DEQ Wind Energy Regulatory Advisory Panel (Wind RAP)
July 22, 2009 Meeting
Final Meeting Notes

Location: **DEQ Central Office, 2nd Floor Conference Room**
629 E. Main Street, Richmond, VA 23219

Start: 9:45am
End: 4:03pm

RAP Lead/Facilitator: Carol Wampler, DEQ
Recorder: Debra Miller, DEQ

RAP Members Present:
John Davy, DCR (alternate)
David Phemister, TNC (alternate)
Larry Jackson, Appalachian Power
Stephen Versen, VDACS
Tony Watkinson, VMRC
Jayme Hill, Sierra Club–VA Chapter
Dan Holmes, Piedmont Env Council
Tom Smith, VDCR
James Golden, DEQ
Judy Dunscomb, TNC
Ronald Jenkins, DOF
Mary Elfner, Audubon
Bob Bisha, Dominion
Julie Langan, DHR
Larry Land, Virginia Assoc. of Counties
Ken Jurman, DMME
Ernie Aschenbach, DGIF (alternate)
Theo de Wolff, Seawind
Jonathan Miles, JMU

RAP Members Absent:
Nikki Rovner, Deputy SNR
John Daniel, Troutman Sanders

Guests/Speakers:
David Paylor, DEQ Director
Stephen Walz – DMME/Governor's Office
Roger Chaffe, OAG
Cindy Berndt, DEQ
Mike Murphy, DEQ

Public Attendees:
Lucille Miller, Highlanders for Responsible Development
Ken Hutcheson, Virginia Alterative & Renewable Energy Association
Laura Rose, Old Dominion Electric Coop

Agenda Item: Introductions

Discussion Leader: Carol Wampler, RAP Leader
Discussion:
The RAP members and other attendees were welcomed and asked to introduce themselves and provide some information on their background/interest regarding wind energy. After the introductions, RAP members were thanked for their services.

Agenda Item: Welcome & Project Vision – David Paylor, DEQ Director

Discussion Leader: David Paylor, DEQ Director
Discussion:
Thoughts on why we are here regarding energy policies intersect with environmental issues were provided. From the standpoint of sustainability, need to be creating incentives for a balanced energy portfolio. It was noted that this was not legislation that DEQ sought and not a traditional area for DEQ. Most of the things that will be on this RAP do not fall into areas that DEQ has expertise on, such as historic resources, wildlife,

agriculture, forestry, and others. However, as a permit program is being created for this, then it was sent to DEQ. This is a challenge as the legislature has asked us to do this as a permit by rule. Permit by rule is an expedited permit process as the requirements are within the regulations and there is a certainty associated with the process. Permits by rule have traditionally been used for projects that have generic qualities to them. There will be siting issues for this process in order to protect our natural resources. This will require all of us to think hard about how we will protect our resources. And there is the overall larger environmental consideration as well because this is a move toward renewable energy which is good for our environment. To that end, there is some caution that this group does not get caught up in extraneous issues, but to focus on what needs to be protected. Because there are diverse resources that are to be protected, this regulation will not fall under any of DEQ's citizen boards authorities. So this process will be through the DEQ Director and will need to rely heavily on the advice from this RAP which represents a diversity of expertise and perspectives and that is how to make good public policy. However, there is a very short timeframe for this effort. The project vision discussion was summed up with twin goals of:

1. Protecting our resources; and
2. Develop a process that provides some certainty and expedition to those that are stepping up to the plate to provide a more balanced energy portfolio for our citizens, in this case wind energy projects.

That is why legislature chose a permit by rule process. It was noted that there will be other RAPs for the other renewable energy projects, but the General Assembly determined that wind energy should be addressed first. However, the work done on this Wind RAP will likely have significant application to the other projects as well. Also there will be coordination with the SCC since the SCC still has a role in the process for some permittees. The discussion was concluded with a brief overview of the regulatory process and why there is a need for so much work and frequent meetings in such a short timeframe for this RAP.

Agenda Item: Virginia's Energy Policies

Discussion Leader: Stephen Walz, Senior Advisor for Energy Policy to the Governor

Discussion:

This discussion centered on the energy policy picture in Virginia and how the work of this Wind RAP may fit into this context. Virginia did not historically have an energy policy and most energy decisions were based on one consideration, to provide plentiful low cost energy. Utility regulation was based on providing a reliable supply and keeping the cost as low as possible. So natural gas and coal have met these criteria of low cost and reliable supply; and, with that, the demand for natural gas and energy overall has continued to increase. In the mid-2000s, the demand for natural gas and energy overall started to catch up with supply, and in 2005, the hurricanes brought the issue of cost into focus with prices of natural gas jumping six fold and the fact that they have never come down to the pre-2005 prices. At same time, the Manufacturing and Development Commission was looking at the price of energy and natural gas, and recommended that the Commonwealth should have a broad energy policy and an energy plan. This led to the 2006 Commonwealth Energy Policy (Virginia Administrative Code, Title 67), and the Virginia Energy Plan. The Energy Policy includes energy policy statements and objectives. These policy statements will also help inform the work of this group. The Commonwealth Energy Policy supports research and development, promotes the use of renewable energy, and supports energy that does not contribute to greenhouse gases. This policy also looks to balance energy generation and to ensure that location of energy generation and delivery systems in a manner to minimize impacts to pristine natural areas and other significant onshore natural resources and to be as near to compatible development as possible. The legislation recognizes the tension between energy production and the environment. Based on this legislation, the Virginia Energy Plan was developed and was released in 2007.

The Virginia Energy Plan establishes four broad goals:

- The first goal calls for increased energy independence through expanded conservation and efficiency, and increased in-state energy production. The conservation and efficiency actions could reduce the growth rate of energy use by 40 percent, resulting in a leveling of per-capita energy use

over time. The Plan calls for increasing in-state energy production by 20 percent through expanded production of traditional, renewable, and biofuel sources.

- The Plan calls for expanded consumer education on energy use. Increased educational efforts will arm citizens with the information they need to make smart decisions about how they use energy.
- The Plan recognizes that energy policy and environmental policy have become closely intertwined, setting a target to reduce 2025 baseline greenhouse gas emissions by 30 percent. The Plan also recommends the creation of a Climate Change Commission, which would assess the level of Virginia's carbon emissions, assess what the consequences might be for Virginia if climate change is not addressed, and address what other actions Virginia should take to meet this goal.
- The Plan also sets a goal to capitalize on economic development opportunities and increase research and development in four strategic areas – nuclear technologies, alternate transportation fuels, coastal energy production, and carbon capture and storage.

These goals look to move Virginia more closely toward energy independence through efficiencies and increase in the use of state indigenous energy resources by 20% over the ten year term of the plan. There is a priority toward clean energy with "clean" focused on avoidance of air emission. Regarding wind energy, the plan notes that onshore wind should be developed after local government approval and the finding that bat, avian and advanced species are not materially affected. It recognizes there is an effect from energy generation. Early projects should include post-construction testing to identify avian and bat impacts. It was noted that the reduction by 2025 of baseline greenhouse gas emissions by 30% was going to be very difficult as conservation and efficiency steps would only get us half way to 30%. So this lead to the recommendation that there be more review of this issue and recommended the creation of Commission on Climate Change, which was created by Executive Order 59. This commission recognized that climate change can lead to significant impacts on Virginia's ecosystem so there is a need to move to cleaner renewable energy generation that does not generate greenhouse gases. The Commission looked at existing authorities to see how we can address climate change. That is another of the policy concepts behind HB 2175 and SB 1347. Commissioners also called for an increase in energy generation to meet the growing demand through renewable resources, such as solar and wind. Other legislation recommended a number of actions that also direct energy policy with wind energy considered the highest level of renewable resources. From a policy perspective, the legislature and executive branch have been clear in their direction of renewable power and that is the policy framework. And this brings us to passage of HB 2175 and the SB 1347. Basic purpose of the bill is to streamline the permit process and encourage development of renewable energy. A couple of points that set the policy concept is that the PBR is to be available but it also considers significant adverse impacts to wildlife or historic resources and that the bill is not intended to override other environmental permitting requirements.

Why this important? It signifies the intended balance point between energy and environmental policy and recognizes that there is some level of environmental impact from energy production. It further defines what it calls a small renewable energy project as not exceeding 100 MW. And looking at that definition also gives some clue to what this group can consider as significant adverse impacts. It cannot be assumed that these impact limits will be applicable to larger projects which may have larger impacts. This group will set guidelines for these smaller projects and set limitation that can be reasonably met by projects not exceeding 100 MW. If the standards that are set cannot be reasonably met, then the RAP has not met the intent of the law. Lastly, but as important, is the timeframe to do this work. It is to be done quickly and with a sense of urgency. This is being driven by potential wind projects and interested parties looking to see what will be developed.

The RAP then asked questions regarding the background of Virginia's energy policies that address both energy generation/demand and resource protection. This legislation is looking to use indigenous resource

and conservation of energy use. It was again clarified that this group needs to look at setting a framework that will balance the lower and upper standards necessary for these small wind energy projects.

Agenda Item: Overview of Wind Issues

Discussion Leader: Jonathan Miles, JMU (RAP Member)

Discussion:

Prior to the presentation, it was noted that the Wind RAP will be presented information on wildlife issues at its August 6th Meeting.

The wind issues presentation provided an overview of wind energy (aka Wind 101) and looked at the wind resources in Virginia which are very complicated and in many cases, have to be looked at in a site specific capacity. Jon Miles's presentation will be sent separately to the Wind RAP members for future reference.

During and following the presentation, fellow RAP members asked questions regarding the wind resources. It was noted that wind technology has developed into a highly reliable energy resource and is becoming more and more a part of the power grid. Issues regarding intermittency were addressed. It was noted that wind resource peaks do not often coincide with demand peaks. Wind peaks in winter and afternoon while demand peaks are usually summer and evening on the east coast. Only California has the balance of wind resource peak and energy demand peak. The discussion also noted that wind is not the entire energy solution; it can only be part of the solution due to wind's intermittent capacity. The added cost to integrate wind into the power grid was discussed which is dependent on the distribution network available.

A question on wind patterns led to further discussion on the wind resource issue. For onshore wind in Virginia, the higher the elevation, the better the wind resource. Different terminology was presented such as: net-metered - meter between wind turbine and energy grid, used mainly for residential up to 10kW and some commercial up to 500kW; grid connected or grid-tie – there is no meter in between and the wind generator is tied directly in to the power grid; nameplate capacity is the rated maximum output for the turbine under prefect wind conditions and operation; capacity factor is the ratio of the actual output of a wind plant over a year and its output if it had operated at full nameplate capacity the entire time. For onshore wind, 33-37% is pretty good. The main point is that there is a proliferation and growth in the wind power sector in the USA and it is continuing.

The discussion then turned to the DOE Wind Energy Program with a goal that the US will reach 20% of its power being generated by wind energy. DOE is investing to achieve 20% wind penetration into the energy market. Virginia is recognized as high priority wind state as Virginia has wind resource, especially offshore as it is one of ten states with shallow-water resource (less than 100 feet) base near demand areas, and has not had much growth in developing wind energy to date. To assist in this development, initiatives, including this group, are under way (see http://www.cisat.jmu.edu/cees/windpowerva/).

ACTION ITEM – Jon Miles - Send guidance and GIS information to Carol for distribution to the Wind RAP.

Additional discussion centered on the state of the technology for wind turbines. Wind technology has advanced over the last twenty years. Currently, there is development of Class 3 technologies. Horizontal axis spin wind turbines are just not commercially viable at this point mainly because wind increases with higher heights and at ground level there is more turbulence.

ACTION ITEM – Jon Miles – Do an analysis of how good the wind/shallow water are within 3 miles offshore and provide information to Carol for distribution.

The Wind RAP adjourned for lunch at 12:15pm and returned to the meeting at 1:00pm.

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Agenda Item: Case Study of a Wind Project
Discussion Leader: Theo de Wolff, Consultant (RAP Member)
Discussion:
Theo de Wolff provided an overview of an actual wind project. His presentation will be sent separately to the Wind RAP members for future reference. This presentation discussed the Sumerset County, Pennsylvania, permit case history.

It was noted that over the last five years, turbine manufacturing has moved to US. In Roanoke, Virginia, GE is making controls for turbines. Wind energy is becoming a bigger part of energy mix. Of all the new capacity put on line last year, 40% of this new capacity was from wind power, and compared to Europe, the USA has more growth potential.

Wind Energy in VA – onshore the potential is close to 1800 MW while offshore the potential is 6500 MW. Onshore is also limited by the availability of land as wind turbines are big structures of ~400 feet. With wind resource in Virginia, visibility will be a big impact for consideration. Another reason for the current low level of wind energy project development in Virginia is that the permitting process was complex and very capital intensive compared to other states like Pennsylvania, and in the past, not many legislative drivers (26 other states that have RPS). With its 6500 MW potential, there will be more offshore capacity than onshore in Virginia.

The presentation also discussed the key components of the development process (siting, land acquisition, engineering studies, visual impact studies, interconnection feasibility, permitting issues) and construction. The development process can take 36 to 72 months. The RAP then asked about the noise issues, it was noted that most developers stay 1200-1500 feet away from residences because at 1000 feet the noise is about 40 dB. If there is a ridge line and a residence on leeward side of the ridge, the project may need more distance from the residence. Another issue that was discussed was shadow flicker (caused by the rotating blades casting a "flickering" shadow). Flicker studies determine if residences will be impacted by these shadows. Discussion of the roads and maintenance (wind turbines have two inspections per year as scheduled maintenance) and normally need one crew for every 20-30 turbines. Decommissioning was discussed and the RAP was informed that is normally addressed in permits/leases/sometimes ordinances. After 30 years, turbines will need more maintenance. The economic models are done for 25 years. The first projects in California and Europe are being repowered (take out old turbines and put new technology).

Post construction, the sites are restored after construction. For leased areas, in many cases, land is used for agriculture. There a good symbiotic relationship between wind energy and agriculture/farming. The issue of shallow water towers was discussed and it was noted that the tower is extended to the sea bed and filed into the ground; that is why they are more economical over deeper water areas.

Agenda Item: Guidelines & Procedures
Discussion Lead: Cindy Berndt, Director, DEQ Office of Regulatory Affairs
Discussion:
Freedom of Information Act (FOIA), the regulation development process, and the guidelines for RAPs were discussed. It was noted that the RAP is a public body under FOIA and all meetings are to be noticed (DEQ will take care of that). So all RAP and subcommittee meetings will be held in a public forum and noticed. It was noted that everything that DEQ has is a public record unless deemed attorney client privilege if legal advice is needed. However, DEQ is the custodian so DEQ will handle the FOIAs. The RAP members were cautioned that emails are public records and to make sure that Carol and Cindy get copies, and to respond only to Carol when replying to emails (do not respond to all). Additionally, RAP members were cautioned to not email more than one other RAP member. Whenever more than two RAP members are communicating, then that communication is deemed a "meeting" and must be public noticed.

For this regulation, the standard rulemaking process will be followed. There will be a NOIRA with public comment, proposed regulation with public comment, and final regulation with notice. We are on a short time frame as normal rulemaking is 18-24 months or longer, and for this regulation, there is an effective date deadline of January 1, 2011.

Highlights of the guidelines that were already sent to the RAP were discussed. The key is that DEQ would like consensus recommendations from the Wind RAP. Questions regarding the group's function were discussed. It was noted that after the proposal, the group is done – but may be reconvened for a meeting after public comment, if necessary. The final product of this group will need to be something that can be turned into regulation text (thou shalts/shalt nots).

Main point to the RAP, if there are any questions, please ask DEQ staff.

The goals of the RAP guidelines were again highlighted with consensus being stressed and the issues with how the RAP meetings were presented including how the public can address the RAP. This process is described in the addendum to the RAP guidelines.

Agenda Item: Explanation of "Permit by Rule"

Discussion Lead: Debra Miller, Policy Analyst, DEQ Office of Regulatory Affairs

Discussion:

The RAP was presented a brief overview of the Solid Waste Program's Permit by Rule (PBR) process. Deb's presentation will be sent to the RAP for future reference. The regulations regarding the PBR process for solid waste storage/treatment facilities are outlined in 9 VAC 20-80-485. The RAP asked questions about the PBR process and fees. In the solid waste program, the permit fee is very low as the PBR process is just a completeness review that all the certifications and basic information are submitted. The annual fees are what fund ongoing compliance inspections. The scope of the review was further discussed, as the renewable energy bill indicates that there is to be site specific plans and studies done. This was followed with some discussion on how to deal with the issue. It was noted that the presented information was specific to the solid waste program. How to integrate these issues into the wind PBR is one topic that this RAP will need to discuss.

ACTION ITEM – Debra - Send the solid waste manual and regulation information on the PBRs to Carol for distribution to Wind RAP.

Agenda Item: Structure of RAP & Subcommittees

Discussion Lead: Carol Wampler, Wind RAP lead, DEQ

Discussion:

This discussion focused on the RAP structure and the subcommittees. It was noted that there are unique factors of what the task involves. The factors are to facilitate permitting and to protect resources. A lot of the work is going to involve the proper balance between these two. What this group is now tasked with is dealing with the criteria for these projects -- information that formerly went to the SCC -- and then put these criteria/requirements into regulation. This legislation removes some of the environmental-review authority from SCC and places it with DEQ to develop a PBR process for these projects. This PBR will need to include what is needed for these projects and not a site by site analysis. These "needs" are now to be specified upfront so that the costs can be calculated when developing these projects. The criteria are known up front, understandable, and consistent. Director Paylor has suggested that we might want to think of this as series of if/then loops.

This regulatory process is very unique because the "experts" are not in-house DEQ staff. These wind projects may involve endangered species, historic resources, ecosystem impacts, etc. That is why some of you have been selected to make sure that this regulation will include the information/requirements needed by your agency.

The RAP members asked about starting each email with the same subject line start and/or setting up a clearinghouse for the information that will be made available to the group. The emails will be standardized and DEQ will look into the clearinghouse.

The RAP members also asked about which environmental permits these projects will likely need to certify that they have obtained or applied for, under the statute. DEQ anticipates that the regulation will enumerate the likely permits in some form or fashion. The bill was discussed and the RAP noted concerns with some of the language requiring specificity and how to accommodate those types of requirements into a PBR. This will be the type of issues that the RAP will discuss. Each of the RAP members will need to be aware of what is required for their constituency/agency.

ACTION ITEM – Carol - Will send a short list of suggested preparations for those that will serve on the RAP (i.e., what you may need to do and know).

The use of the subcommittees was discussed. Subcommittees are necessary as there is no way to get through all of the issues. There will be four subcommittees:

1. Living Resources (species, wildlife, plant and insects, etc.)
2. Non-Living Resources or Land Use (view sheds, noise, flicker, farmland and forestland use)
3. General (miscellaneous, scope of the regulation, de minimus exemptions, procedures)
4. Offshore (dealing with those issues, some will be similar to onshore)

An email will be sent to the RAP to ask for their first and second choice for subcommittees. The subcommittees will define the issues and bring whatever cites and standards that are necessary into this picture. The offshore subcommittee will probably not be starting up immediately. The work of the RAP will be coordinated with the mapping of the VMRC, pursuant to direction from the two agency directors.

DEQ will send more information on the subcommittee process. Much of the specific procedures employed by the subcommittees will be left to the subcommittee chairs. The subcommittees will be asked to frame and narrow the issues and to formulate suggested standards (and provide substantiation for the appropriateness of the suggested standards), which will then be presented to the plenary RAP group. Once the subcommittees have done the "spade work," we hope that the plenary group can more effectively discuss the recommendations and seek to reach consensus positions for inclusion in the draft permit by rule.

Those RAP members who do not yet have alternates may name an alternate and provide that to Carol. She will forward these names to the director for approval.

It was noted that RAP members should use Carol's gmail account as well as her DEQ account when communicating.