7 and 8 are spelled out in three subsequent sections of this proposed regulation. The application requirements are quite specific, as is the practice in a permit by rule. Developers generally value that certainty of knowing exactly what they will be required to do. It enables them to plan their project's design and operation, and to secure financing. Virginia's proposed regulations appear superior to most states' approaches in this respect, since most states largely make permitting decisions on a case-by-case, ad hoc basis. The 2009 statute authorizes DEQ to develop a permit by rule for the "construction and operation" of small renewable energy projects. The statute does not address other major phases of a project's development, namely siting and decommissioning. There is a subtle but significant difference between siting decisions (that is, whether or not a developer can put a project in a particular location) and permitting decisions (that is, how a developer must construct and operate the project once the site has been approved). Since the 2009 statute only authorizes DEQ to develop a permit program for construction and operation of projects, it is assumed that local governments will essentially be making the siting decisions in the process of determining whether to grant special use permits, zoning provisions, and the like. Likewise, decommissioning decisions will presumably fall to local governments, the provisions of the developer's lease agreement, or other relevant entities or documents. Siting and decommissioning criteria are not included in the proposed permit by rule. As specified in

		the statute and proposed regulation, DEQ expects to receive certification from the local government that the applicant has met all local zoning, use permit, and other land-use-related requirements before DEQ considers the applicant's permit by rule application.
	3. In accordance with § 10.1-1197.6 B 3 of the Code of Virginia, furnishes to the department copies of all interconnection studies undertaken by the regional transmission organization or transmission owner, or both, on behalf of the small renewable energy project; 4. In accordance with § 10.1-1197.6 B 4 of the Code of Virginia, furnishes to the department a copy of the final interconnection agreement between the small renewable energy project and the regional transmission organization or transmission owner indicating that the connection of the small renewable energy project will not cause a reliability problem for the system. If the final agreement is not available, the most recent interconnection study shall be sufficient for the purposes of this section. When a final interconnection agreement is complete, it shall be provided to the department. The department shall forward a copy of the agreement or study to the State Corporation Commission; 5. In accordance with § 10.1-1197.6 B 5 of the Code of Virginia, furnishes to the department a certification signed by a professional engineer licensed in Virginia that the maximum generation capacity of the small wind energy project, as designed, does not exceed 100 megawatts;	3. & 4. DEQ plans to continue communications with representatives of PJM, the transmission authority serving Virginia, when developing guidance for subsections 3 and 4. Interconnection issues are within the purview of PJM.
	6. In accordance with § 10.1-1197.6 B 6 of the Code of Virginia, furnishes to the department an analysis of potential environmental impacts of the small renewable energy project's operations on attainment of national ambient air quality standards;	6. Although some of the other renewable media addressed by the 2009 statute involve potentially adverse impacts on attainment of NAAQS, it is not anticipated that wind energy projects will have any such adverse impacts. DEQ's guidance will explain that the applicant may meet the standard above by submitting a

		simple statement to this effect. If the applicant also chooses to state the wind energy project's beneficial impacts on attainment of NAAQS, he may do so. If the applicant is seeking offset credit for his wind energy project, he may append that information to this application. When DEQ's air division receives EPA's standards for offsets, those standards will become part of DEQ's guidance for this subsection. By being part of a regulatory application, the status of the applicant's offset request may be enhanced.
	7. In accordance with § 10.1-1197.6 B 7 of the Code of Virginia, furnishes to the department, where relevant, an analysis of the beneficial and adverse impacts of the proposed project on natural resources. The owner or operator shall perform the analyses prescribed in 9VAC15-40-40. For wildlife, that analysis shall be based on information on the presence, activity, and migratory behavior of wildlife to be collected at the site for a period of time dictated by the site conditions and biology of the wildlife being studied, not exceeding 12 months;	
	8. In accordance with § 10.1-1197.6 B 8 of the Code of Virginia, furnishes to the department a mitigation plan pursuant to 9VAC15-4060 that details reasonable actions to be taken by the owner or operator to avoid, minimize, or otherwise mitigate such impacts, and to measure the efficacy of those actions; provided, however, that the provisions of 9VAC15-40-30 A 8 shall only be required if the department determines, pursuant to 9VAC15-40-50, that the information collected pursuant to § 10.1-1197.6 B 7 of the Code of Virginia and 9VAC15-40-40 indicates that significant adverse impacts to wildlife or historic resources are likely. The mitigation plan shall be an addendum to the operating plan of the wind energy project, and the owner or operator shall implement the mitigation plan as deemed complete and adequate by the department. The mitigation plan shall be	8. The 2009 statute requires Virginia applicants to develop a mitigation plan for likely "significant adverse impacts" to both wildlife and historic resources, and "to measure the efficacy" of those mitigation plans. Research has not produced evidence of such across-the-board requirements in other states. Some business interests may pronounce these aspects of Virginia's regulations stricter or more burdensome than those of other states; however, the regulations implement a statute in which these standards are mandated. Across the country, wildlife experts generally recommend that mitigation and post-construction monitoring be done regarding bat fatalities; and historic resources experts also recommend mitigation by design modifications, screening, or offsets. Virginia appears to be ahead of the curve on these environmental protections.

	an enforceable part of the permit by rule;	Different constituencies will have different views about the costs and benefits of these requirements. In the final analysis, Virginia's statutory mandates for mitigation and post-construction monitoring are policy decisions made by the General Assembly after listening to the views of stakeholders on all sides of the issues. The proposed regulation attempts merely to implement these mandates, and to do so as faithfully, fairly, and reasonably as possible.
	9. In accordance with § 10.1-1197.6 B 9 of the Code of Virginia, furnishes to the department a certification signed by a professional engineer licensed in Virginia that the project is designed in accordance with 9VAC15-40-80.	
	10. In accordance with § 10.1-1197.6 B 10 of the Code of Virginia, furnishes to the department an operating plan that includes a description of how the project will be operated in compliance with its mitigation plan, if such a mitigation plan is required pursuant to 9VAC15-40-50.	10. This provision makes clear that DEQ is concerned only with the aspects of the project's operating plan that involve implementation of the mitigation plan, if a mitigation plan is required. Enforcing health and safety and other operating-plan issues are not within DEQ's authority over natural-resource protections, and they are left to the authority of local government and other relevant entities.
	11. In accordance with § 10.1-1197.6 B 11 of the Code of Virginia, furnishes to the department a detailed site plan meeting the requirements of 9VAC15-40-70;	
	12. In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, furnishes to the department a certification signed by the applicant that the small wind energy project has applied for or obtained all necessary environmental permits;	
	13. Prior to authorization of the project and in accordance with § 10.1-1197.6 B 13 and § 10.1-1197.6 B 14 of the Code of Virginia, conducts a 30-day public review and comment period and holds a public meeting pursuant to 9VAC15-40-90. The public meeting shall be held in the locality or, if the project is located in more than one locality, in a place proximate to the location of the proposed project. Following the public meeting and public	13. The 2009 statute provides that the applicant must hold a public meeting. The statute also provides that a 30-day public review and comment period must occur but does not specify who is to conduct it. The RAP discussed whether that entity should be the applicant or DEQ. In the waste permit by rule, the applicant is the party who conducts this comment period. The General Subcommittee and plenary RAP endorsed the proposed provision, which assigns the applicant

	comment period, the applicant shall prepare a report summarizing the issues raised by the public and include any written comments received and the applicant's response to those comments. The report shall be provided to the department as part of this application; and 14. In accordance with 9VAC15-40-110, furnishes to the department the appropriate fee.	responsibility for both the public meeting and public comment period. One advantage of having the applicant perform this function is that it provides an opportunity for the applicant and public to seek common ground on controversial issues before the final application is submitted to DEQ.
	B. Within 90 days of receiving all of the required documents and fees listed in subsection A of this section, the department shall determine, after consultation with other agencies in the Secretariat of Natural Resources, whether the application is complete and whether it adequately meets the requirements of this chapter, pursuant to § 10.1-1197.7 A of the Code of Virginia. 1. If the department determines that the application meets the requirements of this chapter, then the department shall notify the applicant in writing that he is authorized to construct and operate a small wind energy project pursuant to this chapter. 2. If the department determines that the application does not meet the requirements of this chapter, then the department shall notify the applicant in writing and specify the deficiencies. 3. If the applicant chooses to correct deficiencies in a previously submitted application, the department shall follow the procedures of this subsection and notify the applicant whether the revised application meets the requirements of this chapter within 60 days of receiving the revised application.	B. The proposed 90-day time limit for permit processing is expected to be beneficial to developers, allowing them to proceed with their proposed projects in a timely fashion. It is another aspect of certainty that helps developers make planning decisions and obtain financing. Research indicates that this proposed timeframe is significantly shorter than those used in many other states, and that a number of states do not even provide a time limit for permitting decisions. All RAP members, including representatives of the natural-resources sister agencies, agreed that an adequate and meaningful review of an application can be accomplished within 90 days.
	4. Any case decision by the department pursuant to this subsection shall be subject to the process and appeal provisions of the Administrative Process Act (§ 2.2-4000 et seq. of the Code of	4. This provision reminds the public that the permit by rule, like all other DEQ regulations, affords the applicant (and others who have participated in the public participation process) full rights under the Administrative Process Act.

	Virginia).	These rights include the right to an informal hearing, formal hearing, or both.
40	Analysis of the beneficial and adverse impacts on natural resources.	The 2009 statute requires an applicant to analyze natural resources "where relevant." "Relevant" is a hard word to define in narrative terms. The RAP chose to define it operationally. That is, the wildlife, historic, and other natural resources enumerated in this section are "relevant" if they are detected in the disturbance zone or other specified area by use of the assessment tools prescribed in the regulation. Only the natural resources specified in this section can be deemed relevant. And these natural resources only become relevant if the prescribed methods indicate that they exist in the prescribed areas in or near the disturbance zone.
	A. Analyses of wildlife. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall conduct pre-construction wildlife analyses. The analyses of wildlife shall include the following: 1. Desktop surveys and maps. The applicant shall obtain a wildlife report and map generated from DGIF's Virginia Fish and Wildlife Information Service or Wildlife Environmental Review Map Service web-based application (9VAC15-40-120 B 3) of the following: (i) wildlife species and habitats known to occur on the site or within two (2) miles of the boundary of the site; (ii) bat hibernacula known to occur on the site or within five (5) miles of the boundary of the site; (iii) maternity and bachelor bat colonies known to occur on the site or within twelve (12) miles of the boundary of the site; and (iv) bachelor bat colonies known to occur on the site or within twelve (12) miles of the boundary of the site.	A. The following wildlife analyses were agreed upon by the majority of RAP members as appropriate tools for identifying potential impacts of a proposed wind project on important wildlife. DEQ guidance documents, which have already been created in large part by the RAP's Living Resources Subcommittee, will explain in detail how these analyses should be conducted. The general approach is for the applicant to perform desktop studies of the project area. If the desktop models indicate the presence of relevant wildlife, then the applicant will proceed to perform field studies, usually within the disturbance zone. Results of all studies will be reported to DEQ, along with the applicant's analysis of beneficial and adverse impacts on relevant wildlife of the proposed project.
	2. Breeding bird surveys. If the desktop analyses prescribed in subdivision 1 of this subsection indicate the presence of or habitat for a state-listed T&E bird species or a Tier 1 or Tier 2 bird SGCN within the disturbance zone, then the applicant shall conduct a breeding bird	2. & 3. Please see the "Alternatives" section of this submission for detailed notes concerning the SGCN aspects of this proposal.

	survey to identify state T&E bird species and Tier 1 and Tier 2 bird SGCN occurring within the disturbance zone during the species' annual breeding season. 3. Field survey of non-avian resources. If the desktop analyses prescribed in subdivision 1 of this subsection indicate the presence of or habitat for a Tier 1 or Tier 2 vertebrate SGCN, other than a bird, within the disturbance zone, then the applicant shall conduct field surveys of suitable habitats for that species within the disturbance zone to determine the species' occurrence and relative distribution within the disturbance zone. 4. Raptor migration surveys. The applicant shall conduct one year of raptor migration surveys, in both the spring and fall seasons, to determine the relative abundance of migrant raptors moving through the general vicinity of the disturbance zone. 5. Desktop surveys and maps of coastal avian migration corridors. When a proposed wind energy project site will be located in part or in whole within the coastal zone of Virginia, the applicant shall obtain a desktop report and maps generated from the department's Coastal GEMS geospatial data system (9VAC15-40-120 B 1) showing essential wildlife habitats, important bird areas, and migratory songbird stopover habitat. 6. Bat acoustic surveys. The applicant shall conduct bat acoustic surveys to determine the presence of and level of bat activity and use within the disturbance zone. 7. Mist-netting or harp-trapping surveys. If the applicant identifies potential for T&E bat species within the disturbance zone, the applicant shall conduct a season-appropriate mist-netting survey or harp-trapping survey or both.	5. Please see the "Alternatives" section of this submission for detailed comments regarding treatment of coastal avian resources and related issues.

	8. Wildlife report. The applicant shall provide to the department a report summarizing the relevant findings of the desktop and field surveys conducted pursuant to subdivisions 1 through 7 of this subsection. The applicant shall assess and describe the expected beneficial and adverse impacts, if any, of the proposed project on wildlife resources identified in subdivisions 1 through 7 of this subsection. B. Analyses of historic resources. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct a pre-construction historic resources analysis. The analysis shall be conducted by a qualified professional meeting the professional qualification standards of the Secretary of the Interior's Standards for Archeology and Historic Preservation (9VAC15-40-120 A 2) in the appropriate discipline. The analysis shall include each of the following: 1. Compilation of known historic resources. The applicant shall gather information on known historic resources within the disturbance zone and within five (5) miles of the disturbance zone boundary and present this information on the context map referenced in 9VAC15-40-70 B, or as an overlay to this context map, as well as in tabular format. 2. Architectural survey. The applicant shall conduct a field survey of all architectural resources, including cultural landscapes, 50 years of age or older within the disturbance zone and within 1.5 miles of the disturbance zone boundary and evaluate the eligibility of any identified resource for listing in the VLR. 3. Archaeological survey. The applicant shall conduct an archaeological field survey of the disturbance zone and evaluate the eligibility of any identified archaeological site for listing in the VLR.	B. All RAP members agreed that the following assessment procedures, performed by a qualified professional, are appropriate tools for identifying potential impacts of a proposed wind project on historic resources. Although impacts on historic resources tend to be, by their very nature, more qualitative then quantitative, RAP members were comfortable with the well-established protocols utilized by DHR and the U.S. Department of the Interior. DHR's regulations will be incorporated into DEQ's guidance documents to explain how the applicant should carry out the specified analyses. The general approach is for the applicant to perform desktop studies of the project area. If the desktop models indicate the presence of historic resources, then the applicant will proceed to perform field studies. Results of all studies will be reported to DEQ, along with the applicant's analysis of beneficial and adverse impacts of the proposed project on relevant historic resources.

	4. Historic resources report. The applicant shall provide to the department a report presenting the findings of the studies and analyses conducted pursuant to subdivisions 1 through 4 of this subsection. The applicant shall assess and describe the expected beneficial and adverse impacts, if any, of the proposed project on historic resources identified in subdivisions 1, 2, and 3 of this subsection. C. Analyses of other natural resources. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct pre-construction analyses of the impact of the proposed project on other natural resources, which have not been addressed pursuant to subsections A or B of this section, and as are specified in subdivisions 1 and 2 of this subsection. The analyses shall include: 1. Natural heritage resources. An analysis of the impact of the project on natural heritage resources, which shall include the following: a. A desktop survey of natural heritage resources within the site and within two (2) miles of the boundary of the site. b. Field surveys within the disturbance zone mapping: (i) the ecological community groups as classified in accordance with DCR's The Natural Communities of Virginia, Classification of Ecological Community Groups (9VAC15-40-120 A 4); (ii) natural heritage resources to include species and community identification, location, age, size, spatial distribution, and evidence of reproduction; (iii) caves; (iv) mines; (v) rock outcrops; (vi) cliffs; (vii) wetlands; and (viii) invasive plant species. 2. Scenic resources. An analysis of the impact of the project on scenic resources, as follows:	C. RAP members agreed that Natural Heritage Resources and Scenic Resources should be analyzed by the applicant, in addition to the wildlife and historic resources addressed above. Both categories are major areas of responsibility for DCR, an agency within the Secretariat of Natural Resources. Whereas neither category is specifically addressed in the 2009 statute (as are "wildlife" and "historic resources"), both categories are "natural resources," and the statute requires that "natural resources" be analyzed. Once again, the general approach is for the applicant to perform desktop studies of the area around the proposed project. If the specified resources are detected, then the applicant will follow up with appropriate field studies. Results of all studies will be reported to DEQ, along with the applicant's analysis of beneficial and adverse impacts of the proposed project on Natural Heritage Resources and Scenic Resources.

	a. Pursuant to 9VAC15-40-70, for the area within the site and within 5 miles of the boundary of the site, a viewshed analysis of the impact of the proposed project on existing federally-designated or state-designated scenic resources, including national parks, national forest designated scenic areas, state parks, state natural area preserves, national scenic trails, national or state designated scenic roads, national or state designated scenic rivers and those resources identified as potential candidates for such designation in DCR's Virginia Outdoors Plan (9VAC15-40-120 A 5). b. The applicant shall conduct these analyses and shall show the potential impact of the proposed project on the viewshed from such identified resources, where applicable. 3. Other natural resources report. The applicant shall provide to the department a report, including maps, documenting the results of the analyses conducted pursuant to subdivision 1 and 2 of this subsection. The applicant shall assess and describe the expected beneficial and adverse impacts, if any, of the proposed project on natural resources identified in subdivisions 1 and 2 of this subsection.	
50	Determination of likely significant impacts. A. The department shall find that significant adverse impacts to wildlife are likely whenever the wildlife analyses prescribed in 9VAC15-40-40 A document that either of the following conditions exists: 1. Bats have been detected, or a hibernaculum exists, within the disturbance zone. 2. State-listed T&E wildlife are found to occur within the disturbance zone.	A. This section sets forth the mandatory triggers for a wildlife mitigation plan. The first trigger – presence of or habitat for bats – was readily approved by all RAP members. The unique negative effect of wind turbines on bats is well documented, and virtually every other state and country requires some kind of mitigation for bat fatalities, usually in the form of operational curtailment. The second mandatory trigger – T&E wildlife – was more controversial among RAP members. All RAP members agreed that the statute does not literally mean to protect all wildlife. The question becomes, for wildlife other than bats, where should the regulatory line be drawn?

		DGIF, in a cooperative effort with DEQ, narrowed this issue down to the following two choices for the RAP to consider: (1) for DEQ to require a mitigation plan if T&E wildlife are found or (2) for DEQ to require a mitigation plan if T&E wildlife and/or Tier 1 or Tier 2 Species of Greatest Conservation Need (vertebrates only) are found. A full explanation of how and why DEQ determined to use only T&E species as the second mandatory trigger for wildlife mitigation appears in the "Alternatives" section of this submission.
	B. The department shall find that significant adverse impacts to historic resources are likely whenever the historic resources analyses prescribed by 9VAC15-40-40 B indicate that the proposed project is likely to diminish significantly any aspect of a historic resource's integrity.	B. The integrity of a historic resource is defined in DHR's regulations. This information will be provided and explained in DEQ's guidance, much of which has already been drafted by DHR and the RAP. Although the standard for triggering a historic resources mitigation plan is largely qualitative, the RAP was comfortable that it is understood by DHR and qualified professionals who will be dealing with the standard on behalf of the applicant.
60	Mitigation plan.	Although the 2009 statute requires an applicant to analyze "natural resources," the only resources for which the statute requires a mitigation plan are "wildlife" and "historic resources," and only if DEQ determines that "significant adverse impacts to wildlife or historic resources are likely." This section sets forth the criteria DEQ must use in making these determinations. These criteria operate as mandatory triggers for development of a wildlife mitigation plan or historic resources mitigation plan. A permit by rule is supposed to set forth across-the-board requirements "up front" for all applicants to follow. To the extent practicable, the RAP and DEQ followed this model in developing the proposed regulation. The analyses and mitigation triggers are "one size fits all." When it comes to mitigation, however, the RAP agreed that some degree of individualization will need to occur if the

		mitigation plan is to have meaningful impacts for the project in question. Consequently, the mitigation provisions set forth standard procedures for mitigation but leave room for case-specific determinations where needed.
	A. If the department determines that significant adverse impacts to wildlife or historic resources or both are likely, then the applicant shall prepare a mitigation plan. The mitigation plan shall include a description of the affected wildlife or historic resources or both and the impact to be mitigated, a description of actions that will be taken to avoid the stated impact, and a plan for implementation. If the impact cannot reasonably be avoided, the plan shall include a description of actions that will be taken to minimize the stated impact, and a plan for implementation. If neither avoidance nor minimization is reasonably practicable, the plan shall include a description of other measures that may be taken to offset the stated impact, and a plan for implementation.	A. The regulation restates the traditional hierarchy for mitigation – avoid, minimize, offset.
	B. Mitigation measures for significant adverse impacts to wildlife shall include:	
	1. For state listed T&E wildlife, the applicant shall take all reasonable measures to avoid significant adverse impacts, or shall demonstrate in the mitigation plan what significant adverse impacts cannot practicably be avoided, and why additional proposed actions are reasonable. These additional proposed actions may include best practices to avoid, minimize, or offset adverse impacts to resources analyzed pursuant to 9VAC15-40-40 A or 9VAC15-40-40 C 1.	1. The proposal also reflects one of the alternatives presented to the RAP after the meeting between DGIF and DEQ. That is, the applicant may voluntarily opt to propose best practices to mitigate for other wildlife-related resources when he cannot fully avoid impacts to T&E species. These proposals may include Tier 1 & 2 SGCN, or any other resource analyzed under the wildlife and Natural Heritage Resources provisions.
	2. For bats, the mitigation plan shall include measures to curtail operation of wind turbines on low wind speed nights when bats are likely to be active within the disturbance zone, and to monitor the efficacy of these measures; however, the combined cost of mitigation and post-construction monitoring, in each year after	2. As with many other provisions, the RAP subcommittee spelled out how this provision should be implemented, and their explanation will become part of DEQ's guidance document. Details like cut-in speeds and seasons when mitigation would be appropriate will be included. The cap on the applicant's costs of wildlife

	year one (1), shall not exceed 120 hours of curtailment per year per turbine, averaged. The combined cost of mitigation shall consist of lost revenue from curtailment of wind turbines, including lost production tax credits. 3. Post-construction monitoring shall be designed to achieve the following: a. Estimate the level of avian and bat fatalities associated with the wind energy project, accounting for scavenger removal and searcher efficiency. b. Investigate the correlation of bat fatalities with project operational protocols, weather-related variables, and the effectiveness of operational adjustments to reduce impacts. 4. Post-construction wildlife mitigation and management shall include the	mitigation and post-construction monitoring was agreed on by all RAP members. It was apparent that there should be some defined point at which the applicant has performed enough mitigation. Although the RAP considered a number of alternatives, it ultimately agreed that the financial cap was the best choice. The RAP left it to DEQ to determine the best way to word this provision so that the public would understand that the financial cap is a proxy for a reasonable standard of mitigation. The financial cap provision is explained more fully in the "Alternatives" section of this submission. The provisions reflect that the applicant will do extensive monitoring during the first year of operation, in order to determine which patterns of curtailment are most effective for minimizing bat fatalities. The financial cap does not begin until the second year of operation. The proposal contemplates that, within three years of mitigation and monitoring, the operator will have established an effective curtailment strategy, or will have ascertained that curtailment (or curtailment alone) is not the most effective mitigation strategy. If he needs to amend his original mitigation plan in view of this experience, the proposal allows him to submit an amendment for DEQ's consideration. This approach is designed to foster "adaptive management," a strategy touted by many in the wind-energy arena, in which the operator adapts his mitigation strategy according to what measures work most effectively.

	following: a. Post-construction mitigation. After completing the initial one (1) year of post-construction monitoring, the owner or operator shall submit a plan consisting of his proposed monitoring and mitigation actions expected to be implemented for the remainder of the project's operating life. b. Amendment of wildlife mitigation plan. After three (3) years of post-construction mitigation efforts, the owner or operator of the project may initiate a consultation with the department to propose amendments to the mitigation plan. The owner or operator shall submit any proposed amendments of the mitigation plan to the department. The department may approve the proposed amendments if the department determines that the proposed amendments will avoid or minimize adverse impacts to a demonstrably equal or greater extent as the mitigation measures being implemented at that time. Alternatively, the department may approve the proposed amendments to the mitigation plan if the owner or operator demonstrates that the mitigation measures being implemented at that time are not effectively avoiding or minimizing adverse impacts, and the owner's or operator's proposed amendments are preferable methods to mitigate for ongoing adverse impacts. For example, proposed amendments may include funding research or preserving habitats. C. Mitigation measures for significant adverse impacts to historic resources shall include: 1. Significant adverse impacts to VLR-eligible or VLR-listed architectural resources shall be minimized, to the extent practicable, through design of the wind energy project or the installation of vegetative or other screening. 2. If significant adverse impacts to VLR-	C. Ongoing impacts of wind energy projects on historic resources are typically view shed impacts. The applicant can sometimes move the location of turbines within the site to minimize these impacts, or he can construct or plant screening materials so that the turbines cannot be as fully viewed from the historic resource. If he cannot practicably screen the turbines from view so that the impact is no longer a significant diminishment of the historic resource's integrity, then the applicant must develop an offset. An offset might be protecting

	eligible or VLR-listed architectural resources cannot be avoided or minimized such that impacts are no longer significantly adverse, then the applicant shall develop a reasonable and proportionate mitigation plan that offsets the significantly adverse impacts and has a demonstrable public benefit and benefit for the affected or similar resource. 3. If any identified VLR-eligible or VLR-listed archaeological site cannot be avoided or minimized to such a degree as to avoid a significant adverse impact, significant adverse impacts of the project will be mitigated through archaeological data recovery.	the view shed of another historic resource, placing a conservation easement on a historic resource, etc.
70	Site plan and context map requirements. A. The applicant shall submit a site plan that includes maps showing the physical features and land cover of the area within the site, both before and after construction of the proposed project. The site plan shall be submitted at a scale sufficient to show, and shall include, the following: (i) the boundaries of the site; (ii) the location, height, and dimensions of all existing and proposed wind turbines, other structures, fencing and other infrastructure; (iii) the location, grades, and dimensions of all temporary and permanent on-site and access roads from the nearest county or state maintained road; (iv) existing topography; and (v) water bodies, waterways, wetlands, and drainage channels. B. The applicant shall submit a context map including the area encompassed by the site and within five (5) miles of the site boundary. The context map shall show state and federal resource lands and other protected areas, historic resources, state roads, waterways, locality boundaries, forests, open spaces, and transmission and substation infrastructure.	A. The site plan should provide to DEQ and the public a clear idea of the chief features of the project site, including the size and placement of turbines. B. This provision requires submittal of a context map of the area extending 5 miles around the boundary of the site. Discreet natural resources often occur within a larger context, such as a watershed. The RAP wanted to ensure that DEQ and the public are aware of the larger context in which the proposed project will exist, and its possible effect within that “big picture.” Of special note is the inclusion of “forests” and “open spaces” as required aspects of the

		context map. The potential impact of the project on forested wildlife habitat is addressed in the analyses section of the proposed regulation. The Department of Forestry representative pointed out that the issue of forest fragmentation is a slightly different forest-related concern. Possible forest fragmentation will be reflected on the context map, and can be taken into account by the public and local government, among others. The same is true for converted farm land, a concern of the representative from VDACS. If the project entails development of former farm acreage, the map showing open spaces will make that fact clear.
80	Small wind energy project design standards. The design and installation of the small wind energy project shall incorporate any requirements of the mitigation plan that pertain to design and installation, if a mitigation plan is required pursuant to 9VAC15-40-50.	This provision clarifies that DEQ is interested only in the aspects of the project design that relate to mitigation. It should be clear to the public that DEQ is not guaranteeing the quality of the work or the credentials of the person doing the design. Nor will DEQ be involved in ensuring compliance of the design with any requirements other than mitigation. If, however, the applicant's mitigation plan involves such things as locating a turbine so as to avoid view shed impacts on a nearby historic resource, or to avoid a bat hibernaculum, DEQ will expect to see those adjustments reflected in the project design and will enforce them accordingly.
90	Public participation. A. Before the initiation of any construction at the small wind energy project, the owner or operator shall publish a notice once a week for two consecutive weeks in a major local newspaper of general circulation informing the public that he intends to construct and operate a project eligible for a permit by rule. No later than the date of newspaper publication of the initial notice, the owner or operator shall submit to the department a copy of this notice along with electronic copies of all	This section sets forth the requirements the applicant must complete for compliance with the statutorily-mandated public-participation on any project. The requirements are minimum requirements and are similar to those utilized for other DEQ permits by rule. DEQ decided to require the applicant to submit electronic copies of the documents that will be placed in a location near the proposed project -- documents that are required in support of the permit by rule application. This requirement should not be burdensome for the applicant, since all of these documents are likely to have been generated as electronic documents. It is increasingly the case that newspapers do not reach large segments of the public. DEQ will seek ways to make notice and application information available electronically for the

	documents in support of the application. The notice shall include: 1. A brief description of the proposed project and its location, including the approximate dimensions of the site, approximate number of turbines, and approximate maximum blade-tip height; 2. A statement that the purpose of the public participation is to acquaint the public with the technical aspects of the proposed project and how the standards and the requirements of this chapter will be met, to identify issues of concern, to facilitate communication and to establish a dialogue between the owner or operator and persons who may be affected by the project; 3. Announcement of a 30-day comment period in accordance with subsection D of this section, and the name, telephone number, address, and email address of the owner's or operator's representative who can be contacted by the interested persons to answer questions or to whom comments shall be sent; 4. Announcement of the date, time, and place for a public meeting held in accordance with subsection C of this section; and 5. Location where copies of the documentation to be submitted to the Department in support of the permit by rule application. B. The owner or operator shall place a copy of the documentation in a location accessible to the public in the vicinity of the proposed project. C. The owner or operator shall hold a public meeting not earlier than 15 days after the initial publication of the notice required in subsection A of this section and no later than seven days before the close of the 30-day comment period. The meeting shall be held in the locality or, if	benefit of the public. 1. This brief description will allow the public and interested persons that track all such developments the ability to discern, at a glance, whether it needs to be concerned about the proposed wind energy project.

	the project is located in more than one locality, in a place proximate to the location of the proposed project. D. The public shall be provided at least 30 days to comment on the technical and the regulatory aspects of the proposal. The comment period shall begin on the date the owner or operator initially publishes the notice in the local newspaper. E. For purposes of this chapter, the applicant and any interested party who submits written comments on the proposal to the owner's or operator's representative during the public comment period, or who signs in and provides oral comments at the public meeting, shall be deemed to have participated in the proceeding for a permit by rule under this chapter and pursuant to Section 10.1-1197.7 B of the Code of Virginia.	D. It may be difficult for members of the public to understand that their comments should be limited to the technical and regulatory aspects of the proposal. Those aspects are delineated in DEQ's permit by rule. Comments on factors beyond the scope of the 2009 statute and the permit by rule are not within DEQ's authority to address. Those comments should be directed to the local government or to whoever has authority over the issues. E. The RAP recognized that, for legal purposes, it is important to define clearly who has participated in the public comment period and therefore has the right to appeal DEQ's case decision under the Administrative Process Act. This provision seeks to do that. Persons, for instance, who chat with the owner's representative out in the hall at the public meeting have not met the requirement.
100	Change of ownership, project modifications, termination. A. Change of ownership. A permit by rule may be transferred to a new owner or operator if: 1. The current owner or operator notifies the department at least 30 days in advance of the transfer date by submittal of a notice per subdivision 2 of this subsection; 2. The notice shall include a written agreement between the existing and new owner or operator containing a specific date for transfer of permit responsibility, coverage, and liability between them; and 3. The transfer of the permit by rule to the new owner or operator shall be effective on the date specified in the agreement mentioned in subdivision 2 of this subsection.	This section establishes requirements for permit by rule revisions such as change of ownership, modifications and permit terminations. The provisions of subsection C.3 are required by the Administrative Process Act when DEQ terminates a permit.

	B. Project modifications. Provided project modifications are in accordance with the requirements of this permit by rule and do not increase the rated capacity of the small wind energy project, the owner or operator of a project authorized under a permit by rule may modify its design or operation or both by furnishing to the department new certificates prepared by a professional engineer, new documentation required under 9VAC15-40-30, and the appropriate fee in accordance with 9VAC15-40-110. The department shall review the received modification submittal in accordance with the provisions of subsection B of 9VAC15-40-30. C. Permit by rule termination. The department may terminate the permit by rule whenever the department finds that: 1. The applicant has knowingly or willfully misrepresented or failed to disclose a material fact in any report or certification required under this chapter; or 2. After the department has taken enforcement actions pursuant to 9VAC15-40-120, the owner or operator persistently operates the project in significant violation of the project's mitigation plan. 3. Prior to terminating a permit by rule pursuant to subdivision 1 or 2 of this subsection, the department shall hold an informal fact-finding proceeding pursuant to § 2.2-4019 of the Virginia Administrative Process Act in order to assess whether to continue with termination of the permit by rule or to issue any other appropriate order. If the department determines that it should continue with the termination of the permit by rule, the department shall hold a formal hearing pursuant to § 2.2-4020 of the Virginia Administrative Process Act. Notice of the formal hearing shall be delivered to the owner or operator. Any owner or operator whose permit by rule is	

	terminated by the department shall cease operating his small wind energy project.	
110	Fees. A. Purpose. The purpose of this section is to establish schedules and procedures pertaining to the payment and collection of fees from any applicant seeking a new permit by rule or a modification to an existing permit by rule for a small wind energy project. B. Fee payment and deposit. Fees for permit by rule applications or modifications shall be paid by the applicant as follows: 1. Due date. All permit application fees or modification fees are due on submittal day of the application or modification package. 2. Method of payment. Fees shall be paid by check, draft or postal money order made payable to "Treasurer of Virginia/DEQ," and shall be sent to the Department of Environmental Quality, Receipts Control, P.O. Box 10150, Richmond, VA 23240. 3. Incomplete payments. All incomplete payments shall be deemed nonpayments. 4. Late payment. No application or modification submittal will be deemed complete until the department receives proper payment. C. Fee schedules. Each application for a permit by rule and each application for a modification of a permit by rule is a separate action and shall be assessed a separate fee. The amount of the permit application fee is based on the costs associated with the permitting program required by this chapter. The fee schedules are shown in the following table: Type of Action Fee Permit by rule application (including $16,000	The RAP asked DEQ to develop appropriate fee schedules in compliance with the 2009 statute and in keeping with the anticipated actual costs the agency will incur in administering the permit program. The provisions are DEQ's best calculation of what the fees need to be. The procedures for payment are those used in other DEQ regulations. Included in the initial fee are DEQ's anticipated costs for processing the permit application and for working with the owner/operator during the first three years of post-construction operation and monitoring, when the most effective curtailment strategies for bat-fatality avoidance are being developed. The owner/operator may propose amendments to the wildlife mitigation plan based on these initial three years of operation and monitoring without incurring an additional fee. Changes after the first three years will be handled as a permit modification, and a fee charged accordingly.

	first 3 years of operation) Permit by rule modification (after first three years of operation) $5,000 D. Use of fees. Fees are assessed for the purpose of defraying the department's costs of administering and enforcing the provisions of this chapter including, but not limited to, permit by rule processing, permit by rule modification processing, and inspection and monitoring of small wind energy projects to ensure compliance with this chapter. Fees collected pursuant to this section shall be used for the administrative and enforcement purposes specified and as specified in § 10.1-1197.6 E of the Code of Virginia. E. Fund. The fees, received by the department in accordance with this chapter, shall be deposited in the Small Renewable Energy Project Fee Fund. F. Periodic review of fees. Beginning July 1, 2012, and periodically thereafter, the department shall review the schedule of fees established pursuant to this section to ensure that the total fees collected are sufficient to cover 100 percent of the department's direct costs associated with use of the fees.	
120	Internet accessible resources. This chapter refers to resources to be used. These resources are available through the internet; therefore, in order to assist the applicants, the uniform resource locator or internet address is provided for each the references listed in this section. A. Internet available resources. 1. The Virginia Landmarks Register, Virginia Department of Historic Resources, 2801 Kensington Avenue, Richmond, Virginia. Available at the following internet address: http://www.dhr.virginia.gov/registers/regist	Provided to assist applicants as the resources are available through the internet.

	er.htm. 2. Professional Qualifications Standards, the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, as amended and annotated (48 FR 44716-740, September 29, 1983), National Parks Service, Washington, DC. Available at the following internet address: http://www.nps.gov/history/local-law/arch_stnds_9.htm. 3. Invasive alien plant species of Virginia, Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, Virginia. Available at the following internet address: http://www.dcr.virginia.gov/natural_heritage/invspinfo.shtml . 4. The Natural Communities of Virginia, Classification of Ecological Community Groups, Second Approximation, 2006, Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA. Available at the following internet address: http://www.dcr.virginia.gov/natural_heritage/ncintro.shtml. 5. Virginia Outdoors Plan, 2007, Virginia Department of Conservation and Recreation, Richmond, Virginia. Available at the following internet address: http://www.dcr.virginia.gov/recreational_planning/vop.shtml. 6. Virginia's Comprehensive Wildlife Conservation Strategy, 2005, Virginia Department of Game and Inland Fisheries, 4010 West Broad Street, Richmond, Virginia. Available at the following internet address: http://www.bewildvirginia.org/wildlifeplan/. B. Internet applications. 1. Coastal GEMS application, 2010, Virginia Department of Environmental Quality. Available at the following internet	

	address: http://www.deq.virginia.gov/coastal/coastalgems.html. NOTE: This website is maintained by the department Assistance and information may be obtained by contacting Virginia Coastal Zone Management Program, Virginia Department of Environmental Quality, 629 E. Main Street, Richmond, Virginia 23219, (804) 698-4000. 2. Natural Landscape Assessment, 2010, Virginia Department of Conservation and Recreation. Available at the following internet address: for detailed information on ecological cores go to http://www.dcr.virginia.gov/natural_heritage/vclnavnla.shtmland maps may be viewed at DCR's Land Conservation Data Explorer Geographic Information System website at http://www.vaconservedlands.org/gis.aspx. NOTE: The website is maintained by DCR. Actual shapefiles and metadata are available for free by contacting a DCR staff person at vaconslands@dcr.virginia.gov or DCR, Division of Natural Heritage, 217 Governor Street, Richmond, Virginia 23219, (804)786-7951. 3. Fish and Wildlife Information Service or Wildlife Environmental Review Map Service, 2010, Virginia Department of Game and Inland Fisheries. Available at the following internet address: http://www.vafwis.org/fwis/. NOTE: This website is maintained by DGIF and it does require registration for use. Assistance and information may be obtained by contacting DGIF, Fish and Wildlife Service, 4010 West Broad Street, Richmond, Virginia 23230, (804)367-1000.	
130	Part III Notification Provisions Small wind energy projects less than 5	This section details the notification provisions

	megawatts. The owner or operator of a small wind energy project with a rated capacity equal to or less than 500 kilowatts is not required to submit any notification or certification to the department. The owner or operator of a small wind energy project with a rated capacity greater than 500 kilowatts and less than 5 megawatts shall notify the department by submitting a certification by the governing body of the locality or localities wherein the project will be located that the project complies with all applicable land use ordinances and applicable local government requirements.	for community-scale and residential-scale projects. Full discussion of the rationale for notification provisions for these types of projects is provided in the alternatives section of this document.
140	Part IV Enforcement Enforcement. 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: 1. Issue directives in accordance with the law; 2. Issue special orders in accordance with the law; 3. Issue emergency special orders in accordance with the law; 4. Seek injunction, mandamus or other appropriate remedy as authorized by the law; 5. Seek civil penalties under the law; or 6. Seek remedies under the law, or under other laws including the common law.	DEQ will enforce the provisions of these regulations and the wind permit by rule the same way it enforces other regulatory provisions and permits. The 2009 statute includes an extensive section on enforcement, which is incorporated by reference into the proposed regulation. The statutory provision encompasses DEQ's relevant enforcement tools and procedures. These statutory provisions are further fleshed out in this section, with language the public is accustomed to seeing in other DEQ regulations.

DIBR	DOCUMENTS INCORPORATED BY REFERENCE (9VAC15-40) The Natural Communities of Virginia, Classification of Ecological Community Groups, Second Approximation, 2006, Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA. Virginia Outdoors Plan, 2007, Virginia Department of Conservation and Recreation, Richmond, Virginia. Virginia's Comprehensive Wildlife Conservation Strategy, 2005, Virginia Department of Game and Inland Fisheries, Richmond, Virginia.	

Acronyms and Definitions

Please define all acronyms used in the Agency Background Document. Also, please define any technical terms that are used in the document that are not also defined in the "Definition" section of the regulations.