Document 00021

December 10, 2004

Comments on the Bureau of Land Management's
Draft Programmatic Environmental Impact Statement (DPEIS) on Wind Energy
Development on BLM-Administered Lands in the Western United States

In summary, there are serious problems with the draft Programmatic Environmental Impact statement (PEIS). The comments that follow are focused primarily on the portions of the draft that deal with the economics of wind energy development.[1] The data and conclusions reflected in those parts of the draft are invalid because:

- Major elements of the true costs of producing and delivering electricity from wind energy have not been taken into account.
- The "economic model" underlying the economic analysis is defective.

It is important that Department of the Interior (DOI) and Bureau of Land Management (BLM) officials recognize that much of the information relied on by those drafting the statement has come from organizations that promote wind energy development.[2] This information is often biased and should not be relied on as a basis for BLM decisions.

The net effect of the deficiencies is that the draft PEIS grossly overstates the potential benefits of wind energy while grossly understating the true costs. In fact, it is far from clear that the PEIS justifies *any* development of wind energy on BLM-administered lands. Any conclusions in that regard will have to await correction of the fundamental deficiencies in the economic analysis.

DOI and BLM officials should also be aware that much of the information distributed during the past decade by the wind industry and other supporters of wind energy development is biased. However, as development of wind energy has occurred in US and other countries, problems with its development and facts about its true costs have begun to emerge.

Even a casual review of the literature about wind energy from around the world reveals information about problems caused and costs incurred when wind energy is developed. There does not appear to be any valid reason why those who have developed the draft PEIS should ignore the problems and the true costs and chose to rely on only the literature, economic models, and data that are favorable to wind energy development.

Clearly, DOI and BLM officials have a responsibility to act in the public interest, and not limit their consideration to information favorable to the development of wind energy. In particular, DOI and BLM officials should note that the draft PEIS largely ignores the interests of electricity customers and taxpayers who would bear the burden of higher cost of electricity from wind energy and taxpayers who would bear the burden paying for the tax breaks, other subsidies and other economic benefits achieved by "wind farm" developers and owners.

In addition to the primary focus on the economic deficiencies of the draft PEIS, the detailed comments that follow also mention one key safety problem that has been ignored and identify an omission in the sections on decommissioning. Further, DOI and BLM officials should be aware

that the two studies cited as justification for the draft PEIS conclusion that property values are not adversely affected by wind energy development have been publicly discredited because of deficiencies in methodology, assumptions and factors considered.

Before proceeding, BLM needs to do a complete and objective economic analysis, avoid reliance on biased information from wind energy advocates, and take into account the full, true environmental, energy and economic costs of wind energy development.

Detailed comments

A. **Economic Analysis Deficient**. The PEIS Executive Summary (page ES-1) states, in part, that "The objectives of the draft PEIS are to (1) assess the environmental, *social, and economic* impacts associated with wind energy development on BLM-administered land....." (Emphasis added). This certainly is a valid and necessary objective but it has not been pursued adequately in the PEIS. Critical deficiencies, as detailed below, include:
   - Failure to consider key elements of cost that would be borne by the public (particularly electric customers and taxpayers),
   - Reliance on "economic models" that are demonstrably flawed, including economic models developed by or for DOE's National Renewable Energy Laboratory (NREL).[3]

   The JEDI or Wind Industry Model developed for and distributed by NREL for use in calculating state or local economic impacts, which model is referred to in the draft PEIS is demonstrably deficient in that it grossly overstates economic benefits and understates some economic costs and ignores other real economic costs. Attachment #1 to these comments is a paper describing and demonstrating deficiencies and errors in that model. That paper should be considered an integral part of these comments on the BLM's draft PEIS

   BLM has an obligation to represent the public interest, not the interests of the wind industry or other wind energy supporters.

   1. **The concept of the *economic cost* of electricity from wind energy reflected in the PEIS is incomplete.** The wind industry and its supporters (including DOE[4] and NREL) typically ignore large elements of the full, true costs of electricity from wind energy and, unfortunately, this basic error has been perpetuated in BLM's draft PEIS. Only during the past year or two has the truth about the full, true costs of wind energy begun to emerge in public discussions.

      The true cost of electricity from wind energy borne by the public is NOT the price claimed by wind energy supporters OR that charged by "wind farm" owners. Key elements of the full, cost that are typically omitted (and not considered adequately in BLM's document) include the following:

      a. **Real costs ultimately borne by electric customers not considered in BLM PEIS, but which show up in monthly electric bills.**
         1) Backup power costs. Wind turbines produce electricity only when the wind is blowing in the right speed range.[5] Their output is intermittent, highly volatile

from minute to minute, and largely unpredictable (except in the very short term). Because of these limitations, reliable ("dispatchable") generating units must be kept immediately available to keep the grid in balance (supply-demand, voltage, frequency). These back up units must be running in automatic generation control (AGC) mode, at less than full or optimum capacity, or in spinning reserve mode.

Providing this backup power involves costs and those costs (in whole or part) are properly attributed to the cost of wind energy. Also, recognize that ramping generating unit output up and down tends to add to unit wear and tear cost on those backup units

2) Costs of providing reliable generating capacity. Because wind turbines cannot be counted on to be available when needed to satisfy electricity customer demand (that is, they have little, if any, "capacity value"), sufficient reliable generating capacity must be built and maintained to assure that adequate capacity is always available. This, too, involves costs for building and maintaining that capacity even if it is not fully utilized. Those costs must be recovered in some way and are almost certain to end up in monthly electric bills. Wind generating capacity does not replace the need for reliable generating capacity.

3) Higher cost of providing transmission capacity for electricity from wind turbines. Transmission costs are inherently higher for electricity from wind turbines for at least three reasons:
   - The first reason is due to the intermittence of wind generation. In practice, enough transmission capacity must be available to handle the full rated output of a "wind farm." However, that full capacity is not used efficiently and effectively because of the intermittent availability of the electricity output
   - The second reason is that windmills, because of their large size, noise and other factors, tend to be found acceptable in areas that are remote from populated areas. The practical effect is that electricity from wind is likely to have to travel over longer distances and, therefore, "line losses" tend to be higher than for generating units that are located near load centers.
   - The third reason is that areas where siting of windmills may be acceptable tend to be in areas where adequate transmission capacity is less likely to be available. At least two states (Minnesota and Texas, as well as other countries such as Denmark and Germany) have found it necessary to add expensive transmission capacity to serve "wind farms." Such costs are appropriately counted as part of the full, true cost of electricity from wind. In any case, these costs end up in electric customers' monthly bills even if this is not clearly admitted by the wind industry, regulators, or advocacy groups.

4) Grid management costs to maintain reliability. Because of intermittence, volatility and unpredictability, "wind farms" tend to detract from grid reliability and, therefore, require greater care to assure integration into electric grids. This is an additional cost factor.

5) Mandated "Renewable Portfolio Standards" (RPS) add to consumer costs. RPS requirements specify minimum shares of electricity that must come from "renewables" have been adopted by some states and applied to government buildings and activities in other states. Electricity from wind is inherently more costly than alternative existing sources of electricity. These costs are passed on to consumers. The fact that RPS create artificial, high cost markets also helps push up customers' costs.

6) "Green energy" programs mandated or encourage for electric utilities also add to electric customer costs. Typically, these programs provide that electric customers are to be given the option of purchasing "green" electricity – i.e., electricity produced from certain renewable energy sources – if they are willing to pay a premium price for that electricity.

   To the extent that customers volunteer to pay premium prices, there should be no objection. However, nationally less than 1% of the customers of 100+ electric utilities offering such programs "volunteer" to pay the premium prices. The premium revenue collected by the utilities is not enough to cover the utilities' costs of buying the high cost renewable-generated electricity and the cost of administering the programs. The result is that the costs that are not recovered through premium payments are passed on to all the utilities' customers, adding to their monthly bills.

b. **Real costs borne by ordinary taxpayers that have not been taken into account in BLM's draft PEIS "economic analysis."** Wind energy is now one of the most heavily subsidized sources of electricity in the US *when considered in light of its existing and potential contribution toward supplying US electricity requirements.*

   The tax breaks and other subsidies currently available for commercial-scale wind energy have led to a situation where the principle motivation for building "wind farms" is tax avoidance – not their environmental, energy or economic benefits. BLM should not be encouraging misallocation of resources. The federal, state and local tax breaks and other subsidies which run in the hundreds of millions annually include:

   1) Federal five-year double-declining balance accelerated depreciation (MACRS[6]) which permits "wind farm" owners to deduct 20% of the capital cost[7] of a "wind farm" from otherwise taxable income in the 1st tax year, another 32% in the 2nd tax year, and the remainder over the succeeding four tax years.[8]

2) A ten-year, $0.018 per kilowatt-hour (kWh) Production Tax Credit which permits the owners of "wind farms" or their parent companies to deduct additional millions of dollars each year from their tax liability.

3) In states that conform their corporate income tax system to the federal system, the five-year double declining balance accelerated depreciation also serves to reduce "wind farm" owners' income that would otherwise be subject to state corporate income tax. *This loss of revenue has not been taken into account in the BLM draft PEIS.*

4) Dozens of state and local government tax breaks, enacted in response to wind industry lobbyists, including (depending on the state) state production tax credits, reductions in or exemptions from business and occupation taxes, sales and use taxes, and state and local property taxes. In some states, some of the taxes have been eliminated and in others have been reduced substantially. *These losses of revenue have not been taken into account in the BLM draft PEIS.*

5) Direct DOE subsidies (via contracts, grants and subcontracts) for wind energy R&D and for wind promotional activities carried out by DOE "national laboratories," trade associations and numerous "non-government organizations" that have been created to promote expensive "renewable" energy. These, too, are a real economic cost and money involved almost certainly could have been used more effectively elsewhere, particularly if left in the private economy.

6) Similar state subsidies (e.g., in California), some of which are paid from appropriated funds and some provided from funds collected via consumers' monthly electricity bills and often labeled as "public benefit funds." These also are a real economic cost.

2. **The "economic analysis" in BLM's PEIS has another fundamental deficiency**. The higher true costs of electricity from wind energy – including the hidden costs for electric customers and taxpayers described above -- that less money is available for other uses and is, therefore, a net "drag" on those sectors of the local, state or national economy where those incremental funds would otherwise be spent or devoted to savings.

   For example, the higher true cost of wind energy borne by electric customers and taxpayers means that less money is available for other uses including, for residential customers, spending on food, clothing, shelter, medical expenses, education, and other purposes (e.g., spending in local hardware stores, dry cleaners and other retail establishments). Also, less money is available for savings.

B. **Claims of costs per kWh of electricity from wind generation distributed by the US Department of Energy (DOE) and DOE's NREL are not valid or reliable.** DOE, NREL, the wind industry and other wind advocates often distribute information purporting to show the costs per kWh of past, current and potential future wind turbine generation.

Apart from all the real costs that are excluded from the DOE and NREL calculations, it must be recognized that the DOE[9] and NREL numbers are not valid or reliable.

The principle reason the numbers are invalid, unreliable and, really, quite meaningless is that they are based on three assumptions that have no basis in fact; specifically:

- That the useful life of the wind turbines is known. Often it is assumed that the useful life will be 20 or 30 years. Keep in mind that "wind farms" require very large capital cost compared to other generating sources. In fact, there is no long-term experience with the large (1+ MW) turbines now being installed to predict their life expectancy. If those turbines turn out to have a useful life of 10 years rather than 20, the actual costs per kWh of the electricity they produce over the 10 years would be nearly double the cost estimates based on a 20 year useful life assumption.
- Actual costs of operating, maintaining, repairing and replacing wind turbines over their useful life is unknown for the same reason noted above; i.e., no long term experience. Some "wind farms" have experienced many unexpected turbine failure problems.[10]
- Actual performance – in terms of kWh output -- over their useful life is unknown, again, because there is no long term experience with today's turbines and blades. It is known that performance of wind turbines deteriorates over time for a variety of reasons, including blade fouling.

C. **BLM's PEIS does not adequately reflect the fact that electricity from wind turbines has less value than electricity from reliable generating sources and detracts from, rather than adds to, electric system reliability.** As pointed out above electricity form wind turbines is available only when the wind is blowing in the right speed range – with the result that the electricity produced is intermittent, volatile and largely unpredictable.[11]

Because of these limitations, wind turbines have little, if any, "capacity value" as that term is used in the electric industry and the *electricity has less real value than electricity from reliable generating units that can be called upon whenever needed to supply electricity users demands.*

Those responsible for assuring the reliability of electric systems and grids must assure that *reliable ("dispatchable") generating capacity is available at all times to satisfy electricity demands and keep control areas and grids in balance.* The practical effect of the limitations of wind energy is that reliable generating capacity must be built and available for use *even if wind turbines are built and are available at some times (when the wind is blowing at the right speed) and the reliable capacity is not fully utilized. The cost of building and maintaining the reliable capacity – which may not be used at full capacity or peak efficiency -- is also borne by electric customers, in addition to the high costs of the electricity from wind.*

D. **Overestimation of emission reduction impacts.** BLM's PEIS overestimates the potential reduction in emissions from fossil-fueled electric generation. For example, the draft PEIS does not reflect adequately the fact that emissions are produced when dispatchable fossil-fueled generating units continue to produce emissions when they are run in "spinning

reserve" mode or run at less than peak efficiency to "back up" intermittent, volatile, unpredictable output from wind turbines. BLM should not assume that each kilowatt-hour of electricity produced by a wind turbine offsets emissions associated with an equal number of kWh produced by a fossil-fueled generating unit. Furthermore, no emissions are offset if the electricity displaced by a wind turbine (if any) would have been produced by a hydropower generating unit. Also, any emissions that are avoided are far different if the electricity would have been produced by, for example, an efficient gas-fired combined cycle generating unit rather than an old coal-fired generating unit that does not yet meet new source performance standards.

E. **"Studies" relied on by BLM's draft PEIS to claim that property values are not adversely affected are invalid.** The draft PEIS cites two studies to justify its conclusion that property values are not adversely affected by construction of windmills in the area. Both studies funded and were prepared by organizations known to be advocates of wind energy development and both have been publicly discredited because of basic deficiencies in their methodology, assumptions and data. The fact that they have been discredited is no secret and should have been know to those developing the draft PEIS. Any assertion that the value of property, particularly residential property, near "wind farms" is not adversely affected in quite absurd.

F. **Those preparing the draft PEIS seem to have carefully ignored the growing literature that challenges the claims of the wind industry and other wind energy supporters, such as DOE-EERE, NREL, and NWCC and has largely ignored the interests of electric customers and taxpayers.** These comments from the introductory summary of these comments are repeated here so that they will not be overlooked when BLM officials undertake a more complete analysis that covers all the true costs and benefits of wind energy development.

G. **BLM's PEIS fails to consider a key decommissioning risk.** While the draft PEIS discusses some decommissioning issues, it does not deal adequately with a key economic risk associated with decommissioning. That risk is whether a financially viable and responsible owner will be available to carry out decommissioning and restoration responsibilities.

In particular, BLM officials need to be aware that:

1. **Most "wind farms" in the US are "owned" by Limited Liability Companies (LLCs),** many of which have only a single physical asset (i.e., the "wind farm") and, perhaps, a contract for the sale of some or all of the electricity for some period of time. When it comes time for decommissioning and restoration of lands affected the LLC or whoever owns the "wind farm" at the time may not have the financial resources to pay the costs involved and may resort to bankruptcy or other measures to escape liability.

2. **The tax incentives and other subsidies available from federal, state and local governments[12] are heavily "front-end" loaded, creating strong financial incentives for "wind farm" owners to sell or abandon the facilities once the value tax benefits**

and subsidies have been captured and/or when maintenance, repair and replacement costs begin to climb as facilities age. Note, for example, that the tax avoidance value of federal and state accelerated depreciation is fully captured in the first 6 tax years from start of operation, and the production tax credits are captured in the first 10 years.

3. **Assuring that money will be available to pay for decommissioning and restoration probably can be achieved only through cash bonds posted in advance of construction starts AND held by an independent third party.** Surety bonds probably will not provide adequate protection, particularly if periodic premium payments are required. Funds held in some sort of "trust" by the "wind farm" owner would not be secure because such funds would be part of the assets of the "wind farm" owner that would be available to all creditors in the event of bankruptcy.

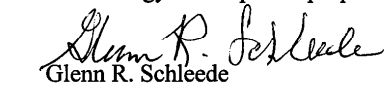
In summary, BLM regulations should require that full cash bonds, held by an independent third party, be posted before a permit is granted for a wind energy facility on BLM-administered lands.

H. **BLM's PEIS fails to consider at least one key public safety risk.** The draft PEIS does not deal with the need for safety standards for the components, construction and operation of wind turbines in cold climates. This problem has been faced in European countries but continues to be neglected in the Untied States. BLM rules should address this issue before additional wind turbines are permitted on BLM-administered lands.

One final comment: The draft PEIS reflects an underlying presumption that wind energy is environmentally and economically advantageous. This probably reflects the fact that key participants in the preparation of the draft are avid wind energy supporters or, perhaps, reflects the political decisions inherent in the current Administration's "Energy Plan." When preparing an EIS, BLM has an obligation to rise above both personal views and political objectives and strive for objectivity.

* * *

These comments are submitted in my role as a citizen, consumer and taxpayer and are not on behalf of any client or other interest. Nevertheless, BLM has a public interest responsibility to take them fully into account as it has in the case of the interests of the wind industry and other wind energy development proponents.



Glenn R. Schleede
18220 Turnberry Drive
Round Hill, VA 20141-2574

Attachment #1: Errors and Excess in the NREL's JEDI-WIM Model that Provides Estimates of The State or Local Economic Impact of "Wind Farms"

Endnotes:

[1] Sections 2-31; 4.10 and subsections 1-7; 5-13 and its subsections; Subsection 6.1.1, 6.1.3, 6.2.1, 6.2.3, 6.3, 6.4.1.13, and Appendix B.

[2] Much of the data relied upon by those drafting the statement does not meet the basic standards established by the Data Quality Act and OMB regulations implementing that Act. Use of any such data is unwarranted.

[3] It is critically important that BLM officials recognize that NREL cannot be relied on for objective analysis and information about the costs and benefits of wind energy. Undoubtedly, some at NREL carry on research and development activities that follow scientific methods and engineering principles. However, much of what NREL does "in-house" or under subcontracts – particularly that relating to wind energy -- is more akin to the activities of a trade association. That is, it collects and distributes information that is favorable to wind energy and ignores information that is unfavorable to wind energy. Would BLM be comfortable with basing its findings about oil on information from the American Petroleum Institute, or on coal from the National Mining Association?

[4] Particularly DOE's Office of Energy Efficiency and Renewable Energy – DOE-EERE.

[5] Today's turbines begin producing some electricity when wind is about 6 MPH, achieve rated capacity when wind speed is about 33 MPH, and cut out around 56 MPH to avoid equipment damage or destruction.

[6] MACRS = Modified Accelerated Cost Recovery System.

[7] Whether financed with debt or equity.

[8] During the period ending December 31, 2004, "wind farm" owners have been able to deduct 60% of capital costs in the first tax year, 16% in the second tax year and the remainder over the succeeding 4 tax years – because of a "bonus" depreciation provision which apparently has not been extended.

[9] For example, DOE's publication, "Windpowering America," graph on page 4. <http://www.eere.energy.gov/windandhydro/windpoweringamerica/pdfs/wpa/35873_21century.pdf>

[10] Iowa Department of Natural Resources, "Top of Iowa Wind Farm Case Study." http://www.state.ia.us/dnr/energy/MAIN/PROGRAMS/WIND/documents/topofiaWindFarmCaseStudy.pdf

[11] Except, potentially, during a few hours before the electricity is actually produced and wind conditions can be predicted with some accuracy. These are well known facts and are widely acknowledged in the literature and demonstrated repeatedly.

[12] Described earlier in these comments.

Attachment #1

Errors and Excesses in the NREL's JEDI-WIM Model that Provides Estimates of the State or Local Economic Impact of "Wind Farms"

Includes

A demonstration of the NREL Model's Overestimates -- Using the Example of a "Wind Farm" proposed for Highland County, Virginia

By

Glenn R. Schleede
Reston, Virginia

April 28, 2004

Errors and Excesses in the NREL's JEDI-WIM Model that Provides Estimates of the State or Local Economic Impact of "Wind Farms"

- Contents -

Page

Introduction and Summary 1

Fundamental errors underlying NREL's JEDI-WIM model assumptions 1

1. Errors resulting in overestimation of state and local economic benefits 2
   a. Overestimating the number of jobs that will be created and filled by local residents 2
      1) During construction 2
      2) Permanent jobs 2
   b. Overstating local economic benefits by counting full price of goods and services rather than value added 2
   c. Overstating local value of land rental payments 2

2. Failure to consider costs that offset benefits 3
   a. Counting state and/or local taxes without counting costs incurred by state and local governments because a "wind farm" is constructed 3
   b. Potential adverse impact on environmental, ecological, scenic and property values, business income and other factors because of existence of a "wind farm" 3
   c. Higher electricity costs imposed on electric customers via their monthly bills 3

Testing the Extent of NREL's Model Overestimation of Economic Benefits 4

Details of the Analysis that Demonstrates the NREL model's overestimation of local Economic Benefits - Using the potential Highland County, VA, "wind farm" 5

Results from the Demonstration 6

Principal Conclusions 7

Author 7

Endnotes 7

Attachment:
First and second page – Summary notes; project descriptive data and other model inputs
Third page – Wind plant project data summary and local economic impact summary results

April 28, 2004

Errors and Excesses in the NREL's JEDI-WIM Model that Provides Estimates of the State or Local Economic Impact of "Wind Farms"

Introduction and Summary

One of the US Department of Energy's (DOE) national "laboratories,"[1] NREL, has developed and begun promoting a "wind farm" "Jobs and Economic Development Impact" (JEDI) model, also referred to as the "Wind Impact Model" (WIM). This interactive model purports to permit calculating the state or local economic impact resulting from building a potential "wind farm."[2]

The model is designed to estimate job and economic benefits by (i) using various "default" assumptions provided in the model or (ii) changing those default assumptions to fit better the facts for a particular "wind farm."

As detailed below, anyone using the model should recognize that:

- Acceptance of the "default" assumptions would produce unrealistically high estimates of economic benefit for a state or locality, in both potential jobs and potential economic activity.
- Key factors affecting net state or local economic benefits and costs that offset benefits are not reflected in the model and, if taken into account, would further reduce the net local economic benefits.

To show the extent of overstated economic benefits, this paper includes a demonstration of the model that permits comparing results when using NREL's "*default*" *assumptions* with the results when using *more realistic assumptions*. A potential "wind farm" in Highland County, Virginia, is used for the demonstration.

In summary:

- The demonstration using JEDI-WIM shows that NREL's "default" recommendations produces estimates of local economic benefits and jobs that are more than 200% higher than estimates based on more reasonable assumptions.
- If costs resulting from a "wind farm" – which are ignored by the JEDI-WIM model -- were taken into account by the model, those costs would almost certainly exceed benefits.

Fundamental errors underlying NREL's JEDI-WIM model assumptions

As detailed below, there are two types of fundamental errors reflected in NREL's JEDI-WIM model:

- The first type of error, discussed in paragraph 1, below, is in the "default" assumptions that result in gross *overestimation* of local economic benefits. Errors in the assumptions affect calculations of "direct" benefits as well as claimed "indirect" and "induced" job creation and other economic benefits.
- The second type of fundamental error, discussed in paragraph 2, below is failure to consider the *costs* that would result from having a "wind farm in the state or locality.

1. **Errors Resulting in Overestimation of State and Local Economic Benefits.** These errors include:

   a. **Overestimating the number of jobs that will be created and filled by local residents.**[3] These overestimations occur at both the construction and permanent operation states.

      1) **During Construction**. Experience at other "wind farms" demonstrates that few jobs during construction are filled by local residents. In fact, most are filled by imported workers. For example, data on the 80-megawatt Top of Iowa "wind farm" (consisting of eighty-nine 900 kW turbines collected by the Iowa Department of Natural Resources (DNR) indicates that only 20 of 200 jobs created during the construction period (which lasted about 6 months) were filled by local people.[4]

      This low number of jobs for local workers is quite understandable since workers with specialized skills required during construction – such as erection of towers, installing turbines and electronic controls – often would not be available locally.

      2) **Permanent jobs.** The default assumptions in the JEDI-WIM overstate both the total number of permanent jobs that would be created and the number of these jobs that would be filled by local residents -- rather than by workers who would travel to the site (e.g., technicians skilled in repairing and maintaining turbines, electronic equipment) only when needed, rather than remaining in the area continually. The Top of Iowa "wind farm" with 89 turbines apparently requires fewer permanent employees that NREL's model would assume for the 30 turbine Highland County project.

   b. **Overstating local economic benefit by counting full price of goods and services rather than value added.**[5] The "default" values in JEDI model incorrectly assume that the full price paid by the "wind farm" owners or employees for goods and services purchased in a state or locality results in a state or *local* economic benefit.[6]

      Specifically, the default values are incorrect because they ignore the fact that part – generally a large part -- of the price paid to a local supplier has to be paid out by that local supplier to someone else, often located outside the local area. The money paid out is a part of the local supplier's cost of acquiring the goods (e.g., the purchase of fuel, wiring, cement) that the local supplier is reselling to the "wind farm."

      The only portion of the price paid by the "wind farm" that should be counted in NREL's JEDI-WIM model (which might result in a local economic benefit) is the difference between the local supplier's cost and the price he or she charges; i.e., the "value added" portion. Furthermore, it should be noted that if the local business providing the goods and services to the "wind farm" is not locally owned, the portion of the "value added" that is profit to the owner may also flow outside the local area and, therefore, not contribute to any local economic benefit.

   c. **Overstating local value of land rental payments**. The default values also assume incorrectly that all land rental payments (i.e. land for turbines, substation, lines) should be counted as a local economic benefit. This assumption could be justified only if the land is locally owned AND the income from the rental payments is spent locally. There would be little or no local economic benefit from the land rental payments if:

      1) The payments go to an absentee land owner, OR

2) The money is spent or invested outside the area (e.g., in a mutual fund managed in some distant city that invests in stocks or bonds having no local connection).

2. **Failure to consider costs that offset benefits**. The model focuses only on potential *benefits* and fails to consider *costs* that will be borne in the state or locality if a "wind farm" is constructed. Three examples of such costs deserve particular attention:

   a. **Counting state and/or local taxes without counting costs incurred by state and local governments because a wind farm is constructed.** The model counts as an economic benefit state or local taxes that may be paid by a "wind farm" owner. However, there is no provision in the model to offset that revenue with costs incurred by state or local governments because a "wind farm" is built. Without question, governments will incur costs to provide facilities and services required by the "wind farm," or its owner and employees, or by the people filling the jobs that the model says would be created "indirectly" or "induced." Such costs would include:

      1) Building and/or repairing roads required to transport equipment, materials and supplies to the site. A lot of heavy equipment, materials (e.g., tons of rebar, crushed stone, and cement) must be hauled to the site. (Materials that are produced locally and jobs filled by local workers – such as truck drivers – would legitimately be counted as potential economic benefits during the construction period.[7])

      2) Police and fire protection.

      3) Education and social service costs for workers and their families.

   b. **Potential adverse impact on environmental, ecological, scenic and property values, business income and other factors because of the existence of a "wind farm."** Reports from areas with "wind farms" in the US and Europe increasingly show concerns about adverse impacts on scenic and property values, and strong adverse citizen opposition to having to live near "wind farms" because of lights, noise, "blade flicker" and other annoyances. Environmentalists are also concerned about adverse impacts on birds, bats, wildlife and other ecological values. Some people are also concerned about the potential loss of business and adverse impact on tourism and retirement or second home purchases in areas affected by "wind farms." NREL's model apparently does not consider any of these costs.

   c. **Higher electricity costs imposed on electric customers via monthly bills.** No one disputes the fact that the true cost of electricity from wind is higher than the cost of electricity produced from traditional energy sources. Those higher costs are passed through in some way to electric customers via monthly bills.

      If the 50 MW "wind farm" being considered for Highland County, Virginia were to be built and it achieves a capacity factor of 30%, it would produce 131,400,000 kilowatt-hours (kWh)[8] of electricity each year (i.e., 50,000 kW x 8760 hours in year x .30 capacity factor). If that electricity cost electric customers only $0.02 per kWh more than electricity from other sources, the added cost to consumers annually would be $2,628,000 per year. When consumers are required to pay higher electricity bills they have less money to spend on other needs such as food, shelter, clothing education or health care. These are costs and adverse economic impacts that should be considered in a legitimate economic analysis.

Testing the Extent of the NREL Model's Overestimation of Economic Benefits

A "wind farm" being proposed for Highland County, Virginia, is used in this analysis to demonstrate the model's significant upward bias when using the default assumptions to estimate economic benefits. While final details of the proposed "wind farm" are not available at this time, information in an application for a Department of Agriculture grant indicates that the "wind farm" would make use of NEG Micon 1.65 MW turbines and have a total rated capacity of about 50 MW. This suggests that the wind farm would have about 30 turbines (i.e., 30 x 1.65 = 49.5 MW).

Note that NREL's JEDI-WIM model – as it has been made available publicly – permits calculation of alleged economic benefits at the State level. Additional detailed economic data are necessary to get the model to make calculations at the County or other regional level. NREL does not make county level detail available but instead refers potential users to Minnesota IMPLAN, Inc. of Stillwater, MN, to purchase such data.

The cost of the IMPLAN data can be significant and not readily affordable for this self-financed analysis. Therefore, I have used an alternative approach. Specifically, I have:.

- Used the Highland "wind farm" parameters (i.e., 50 MW; 30 turbines of 1.65 MW each).
- Run the model using NREL's "default" assumptions.
- Run the model using "local share" assumptions that would much more closely reflect the potential local economic benefit in the Highland County area.

Certainly, the people of Highland County (or any other area where the model is used) deserve a much more thorough analysis of economic benefits and costs than is permitted by the NREL's JEDI-WIM model and this paper. If the NREL model were to be used, several actions – in addition to the demonstration undertaken for this paper – should be taken. Specifically:

1. The validity of the IMPLAN data on Virginia's economy that underlies the NREL model should be checked.
2. The assumptions regarding taxes, including property taxes that would be applicable to the proposed "wind farm" should be checked.
3. Detailed information should be compiled on the following matters and substituted for data assumed in the NREL model.
    a. The supplies, equipment and materials that would be available and procured in the Highland County, VA, area – and the local *value added* for each product or service procured IN that area. Clearly, the total price paid by the "wind farm" developer or owner should not be used when estimating potential local economic benefits.
    b. The short term construction jobs and the few permanent jobs that will be available to and can be filled by existing residents of the Highland County area and, in the case of the few permanent jobs, the number that would be filled by permanent residents rather than visiting workers who live elsewhere.
    c. The additional costs that will be incurred locally – by governments, businesses and individuals – during and after construction because of the existence of the "wind farm."

Details of the Analysis that Demonstrates the NREL model's overestimation of local economic benefits -- Using the potential Highland County, VA, "wind farm"

As indicated above, different and more realistic "local share" assumptions have been used to determine the extent of the overestimation of local economic benefits and jobs that results from using NREL's assumptions. A 3-page attachment to this paper provides:

- On pages 1 and 2, the input assumptions – including:
  - All of the dollar cost numbers specified in the NREL model. (none of which were changed).
  - The "default" values for "local share" which are the assumptions specified by NREL (none of which were change).
  - Alternative, lower, "local share" assumptions which are more realistic than those developed by NREL.
- On page 3, the model outputs – derived from the two sets of input assumptions.

NOTE however, that the changes in assumptions for this demonstration are limited to the "Local Share" assumptions. Changes have NOT been made in the assumptions with respect to Permanent jobs – which seem to be overstated in the default assumptions. Therefore, the resulting calculations will still OVERSTATE potential local economic benefit and local jobs. Further, overstatements in the *direct* jobs and are likely to contribute to overstatement in the *indirect* and *induced* jobs and economic impacts.

The table below – which continues on to the next page -- shows the changes from the default "local share" assumptions used in the demonstration to produce a more realistic estimate of local job and economic benefits. The table also shows the rationale for using the lower percentage.

Identification of "Default" Assumptions that have been changed to provide more realistic estimates of local benefits			
	Local Share		
Variable	JEDI-WIM Default Assumption	More Realistic Assumption	Rationale for Changing Assumption
Construction Cost			
Material			
Construction (concrete, rebar, equip, roads and site prep)	90%	45%	Count only "value added" (e.g., cement, rebar, equip originate elsewhere)
Electrical (drop cable, wire)	100%	15%	Count only local "value added"
HV line extension	100%	15%	
Labor			
Foundation	100%	20%	Most workers during construction imported
Erection	75%	10%	Skills likely imported
Electrical	75%	10%	Skills required for turbines likely imported
Other Costs			
HV Sub/Interconnection	100%	20%	Little local content likely; some value added
Legal Services	100%	50%	Only small part likely provided locally
Site Certificate/Permitting	100%	50%	Only small part would be done locally
Wind Plant Annual Operating & Maintenance Costs			
Personnel			
Field Salaries	100%	50%	Apparently few of the small number of
Administrative	100%	50%	Employees needed for an operating "wind
Management	100%	50%	Farm" spend full time AT the "wind farm"

Identification of "Default" Assumptions that have been changed to provide more realistic estimates of local benefits Continued			
	Local Share		
Variable	JEDI-MIM Default Assumption	More Realistic Assumption	Rationale for Changing Assumption
Materials and Services			
Vehicles	100%	15%	Only local "value added" should be counted
Misc. Services	80%	15%	Only local "value added" should be counted
Fees, Permits, licenses	100%	50%	Only part of these costs is local.
Utilities	100%	20%	Only local "value added" should be counted
Fuel (motor vehicle gasoline)	100%	15%	Only local "value added" should be counted
Tools and Misc. Supplies	100%	15%	Only local "value added" should be counted
Financial Parameters			
Individual Investors (% of total equity)	100%	10%	Important consideration is whether equity investors are local or absentee AND where their profits are spent.
Land Lease (total cost)	100%	10%	Even 10% is too high if landowners are absentee and the money is spent or invested elsewhere

Results from the Demonstration

The numbers shown in "boxes" on page 3 of the attachment show the significant differences in the results from the model by using more realistic assumptions in lieu of the default assumptions.

The following table summarizes the most significant reductions in estimated local economic benefit and jobs when more realistic assumptions are substituted for NREL's "default" assumptions.

Reductions in Local Economic Benefits and Jobs when Using More Realistic "Local Share" Assumptions			
	Using NREL Default Assumptions	**Using More Realistic Assumptions**	**Reduced Local Benefits**
Project Construction Costs Local Spending	$5,846,329	$1,864,084	Drop by $3,982,245
Direct Operating & Maintenance Costs (annual) Local Spending	$390,811	$172,465	Drop by $218,346 annually
Other Annual Costs Land leases	$136,400	$13,200*	Drop by $123,200 annually
Construction Period Jobs:			
Direct	47.9	14.9	Drop by about 33 jobs
Indirect	31.3**	9.9**	Drop by about 21 jobs
Induced	34.5**	11.1**	Drop by about 23 jobs
Total	113.7	36.0	
Jobs During Operating Years:			
Direct	12.9***	5.6***	Drop by about 7 jobs
Indirect	1.9***	0.8***	Drop by about 1 job
Induced	4.8***	2.5***	Drop by about 2 jobs
Total	19.7	8.9	

* The $13,200 is still too high if the landowners are absentee owners and/or if the income from land leases is spent or invested other than in Highland County.

** Any claims of jobs created "Indirectly" or "Induced" should be treated VERY skeptically because they are based on underlying assumptions about the make up and workings of the economy of Virginia at the state level which may have NO applicability to Highland County. As indicated earlier, specific information about the Highland County economy should be substituted in the NREL model before any credence is given to "indirect" or "induced" jobs.

*** All the numbers on jobs during operating years produced by NREL's model are highly suspect because the assumed number of jobs during operating years is higher than is demonstrated by actual "wind farm" experience – such as is documented by the Iowa Department of Natural Resources paper, "Top of Iowa Wind Farm Case Study."

Principal Conclusions

Clearly, the NREL JEDI-WIM model as it as been provided by NREL, in its "default mode" grossly overestimates potential local economic and job benefits from a potential "wind farm" in Highland County, Virginia, by over 200% during the short term construction period and 180% to 200% annually during continuing operation.

Also, the model is seriously deficient because it does not take into account significant costs that are incurred by governments, organizations and individuals when a "wind farm" is constructed – which cost may offset in part or completely the expected economic benefits.

The model would, similarly, overestimate local benefits and understate (or ignore) costs if used to analyze economic costs and benefits associated with other "wind farms."

Hopefully, NREL will correct the fundamental errors identified in this paper and begin using more realistic "local share" assumptions.

* * *

Author: The analysis underlying this paper and views expressed are provided in my role as a citizen, consumer and taxpayer and are not on behalf of any client or other interest. All the analysis and writing was entirely self-financed. I am semi-retired after spending more than 30 years on energy matters in the federal government and private sector. I now work without compensation to shed light on the adverse impacts of government and private policies, regulations, programs and projects that are *detrimental to the interests of consumers and taxpayers*. "Wind energy" meets this criterion, as does the NREL JEDI-WIM Model.

Glenn R. Schleede
Reston, Virginia

Endnotes:

[1] DOE's government-owned, contractor-operated national "laboratories" undertake a variety of research, development and analytical activities. Virtually all of the activity is financed with tax dollars. Quite likely, the work in the "hard" sciences is objective, conducted in accordance with accepted scientific methods and engineering principles, and undergoes credible peer-review. Some of the national "laboratories," such as the National Renewable Energy "Laboratory" (NREL), also engage in analyses involving public policies, programs and regulations. Much of that work turns out not to be credibly objective, scientific or peer reviewed. Instead, these activities all too often appear biased and designed to promote a particular technology, policy, program, regulatory requirement, special interest, or perhaps even a personal philosophy. Such "analyses" often appear designed to support preconceived notions and conclusions. These "analyses" are often driven by assumptions that virtually assure that the desired conclusion is reached. As demonstrated in this paper, NREL's "JEDI-Wind Impact Model" is an example of a "laboratory" product that overstates benefits and understates or ignores costs -- in this case resulting in a faulty estimate of the potential local economic benefits of a "wind farm." In summary, the NREL model produces results that are highly biased.
[2] NREL release, http://www.nrel.gov/docs/fy04osti/35872.pdf. As of April 23, 2004, The JEDI model is also described at http://www.eere.energy.gov/windpoweringamerica/economics.html An article at that site provides a PowerPoint presentation on the model and indicates that a paper on the model will soon be available. The model and documentation were kindly provided to this analyst by NREL. The documentation uses the name "Wind Impact Model" or WIM.
[3] In addition to overestimating jobs that would be filled locally and, therefore, the compensation that would be paid to local residents, the model – in its calculation of indirect or induced effects – appears to assume that the taxes on income will flow to the state or locality. When workers are imported for temporary or intermittent work, revenue from any income tax that they pay generally will flow to the government(s) in the state or locality where they reside – not where they work temporarily.
[4] Iowa Department of Natural Resources, *Top of Iowa Wind Farm Case Study*, July 2003.
http://www.state.ia.us/dnr/energy/MAIN/PROGRAMS/WIND/topOfIowaWindFarm.html
http://www.state.ia.us/dnr/energy/MAIN/PROGRAMS/WIND/documents/topofiaWindFarmCaseStudy.pdf
[5] "Value added is defined by one economics textbook as "The difference between the value of goods produced and the cost of materials and supplies used in producing them. In a $1 loaf of bread embodying $0.60 worth of wheat and other materials, the valued added is $0.40. Value added consists of the wages, interest and profit components added to the output by a firm or industry. Samuelson, Paul A. and William D. Nordhaus, Economics, 14th Edition, p. 748.
[6] Unfortunately, this is a common mistake made in "input-output models" that purport to calculate state or local economic benefits.
[7] The total construction period reported in the *Top of Iowa Wind Farm Case Study* was less than 6 months.
[8] 131,400,000 kWh of electricity may sound like a lot but it is not. That amount of electricity is equal to 18/100 of 1% of the electricity produced in Virginia during 2002 (US Energy Information Administration data).

April 28, 2004

Response for Document 00021

00021-001: The commentor suggests that the analysis undertaken to estimate the economic impacts of wind energy development is deficient because (1) the impacts of these developments on individual utility generation and transmission systems are not explicitly considered in the analysis, and (2) the models used in the analysis are flawed.

As is stated in the Executive Summary (page ES-1) and in Chapter 1 of the PEIS, the purpose of the PEIS is "to assess the environmental, social, and economic impacts of wind energy development on BLM-administered land." A cost-benefit analysis would likely have considered a range of factors relevant to the development of wind energy compared with other forms of electricity generation. These factors would include impacts on individual utility generation and transmission systems, specifically the impacts on generation capacity and reliability considerations, air quality, and ratepayer and taxpayer impacts. Although the analysis undertaken for the PEIS used a wind development scenario that takes into account some of these factors, in particular capital costs, fossil fuel prices, and transmission systems issues, the analysis is limited specifically to those environmental and economic impacts that result from wind energy developments on BLM-administered land. The analysis of impacts on utility systems, and environmental and economic impacts that occur beyond BLM- administered land is therefore beyond the scope of the analysis undertaken for the PEIS.

The amount of predicted wind capacity in each state was calculated by the National Renewable Energy Laboratory (NREL) by using the Wind Industry (WinDs) Model, which uses the best available data and modeling methodology for this purpose. The calculations are based on a maximum market capacity for wind development subject to environmental and other planning constraints on BLM-administered lands. Data generated by NREL in the WinDs Model were used as a basis for estimating the impacts of wind development over the time period 2005 to 2025. The WinDs data show the timing of maximum potential wind development for each of the 11 states with BLM-administered land, given a series of assumptions relating to location, capital costs, fossil fuel prices, and transmission systems issues. A large proportion of the data used in the model comes from federal government sources, in particular the U.S. Department of Energy's Annual Energy Outlook, which forecasts fossil energy prices over the time period used in the PEIS. A full description of the WinDs model appears in Appendix B of the PEIS.

The purpose of the modeling efforts in this PEIS is to provide a general framework of possible development over the next 20 years, in order to assess the impacts of implementing a Wind Energy Development Program for BLM-administered lands. The BLM recognizes that many factors can affect the accuracy of the projections, and, as discussed in Appendix B, a variety of

factors will determine actual development levels. However, the maximum potential development scenario (MPDS) and WinDS models employed in the PEIS are adequate for forecasting potential development levels over such a large geographic area and long, projected time frame. Greater accuracy in these forecasts would not likely result in changes to the requirements of the Wind Energy Development Program; that is, the proposed policies and BMPs would not be changed at this time. The program requires that the BLM employ adaptive management strategies to the oversight of wind energy development on BLM-administered lands. The BLM will monitor the level of wind energy development into the future as well as the effectiveness of its policies and BMPs. If necessary, adjustments to the programmatic requirements will be made.

Although the Jobs and Economic Development Impact (JEDI) Model developed by NREL (2004e) can be used for local and state-level analyses of wind projects, it was not used to estimate these impacts in the PEIS. As discussed in Section 13.1, representative data were taken from the JEDI model and other sources to support the PEIS economic impact calculations. Specifically, data describing the breakdown of specific cost elements for a generic wind project were taken from the JEDI model. Beyond the use of these cost data, the estimation of impacts of wind development for each of the years and states was undertaken independently of the JEDI model.

Regarding overestimation of emission reduction impacts, we agree that each kWh of electricity produced by a wind energy production facility might not offset the emissions from an equal number of KWh produced by a coal-fired generating unit. Text acknowledging that offsets might be less than one-to-one has been added to Section 6.4.2.2, Air Quality, and the discussion expanded to included the lower offsets from natural gas combined-cycle generation.

Regarding the validity of property value studies, two studies that deal specifically with the impact of wind developments on property values had been undertaken by the time the PEIS was prepared, both showing that no negative impacts occur. One study was published by ECONorthwest (2002) and the other was published by Sterzinger et al. (2003). Both studies provide a comprehensive analysis of the problem, one through a survey of county property assessors, and the other through the analysis of housing sale prices. Although additional studies may provide more insight on the impact of wind developments on property values, numerous studies that consider the impact of energy (power generation and transmission) and waste (nuclear and hazardous waste and landfills) facilities on property values are also useful in this context. The majority of these studies contend that while proximity to potentially objectionable facilities can create significant opposition in local communities, the overall economic impact of these facilities is not negative. Often opposition does not translate into economic impact, either on property values or on the local economy, or any negative impact that does occur is often offset by

economic benefits of a particular facility into the local community in terms of employment, income, and local tax revenues. Positive impacts of this nature, in turn, benefit local property values by making the local community a more desirable place to live and work.

Regarding decommissioning risk and restoration costs, the BLM will require financial bonds for all wind energy development projects on BLM-administered lands to ensure compliance with the terms and conditions of the ROW authorization and the requirements of applicable regulatory requirements, including reclamation costs. The amount of the required bond will be determined during the ROW authorization process on the basis of site- specific and project-specific factors. The BLM may also require financial bonds for site monitoring and testing authorizations. A requirement regarding the establishment of bonds has been added to the proposed policies (see Section 2.2.3.1).

Regarding safety standards for operation of wind turbines in cold climates, as required by the Wind Energy Development Program proposed policies and BMPs, site-specific analyses will be conducted for any proposed project on BLM-administered lands in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Health and safety issues, such as the need for specific safety standards for wind turbine operation in cold climates, will be addressed at the site-specific level. Section 2.2.3.2.2 describes the proposed BMPs that would occur during preparation of the POD, and in this section, the first proposed BMP under the Health and Safety subsection states that a safety assessment shall be conducted.

Document 00022

Montana Department of
ENVIRONMENTAL QUALITY
Judy Martz, Governor
P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.state.mt.us

December 9, 2004

BLM Wind Energy Programmatic EIS
Argonne National Laboratory EAD/900
9700 S. Cass Avenue
Argonne, IL 60439

RE: Comments on Draft Wind Energy Development Programmatic EIS

The Montana Department of Environmental Quality (DEQ) files these comments on the Bureau of Land Management's (BLM) recently released Draft Wind Energy Development Programmatic EIS. Trying to describe the impacts of wind farm proposals in a programmatic EIS that covers BLM lands in the western US is a tall order, and we have to applaud BLM and its consultants' efforts in the recently released draft. The description of the sequence of activities during construction and operation is very informative and the mitigation measures are clearly tied to each step of the development process.

The programmatic EIS generally describes the types of impacts that should be examined in more detailed site-specific environmental assessments (EAs) or environmental impact statements (EIS). These site-specific EAs or EISs tiered to the programmatic EIS would provide the public the opportunity to review and comment on interdisciplinary analyses and trade-offs that could not possibly be addressed in a programmatic document. Preparing a single site specific EA or EIS allows decision makers and the public the opportunity to review and comment on all aspects of a project at once. The alternative would be a piecemeal process where several resource specific analyses and reports are produced but results from individual resource areas are not integrated. The site-specific EA or EIS is the better process because it fully informs and discloses impacts and tradeoffs between resource areas that decision makers need. 22-1

Where site-specific follow-up studies are necessary, standard protocols should be required of or by BLM. This approach helps ensure that there is some predictability and consistency in decisions made on projects throughout the West being examined by different interdisciplinary teams. Standard protocols for conducting impact studies should be identified while still recognizing that protocols for some resource areas are evolving. Where protocols are still evolving, interim protocols should be identified and schedules presented for review and updating the study protocol. For example, the USFWS has identified an interim baseline study protocol for conducting avian studies that should be adopted.

Because the scope of the programmatic EIS only addresses BLM lands, it does not adequately address off-site impacts caused by new transmission lines that may be required for wind farms. If the programmatic EIS is not expanded, it should identify a series of procedural steps to be taken to integrate analysis of off-site impacts into the decision making process to ensure that all secondary and cumulative impacts are identified and considered.

The programmatic EIS described the general types of impacts that occur on BLM lands but did not adequately describe the cumulative impacts from development on adjacent private owned, state owned, tribal owned, or non-BLM federal lands. Where new transmission lines may be required and could extend off a proposed wind farm site and onto adjoining public, private, or tribal lands, the programmatic EIS should describe the process and scope of additional environmental analyses in an EA or EIS that would be required by BLM or other agencies on these off-project lands. Would BLM be responsible for the analyses or would another agency such as the Western Area Power Administration, Bonneville Power Administration, Federal Energy Regulatory Commission, state siting agency or local government be responsible for analyses? Would this impact and siting analysis be conducted concurrently with the preparation of the site specific EA or EIS or would this occur in subsequent fragmented analyses that could lead to piecemeal decision-making on associated development? 22-2

DEQ believes there is a case to be made for joint review of associated development such as transmission lines on non-BLM lands at the time the site specific EA or EIS described in the programmatic EIS is prepared for BLM lands. If this is not possible, then BLM's decision-making process should allow results of state and local planning processes to be incorporated into BLM's record of decision. 22-3

The Wind Energy EIS does a good, thorough job at discussing the societal costs of the proposed action. As the EIS explains, expedited wind development on BLM lands may lead to adverse impacts on wildlife, soil quality, aesthetics, noise, and other land uses. One additional societal cost that should be mentioned is the challenge that transmission grid operators currently face in integrating wind-generated electricity into their regional transmission grid. Expediting wind energy on BLM lands would increase this particular challenge for the operators to the extent that more wind power comes onto the system as a result of the proposed action. 22-4

The EIS also discusses societal benefits from the proposed action, such as the direct and secondary economic development that would occur in areas near the wind turbines. There are some societal benefits from accelerating wind development on BLM land, however, that are not discussed in the EIS. For example, the EIS mentions that there are economic benefits from energy generation that produces few or no air emissions (as compared to coal and natural gas generation). It does not, however, state clearly what those economic benefits are. Benefits from lower air emissions include increased human health, lower levels of damage to agricultural crops and buildings, higher levels of visibility, higher quality outdoor recreation, and a higher level of ecological quality (including the slowing of global climate change). These benefits from expedited wind energy should be mentioned, even if their magnitude from this particular project is small. 22-5

Another significant societal benefit of expediting wind energy on BLM lands is the advantage of renewable energy over non-renewable energy. Renewable wind energy does not deplete the Earth's resources for its operation, and is not affected by fuel prices, since the wind itself is free. These characteristics of wind energy may create benefits to energy customers of greater energy security and more stable prices. Another benefit that should be mentioned from the proposed action is advancing the goal of U.S. energy self-sufficiency. Such benefits deserve to be mentioned, if only briefly. 22-6

Attached you will find more detailed comments. Thank you for the opportunity to comment on BLM's programmatic EIS for development of wind energy resources in the Western US. Please contact Tom Ring (406) 444-6785 if you have any questions.

Sincerely,

Warren D. McCullough

Warren D. McCullough
Chief, Environmental Management Bureau

Page by page comments:

Page 2-28 and page 6-7
In Montana another wind project is proposed in Valley County. It is being proposed by Wind Hunter, LLC and is for an eventual build out to 500 MW on state, private, and BLM lands. At full build out much of this generation would be located on BLM land and therefore you may wish to revisit the information presented in table 5.13-1. contact Scott Powers with BLM in Billings, Montana for more information. 22-7

Page 3-13 under wind energy project siting. Montana also has a siting statute that pertains to transmission lines. 22-8

Page 3-18, section 3.3.3
Conclusions from recent reports including the following deserve mention:

Brain, Joseph D., Robert Kavet, David L. McCormick, Charles Poole, Lewis B. Silverman, Thomas J. Smith, Peter A. Valberg, R. A. VanEtten, and James C. Weaver 2003. Childhood Leukenia: Electric and Magnetic Fields as Possible Risk factors. Environmental Health Perspectives vol. 111, number 7, June 2003.
Ahlbom, A, N Day et al 2000: A pooled analysis of magnetic fields and childhood leukemia, Brit J Cancer 83:692-698, 2000 22-9

Also studies, conducted by research teams led by Dr. Geraldine Lee at the California Department of Health Services (CDHS) and Dr. De-Kun Li at the Kaiser Foundation Research Institute, found an increased risk of miscarriage among California women who were exposed to high peak magnetic fields (maximum exposure above 16 milligauss during the measurement day) in early pregnancy.

Page 3-26 section 3.4.4
Montana has regulations in place to reduce impacts to surface waters from construction disturbance. 22-10

Page 5-5 section 5.1.3
In addition to the mitigation measures that would be used on site during and following construction, the amount of time to stabilize disturbed sites would depend on environmental conditions. Arid sites with soil limitations could take much longer to stabilize than moister sites with no limitations. At any site prolonged drought can delay or inhibit reclamation success. 22-11

Page 5-24 paragraph 4.
Is the sound power level of 100 to 104 dB (A) for small turbines in the 1 to 1.4 kW range or for larger turbines in the 1 to 1.5 MW range? If this is not a typographical error then sound levels from the current commercial scale turbines should be presented. 22-12

Page 5.5.3.3 transmission line noise. 22-13

Although the remote location of most potential wind developments on BLM lands would result on low impacts from corona noise, transmission lines connecting wind developments to the grid could easily extend off BLM lands into more populated areas where corona induced noise could be an issue. 22-13 (cont.)

Also note that in Montana a recently proposed wind development on state, private, and BLM land would require a 230 kV line about 30-35 miles in length. Thus the assumption in the first paragraph should be revised.

Page 5-82 under section 5.9.5.3.5
Biological controls could also be used as appropriate to help control weeds. 22-14

5.9.5.4.3 First bullet
There is a limit to the height of vegetation that should be allowed to grow under a transmission line. If vegetation becomes too tall, the transmission line can arc possibly causing a fire and line outage. 22-15

Second bullet
If native species are used in site reclamation/stabilization it is likely that one wildlife species or another would use the available habitat. Managers should weigh the benefits of reduced raptor foraging with the costs of potential introduction of non-native vegetation or the increased reclamation costs later of having to deal with a gravel surface. 22-16

Page 5-86 section 5.10.2
Power lines leading off-site to a grid connection may cross croplands. Construction of a transmission line in cropland may interfere with crop dusting operations and increase the risk of collisions. 22-17

Responses for Document 00022

00022-001: The Wind Energy Development Program proposed policies and BMPs identify those issues that need to be addressed for each individual wind energy project and specify that site-specific NEPA analyses will be conducted for each project. The scope and approach for site-specific analyses will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. At this time, the BLM does not intend to establish uniform protocols for conducting studies at individual sites. However, the application of adaptive management strategies, as required by the proposed program, will ensure that programmatic policies and BMPs be revised as new data become available. This would include the incorporation of new analytical protocols and methods, if appropriate.

00022-002: Section 6.4.3 acknowledges that wind energy development on BLM-administered lands may require the construction of new transmission lines. Such construction would constitute a separate but related activity and will require interagency cooperation and multidisciplinary environmental reviews. The designation of new transmission corridors on BLM-administered lands will occur as a result of interagency consultations, not as a result of a unilateral decision by the BLM. Any such designations would be evaluated through either regional or local land use planning efforts, with opportunities for full public involvement. The potential impacts of transmission system interconnects or expansions that would be required by an individual wind energy project on BLM-administered lands will be assessed as part of the site-specific analyses, with input from other federal, state, and local agencies, and interested stakeholders.

New text has been added to Section 6.4.3 to describe the existing and proposed rules and regulations governing wind project grid interconnections and transmission system upgrades. These regulations will be applicable to wind energy development projects on BLM-administered lands. In addition, under Section 2.2.3.1, Proposed Policies, the 9th bullet addressing required NEPA analyses has been reworded to define how NEPA analyses of proposed wind energy development on adjacent private or state-owned lands will be conducted.

00022-003: The BLM agrees that the review of new transmission line construction will be a multi-agency process. In part, because of this, it is not possible to fully assess impacts associated with transmission line construction or expansion in the PEIS. As discussed in Section 6.4.3, an existing protocol ensures that issues associated with transmission lines will be addressed at the site-specific level. New text has been added to Section 6.4.3 to describe the existing and proposed rules and regulations governing wind project grid interconnections and transmission system upgrades. These regulations will be applicable to wind energy development projects on BLM-administered lands.

00022-004: The BLM recognizes that power grid operators will need to be prepared to accommodate power fluctuations that may occur in operating the energy flow because of fluctuating wind energy production. New text has been added to Section 6.4.3 to describe the existing and proposed rules and regulations governing wind project grid interconnections and transmission system upgrades. These regulations will be applicable to wind energy development projects on BLM-administered lands. Detailed discussion regarding how power grid operators would have to change their mode of operation is beyond the scope of the PEIS.

00022-005: As is stated in the Executive Summary (page ES-1) and in Chapter 1 of the PEIS, the purpose of the PEIS is "to assess the environmental, social, and economic impacts of wind energy development on BLM-administered land." A cost-benefit analysis of wind energy development would likely have included a regional analysis of the comparative economic and environmental costs of wind energy development compared with other forms of electricity generation, and conservation measures. Such an analysis would likely also have included impacts of wind development on fossil fuel consumption, land and water resources, emissions from conventional power plants, and the impact on greenhouse gases. Although the analysis undertaken for the PEIS used a wind development scenario that takes into account some of these factors, in particular power generation capital costs, fossil fuel prices, and transmission systems issues, the analysis is limited specifically to those environmental and economic impacts that would result from wind energy developments on BLM-administered land. The analysis of impacts on comparative power generation costs, and environmental and economic impacts that emanate from other forms of electricity generation are beyond the scope of the analysis undertaken for the PEIS.

00022-006: As is stated in the Executive Summary (page ES-1) and in Chapter 1 of the PEIS, the purpose of the PEIS is "to assess the environmental, social, and economic impacts of wind energy development on BLM-administered land." A cost-benefit analysis of wind energy development would likely have included a regional analysis of the comparative economic and environmental costs of wind energy development compared with other forms of electricity generation, and conservation measures. Such an analysis would likely also have included impacts of wind development on fossil fuel consumption, land and water resources, emissions from conventional power plants, and the impact on greenhouse gases. Although the analysis undertaken for the PEIS used a wind development scenario that takes into account some of these factors, in particular power generation capital costs, fossil fuel prices, and transmission systems issues, the analysis is limited specifically to those environmental and economic impacts that would result from wind energy developments on BLM-administered land. The analysis of impacts on comparative power generation costs, and environmental and economic impacts that emanate from

other forms of electricity generation are beyond the scope of the analysis undertaken for the PEIS.

00022-007: The limited wind energy development alternative considers additional wind energy development on BLM- administered land in areas where it currently exists, will be under review, or has been approved for development at the time the ROD for the PEIS is established. When the Draft PEIS was prepared, it was determined that only six locations were likely to meet these criteria by the time the ROD will be published (anticipated in July 2005). Although applications for additional ROW authorizations for both site monitoring and testing and commercial development may have been submitted to the BLM or may be under consideration by developers, the scope of the limited wind energy development alternative will not be expanded. Including additional projects would not substantively alter the conclusions of the PEIS regarding the alternatives.

00022-008: The Montana siting statute, Major Facility Siting (MCA 75-20-101 et seq.), pertaining to transmission lines is listed in Table E-1, Wind Energy Project Siting, in Appendix E of the PEIS. Montana is listed under the "Wind energy project siting" heading as having equivalent environmental policy acts. No text change has been made to the document in response to your comment.

00022-009: Text was revised by including the recent review by Brain et al. (2003). While there are numerous additional studies that could also be cited, representative articles and reports were used to summarize the current state of the science regarding exposures to extremely low frequency electric and magnetic fields.

00022-010: Appendix E lists the Montana Water Quality Act (MCA 75-5-101 et seq.), which would govern impacts to surface waters from pollutants from construction disturbances. See Table E-4 in Appendix E of the PEIS for similar controls at the federal level and in other states within the study area.

00022-011: The text has been revised for clarification.

00022-012: There was a typographical error. The suggested editorial change has been made.

00022-013: The text has been revised in response to your comment.

00022-014: Biological control of noxious weeds is much less common than the use of chemical or mechanical control methods. The specific approaches that will be used to help control noxious weeds will be developed on a project-by-project basis with input from other federal, state, and local agencies, and interested stakeholders.

00022-015: Any vegetation planted within transmission line corridors would not be allowed to reach a height sufficient to interact with overhead lines. This would be

accomplished through the planting of vegetation that is of sufficient height to discourage foraging by raptors yet short enough so as to not to interact with the overhead lines (e.g., shrub species), and/or by controlling vegetation height through periodic mowing, as is commonly practiced in transmission line corridors. No text change has been made to the document in response to your comment.

00022-016: The design of a site reclamation plan and the selection of reclamation methods and approaches will be conducted on a site-by-site basis, with input from other federal, state, and local agencies, and interested stakeholders. Such site-specific analyses are required by the policies and BMPs of the Wind Energy Development Program and will be required for all wind energy projects proposed for BLM-administered lands. No text change has been made to the document in response to your comment.

00022-017: As required by the Wind Energy Development Program proposed policies and BMPs, site-specific analyses will be conducted for any proposed project on BLM-administered lands. These analyses will be conducted in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Consideration will be given to surrounding land use issues as well as to issues related to the construction of new transmission lines. Concerns about potential impacts to crop-dusting operations will be addressed as appropriate.

Document 00023

Resource Advisory Council

Bureau of Land Management
Boise District
3948 Development Avenue
Boise, ID 83709

December 9, 2004

Konstance L. Wescott
Argonne National Laboratory EAD/900
9700 S. Cass Avenue
Argonne, IL 60439

Re: BLM Wind Energy Draft Programmatic EIS

Dear Ms. Wescott:

Thank you for the opportunity to comment about the Draft Programmatic Environmental Impact Statement (DPEIS) on Wind Energy Development on BLM administered lands in the Western United States. Please consider the following comments about the draft Wind Energy PEIS.

1) In Idaho, BLM administers millions of acres. Four proposed project areas cover approximately 21,000 acres and of that, only 9,100 will be considered for potential infrastructure development under this PEIS (Total Economically Developable Land). We understand that only areas rated for wind at a 5, 6, or 7 will be considered, the area must be accessible, and have transmission lines, among other criteria. As site-specific projects proceed through the EA or EIS process, we hope staff will continue to work closely with the tribes, public and other interested parties to determine the best approach for exploration and development of the sites. We also hope that agency staff did not eliminate potential sites prematurely or include sites with significant resource or Tribal concerns. In conversations with BLM staff and others to date it seems that they have done a thorough job in determining the locations for exploration. 23-1
2) A broad economic analysis was completed on lands designated as "Total Economically Developable Land" (section 5.13: pp 5-100 through 5-107). Resulting economic impacts on employment, sales, income and taxes are presented at the state level. Staff and developers should consider these results within the context of the broad assumptions on construction and operation, along with projected trends in energy demand through 2025. We encourage BLM staff and developers to include site-specific economic analysis as these potential projects come through the EA process and that this economic information be a critical part of the decision process on individual projects. 23-2

3) Though broad in nature and covering 11 western states, the guidelines set forth in this Wind Energy Draft PEIS will assist land managers and developers as they proceed. Since this is a relatively new endeavor for the BLM there are a lot of "unknowns". We request that national and local BLM offices allow flexibility for developers and land managers on individual projects based on local information, needs, and environmental concerns as they arise. This will also help keep costs down and exploration moving. 23-3

4) Construction Effects on Wildlife –
   a) Table 5.9.2.2 (page 5-43) indicates that the interference with behavioral activities caused by construction will be short term. However, some studies indicate that interference with behavioral activities such as the use of leks for breeding would result in long-term avoidance of traditional use areas and limit reproductive activities. In some locations transmission lines fragment the population and birds avoid the area. 23-4

5) Mitigation –
   a) The cost for development should include on-site improvements to offset the impacts created directly by the project. Mitigation measures could include road improvements, habitat enhancement, or recreation facility improvements. However, everybody will need to work together to strike a delicate balance between addressing the direct impacts while not making production costs prohibitive for development or to drive cost so high that it is an expensive or unaffordable energy source. Staff and developers should work with permittees and other interested parties at the beginning of the process, and continue this cooperation, consultation, and coordination throughout the life of the project. These same individuals should catalog possible mitigation projects or improvements (and costs) at the beginning of the process so the information can be included as the project proceeds through hearings. For example, if the proposed site is located on or near a high use recreation area, improvements can include placement of a bathroom, designated improved trails and a parking area. In addition to offsetting the impact of the towers, the site will be improved so the public can park in marked areas, recreate on groomed, maintained trails and utilize a bathroom rather than partaking in their chosen recreation activity and creating more land use problems. All mitigation should include an education component about the alternative energy source as well as, for example about how to enjoy their recreation activity responsibly (including a comprehensive map) or about wildlife and/or sensitive species located in or near specific project sites. 23-5
   b) With regard to "Compatibility of a Wind Energy Development Project and Gallinaceous Birds" (Section 5.9.3.2 Operational Effects on Wildlife), it should be recognized and stated that it may be very difficult to mitigate the scale of habitat fragmentation and surface disturbance on high quality sage grouse habitat caused by a wind energy development project (transmission lines, turbines, roads, other structures, and activities). 23-6
   c) Regarding page 5-37 and 5-41, habitat fragmentation and surface disturbance caused by a wind energy development project may cause sage grouse to abandon the project area, and impacts may reach beyond the boundaries of the project depending on the needs, behavior, and migration patterns of a local population. 23-7
   d) The discussion on "Compatibility of a Wind Energy Development Project and Gallinaceous Birds" should also mention "Mitigation cannot always replace the 23-8

quality or location of crucial habitat" (National Sage-Grouse Habitat Conservation Strategy, November 16, 2004). Large patches of high quality sagebrush habitats should be maintained, with emphasis on patches occupied by sage grouse. As such, infrastructure for wind energy projects should not be located in areas where there would be conflicts with habitat that is critical for sage grouse. 23-8 (cont.)

6) Monitoring - We encourage the BLM to obtain studies of existing sites, monitor test sites in Idaho and ultimately the projects to obtain site-specific information about on-the-ground impacts of wind energy production. Too often, public agencies spend a lot of time trying to answer "what if" questions as projects proceed through the process. Time and money can be saved if staff can present information that has been validated as questions arise. Monitoring needs to be incorporated at the beginning of the process, continue throughout the life of the project, and possibly even continue for a time after the project has reached completion. Long-term monitoring is essential in collecting accurate trend data and other information that can be used for future project consideration. Long-term monitoring also offers reference for site-specific information and trend data for staff, developers, and interested parties to review for reference, education, and management guidance. Sufficient funding for long-term monitoring is critical to the success for this and other possible alternative energy projects. 23-9

7) Rent/Royalties – We understand that the landowner will receive "rent" for the site based on the number of megawatts produced by each tower. Where public lands under the management of the BLM are in use, we recommend that all of the rent/royalties be paid directly to the local BLM office to be spent on the site to help with long-term education, maintenance, operating expenses and monitoring in the direct vicinity of the project. Since this is only one potential source to assist with these expenses, we strongly encourage the BLM to request continued sufficient funding for long-term monitoring and education, operation and maintenance for all project areas. 23-10

On behalf of the BLM LSRD-RAC, I thank you for considering these comments. We appreciate the BLM's efforts to explore for places to site alternative viable renewable energy sources on public lands.

Sincerely,

/S/

Don K. Weilmunster
Chairman, Boise District RAC

Cc: Kathleen Clarke, Director, BLM
K Lynn Bennett, Idaho State Director, BLM
Jack Peterson, Idaho State Office, BLM
Glen Secrist, Boise District –DM
MJ Byrne, Boise District RAC Coordination

Responses for Document 00023

00023-001: Thank you for your comment. To clarify, lands with wind resources of Class 3 and 4 were also included in the MPDS and estimates of total economically developable land.

00023-002: As required by the 9th bullet under Section 2.2.3.1, Proposed Policies, additional NEPA analysis will be conducted on individual projects, the scope of which would include site-specific economic analyses.

00023-003: We agree. Flexibility and consideration of local information, needs, and concerns are built into the proposed Wind Energy Development Program and will be addressed in detail at the site-specific level.

00023-004: The text in Table 5.9.2-2 has been revised to indicate that effects may be short term for some species, but long term for other species that may completely abandon the disturbed habitats and surrounding areas.

00023-005: The 3rd bullet in Section 2.2.3.1, Proposed Policies, requires entities seeking to develop a wind energy project on BLM-administered lands to consult with appropriate federal, state, and local agencies as early in the planning process as appropriate to ensure that all potential construction, operations, and decommissioning issues and concerns are identified and adequately addressed. In addition, the 9th bullet in this section ensures that site- specific NEPA analyses will be conducted for each project with opportunities for public involvement. These requirements will ensure that appropriate mitigation measures are identified.

00023-006: Implementation at the project-specific level of the Wind Energy Development Program proposed policies and BMPs identified in the PEIS that address the preconstruction surveys, siting, monitoring, construction, operation, and decommissioning is expected to avoid impacts to high-quality sage-grouse habitat, and minimize or avoid habitat fragmentation to the extent practicable.

00023-007: The text in the PEIS states that the significance of the effects of habitat disturbance (including fragmentation) will depend on the habitats and species present at the wind energy development site. The Wind Energy Development Program proposed policies and BMPs presented in Section 2.2.3 identify a number of requirements and restrictions for avoiding or minimizing impacts (including impacts from habitat fragmentation) to wildlife during the siting, design, construction, operation, and decommissioning of wind energy projects. The application of the policies and BMPs will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. In addition, existing BLM guidance on the management of sage-grouse and sage-grouse habitat will be incorporated, where applicable, into any proposed wind energy project on BLM-administered

lands. The application of the policies, BMPs, and sage-grouse guidance will occur at the site-specific level and is beyond the scope of the PEIS.

00023-008: Exclusion of specific areas from wind energy development will be determined at the project level employing site- specific analyses. As required by the Wind Energy Development Program proposed policies and BMPs, site- specific analyses will be conducted for any proposed wind energy development project on BLM-administered lands. The scope and approach for the site-specific analyses and the identification of specific exclusion areas will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. In addition, existing BLM guidance on the management of sage-grouse and sage-grouse habitat will be incorporated, as applicable, into the local site-specific analyses and identification of exclusion areas. The identification of site-specific exclusion areas is beyond the scope of this PEIS.

00023-009: Monitoring will be a key part of the site-specific analyses required by the proposed Wind Energy Development Program policies and the BMPs. BMPS included in Chapter 2 call for monitoring to establish initial baselines as well as monitoring throughout the course of the project to evaluate the effectiveness of mitigative actions taken before and during the project's life. Such adaptive monitoring will ensure incorporation of all relevant data in real time. Although these data will be site-specific, much of the data are transferable and may also have some value for developers contemplating wind farms in other locations. Developers will be expected to incorporate all relevant experiences and data into their Plans for Development for future wind farms and, in some cases, make modifications to their technological approach on the basis of accumulated data and experiences.

00023-010: Your comment addresses issues that are beyond the scope of the PEIS, the mission and responsibilities of the BLM, and/or the defined programmatic scope of the proposed Wind Energy Development Program. We appreciate your input and participation in the public review process.

Document 00024

SAVE OUR SOUND
alliance to protect nantucket sound

December 10, 2004

Mr. Ray Brady
BLM Wind Energy Programmatic EIS
Argonne National Laboratory EAD/900
9700 S. Cass Ave.
Argonne, IL 60439

Re: Draft Programmatic Environmental Impact Statement – Wind Energy Development on BLM-Administered lands in the Western United States

Dear Mr. Brady:

I am writing on behalf of the Alliance to Protect Nantucket Sound (Alliance) regarding the draft Programmatic Environmental Impact Statement (PEIS) on Wind Energy Development on BLM-Administered Lands in the Western United States. The Alliance has been deeply involved in the United States Army Corps of Engineers' (Corps) review of the nation's first proposed offshore wind energy plant – the Cape Wind project – which has been proposed for Nantucket Sound. Unlike wind energy development on BLM lands, Congress has not authorized the development of offshore wind, and no federal program exists to ensure that offshore natural resources are developed in a sensible, fair, and environmentally sound manner. The Corps has nonetheless assumed jurisdiction over the proposed development and is in the process of conducting its NEPA review, despite the lack of authority, a federal program, an adequate environmental review framework, a competitive bidding process, a mechanism for obtaining compensation to the United States, a mandatory decommissioning requirement and boundary system, a cooperative relationship with affected states and local governments, and numerous other deficiencies. The mark of a successful program for promoting environmentally-sound energy development on federal land is measured against these standards. To the extent the BLM PEIS includes some of these key elements, it is a marked improvement over the offshore program administered by the Corps.

From very early in the process, the Alliance has urged the Corps to develop a PEIS that evaluates the environmental, social, and economic impacts of offshore wind 24-1

396 Main Street, Hyannis, Massachusetts 02601 · 508-775-9767 · Fax 508-775-9725

a 501(c)(3) tax-exempt organization

energy plants, to determine appropriate siting parameters and to establish a national management approach. In short, we have recommended that the Corps follow for offshore wind the same basic approach the BLM is following for onshore wind energy development. Wind energy will play an important role in the renewable energy portfolio for the nation, but only if it is properly managed so as to minimize impacts and protect the nation's natural resources. To do so, it is necessary first to evaluate the impacts of wind energy development on a region-wide or national basis. Through the PEIS, BLM has taken the first necessary steps to do that; unfortunately, the Corps has not. Indeed, as the Corps itself admits, it is not the appropriate agency to manage this program, yet it is continuing to do so despite glaring deficiencies.

During the review of the Cape Wind project, a few groups have argued that the Corps should review the project application, despite the lack of any federal authorization, so that wind energy development is accelerated. Your PEIS confirms what the Alliance has repeatedly argued – i.e, that implementation of a region-wide Wind Energy Development Program would likely result in shorter time lines and reduced costs for wind energy projects. In fact, as you conclude, a Wind Energy Development Program, if properly implemented, should facilitate development and ensure consistency in the review of onshore wind energy applications. Such a plan would also identify specific lands on which wind energy development would not be allowed, and would establish environmentally sound and economically feasible mechanisms to protect and enhance natural and cultural resources. 24-1 (cont.)

Despite the obvious value of developing a national or region-wide policy for siting and mitigation of environmental effects on federally-administered public lands, the Corps has steadfastly refused to follow such an approach. The review of the first proposed offshore facility has consequently suffered from inadequate data and lack of context for its review. The Army Corps would benefit significantly from undertaking an approach similar to this one by the BLM. We offer the following comments regarding this PEIS that we believe would assist in strengthening this document.

Specific comments on the PEIS

Purpose and Need and Alternatives

The PEIS does not clearly explain the rationale behind limiting its review to wind energy only. As currently drafted, the PEIS considers three main policy approaches: 1) a program to facilitate further wind energy development (Wind Energy Development); 2) limit further wind energy development; and 3) no-action alternative 24-2

of continuing the current interim wind energy development policy under which NEPA and related analyses are limited to a project-by-project basis, without the benefit of programmatic policies on siting criteria, mitigation and other parameters.

Other renewable technologies, however, are available and should be considered in this PEIS. It is clear that the western states possess significant wind energy potential. Indeed, it is estimated that the wind energy resources of the western states could supply more than five times the region's current electricity consumption. The Purpose and Need section apparently relies on the National Energy Policy as the motivating factor or justification for the PEIS. The National Energy Policy's recommendation, however, is for the Departments of Interior, Energy, Agriculture, and Defense to work together to increase renewable energy production, not merely wind energy. The PEIS should address other technologies that are feasible, such as solar, geothermal, hydroelectric, etc. for comparison purposes.

Further, it is important to provide context for the review of alternatives. For that purpose, it is necessary to look at conventional technologies as well. These technologies are obviously reasonable alternatives to renewable technologies. The impacts of such technologies differ. As such, they need to be considered in the NEPA review so that agencies are able to comply with NEPA's mandate to conduct environmentally-informed decisionmaking by understanding the relative benefits and adverse impacts of the technology. If other documents are to "tier" off of this PEIS, it is necessary to discuss these technologies. 24-2 (cont.)

Because the PEIS fails to consider other technologies, there is insufficient information available to determine whether any one of the three approaches reviewed is the best management approach to be adopted. While the Alliance has consistently advocated the development of criteria and standards that would apply on a region or nation-wide basis to all offshore wind energy proposals, it is necessary to first determine whether the social, economic and environmental impacts associated with wind energy do not exceed those of other technologies or whether in certain cases, other approaches are more environmentally, socially or economically sound. Whether facilitating the development of wind energy is a good management approach depends on resolution of these questions.

December 14, 2004
Page 4

Impacts on Avian Resources

In addition, further research is needed on the impacts of onshore wind facilities on wildlife and other ecological resources. Like any other use of federal lands, wind energy development is subject to thorough, site-specific analysis and public participation in the planning process as mandated by NEPA, Federal Land Policy Management Act, Migratory Bird Treaty Act (MBTA), Endangered Species Act, and other federal law. The PEIS does not adequately consider these authorities, particularly with respect to the MBTA. The PEIS gives short shrift to the potential conflict between the MBTA and the development of wind energy. This is an area of significant controversy and how this issue can be reconciled with a policy of facilitating wind energy should be addressed more thoroughly. 24-3

More robust development of sections dealing with avian impacts is necessary. There have been a number of instances where impacts on birds have been quite significant and on a cumulative basis, the impacts can be devastating. Where a project is sited and the type of turbines used are both critical elements for determining the level of anticipated bird impacts. The PEIS does not satisfactorily address these issues. Multi-year studies using remote sensing equipment are necessary for determining the impacts of such projects on wildlife. In addition, it is necessary to consider the impacts the changing technology, including the impacts of using larger turbines with faster rotor speeds on bird and bat populations.

Best Management Practices and BLM Policies

The Alliance approves of the BLM's decision to exclude Wilderness Areas, Wilderness Study Areas, National Monuments, Wild and Scenic Rivers, National Historic and Scenic Trails, Areas of Critical Environmental Concern and other areas from wind energy development. Such an approach acknowledges that certain areas have inherent natural, cultural, recreational, aesthetic or other values with which wind energy development is fundamentally inconsistent. Development in such areas would severely and adversely impact those values and is simply not appropriate. 24-4

Further, because not all such areas are identified with the designations listed in the BMP, it is important that BLM provide a mechanism for evaluating specific areas not so designated, but that nonetheless have unique values that would be degraded by wind energy development. The Alliance recommends that the BLM formulate a system that allows interested parties to identify such areas and directs BLM decision-making officials, through established criteria and standards, how to evaluate those

areas. In addition, the Alliance believes that the competitive bidding process should allow for interested parties, such as environmental organizations or citizen groups interested in the preservation of specific areas, to participate so that they have an opportunity to preserve valuable natural resources. 24-4 (cont.)

Finally, while the Alliance believes that the PEIS should be used to facilitate development of onshore wind facilities, it does not eliminate the need to consider alternatives and other statutory authorities for site-specific projects. It is not clear from the BMPs how the analyses of alternatives will proceed for site-specific projects, under either NEPA or the National Historic Preservation Act (NHPA). The PEIS indicates that where cultural resources are involved, a cultural resource management plan should be developed with mitigation measures, including potential avoidance of the site. How the BMPs integrate with NEPA and the NHPA alternatives review should be more explicit. The purpose of the PEIS is to address general issues, such as why wind technology may be preferable. The agency must still consider alternatives to the specific project proposed. The PEIS cannot substitute for an alternatives analysis in an individual case and still satisfy NEPA. 24-5

We appreciate the opportunity to offer comments on the Wind PEIS and look forward to continuing our participation in this important undertaking.

Very truly yours,

Susan L. Nickerson
Executive Director

cc: Senator Edward Kennedy
Congressman William Delahunt
Governor Mitt Romney
Massachusetts Attorney General Thomas Reilly
Charles R. Smith, U.S. Army Corps
Colonel Koning, U.S. Army Corps

Christine Godfrey, US Army Corps
James Connaughton, Council Environmental Quality
Dinah Bear, Council Environmental Quality
Horst Greczmiel, Council Environmental Quality
Elizabeth Higgins, U.S. Environmental Protection Agency
Timothy Timmerman, U.S. Environmental Protection Agency
Vernon Lang, U.S. Fish and Wildlife
Edward LeBlanc, U.S. Coast Guard
Barry Drucker, Mineral Management Service
Susan Snow Cotter, Massachusetts Coastal Zone Management Office
Jack Terrill, National Marine Fisheries Service
Al Benson, U.S. Dept. of Energy
Ellen Roy Herzfelder, Executive Office Environmental Affairs
Phil Dascombe, Cape Cod Commission
Truman Henson, Massachusetts Office of Coastal Zone Management

Responses for Document 00024

00024-001: Your comment addresses issues that are beyond the scope of the PEIS, the mission and responsibilities of the BLM, and/or the defined programmatic scope of the proposed Wind Energy Development Program. We appreciate your input and participation in the public review process.

00024-002: As stated in Chapter 1, the National Energy Policy recommends that the Department of the Interior work with other federal agencies to increase renewable energy production on public lands. The BLM has focused on wind energy development in this PEIS, in part, in response to the number of ROW applications it has received.

00024-003: The PEIS identifies and discusses in Section 3.2 the regulatory authorities identified in the comment. The MTBA is further discussed in Section 4.6.2.2.6. As required by the Wind Energy Development Program proposed policies and BMPs, all wind energy projects proposed for BLM-administered lands will be required to comply with the requirements of NEPA, the ESA, the MTBA, and other applicable regulations and requirements. The requirements for that compliance will be determined at the project level in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Specification of the nature and form of that compliance is beyond the scope of this PEIS.

Site-specific impact analyses are beyond the scope of the PEIS. The PEIS identifies the types of potential impacts that ecological resources may incur from a wind energy development, on the basis of impacts that have been reported at existing facilities. As required by the Wind Energy Development Program proposed policies and BMPs, site-specific analyses, including the identification of potential impacts, will be conducted for any proposed project on BLM-administered lands. The scope and approach for site-specific analyses will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Through this process, the BLM will develop project-specific siting and design stipulations for incorporation into the POD.

In addition, the level of environmental assessment to be required under NEPA for individual wind energy projects will be determined at the Field Office level. In certain instances, it may be determined that a tiered EA is appropriate in lieu of an EIS. These site-specific NEPA analyses will include analyses of project site configuration and micrositing considerations, construction and operation impacts, and appropriate mitigation measures. No text change has been made to the document in response to your comment. In addition, to address concerns regarding multiyear data collection and potential future changes to technology, the proposed Wind Energy Development Program requires the incorporation of adaptive management strategies and monitoring programs at all wind energy

development sites (see Section 2.2.3.1, Proposed Policies, last bullet, and Section 2.2.3.2.2, Plan of Development Preparation, General, 7th bullet). The application of adaptive management strategies will ensure that programmatic policies and BMPs will be revised as new data regarding the impacts of wind power projects become available. The source for a significant portion of the new data is likely to be the required site-specific monitoring programs that will evaluate environmental conditions at a site through all phases of development. A key requirement for the site-specific monitoring programs is the requirement that monitoring observations and additional identified mitigation measures be incorporated into standard operating procedures and project-specific BMPs. No text change has been made to the document in response to your comment.

00024-004: Exclusion of specific areas from wind energy development will be determined at the project level as part of the site-specific analyses. As required by the Wind Energy Development Program proposed policies and BMPs, site-specific analyses will be conducted for any proposed project on BLM-administered lands. The scope and approach for site-specific analyses will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders, including environmental organizations and groups interested in the preservation of specific areas.

No interest was expressed in competitive bidding during scoping, and none has been expressed by BLM Field Offices or industry. Thus, competitive bidding was not considered in the PEIS.

00024-005: The evaluation of alternative wind energy development sites involves interactions between industry and the BLM regarding possible sites prior to submittal of a ROW application for development. These interactions often serve to screen out sites that are unsuitable for development for a variety of reasons. This PEIS further supports the identification of appropriate sites for development. Once a site is selected both on the basis of the environmental screening process and the presence of economically developable wind energy resources, the alternatives under consideration are essentially limited to the proposed action to develop the site and the no action alternative. The key questions in the project-specific NEPA analyses for the proposed action address the project site configuration and micrositing considerations and development of an appropriate monitoring program and appropriate, effective mitigation measures. As stated in the 9th bullet under Section 2.2.3.1, Proposed Policies, the project-specific NEPA analyses will include analyses of monitoring program requirements and appropriate mitigation measures.

A new bullet has been added to the proposed policies (Section 2.2.3.1) specifying that the BLM will conduct Section 106 consultations on all wind energy development projects on BLM-administered lands.

Document 00025

STATE OF NEVADA
DEPARTMENT OF CULTURAL AFFAIRS
Nevada State Historic Preservation Office
100 N. Stewart Street
Carson City, Nevada 89701
(775) 684-3448 • Fax (775) 684-3442
www.nvshpo.org

KENNY C. GUINN
Governor

SCOTT K. SISCO
Interim Director

RONALD M. JAMES
State Historic Preservation Officer

RECEIVED
NOV 29 2004
DEPARTMENT OF ADMINISTRATION
OFFICE OF THE DIRECTOR
BUDGET AND PLANNING DIVISION

November 29, 2004

MEMORANDUM

TO: Mike Stafford, Nevada State Clearinghouse Coordinator

FROM: Alice M. Baldrica, Deputy SHPO

SUBJECT: DEPIS Wind Energy Development Program NV SAI# E2005-064

I reviewed the draft programmatic EIS on wind energy development. The Bureau of Land Management understands its obligations to satisfy the provisions of the National Historic Preservation Act and a number of other laws that protect historic and archaeological sites eligible for inclusion in the National Register (historic properties) The BLM has devised a number of policies and BMPs (best management practices) to ensure that each BLM state office and district and field office operates under the same procedures and that applicants know up front the means in which historic properties would be identified, evaluated and treated. Although the potential for affecting historic properties exists, implementation of the procedures in this PEIS for each project will minimize effects. In particular, the Nevada SHPO supports the proposed CRMP (cultural resources management plan) to be developed for each project where historic properties are located. Devising and implementing a monitoring plan, taking measures to prevent soil erosion and looting and providing worker education, will all reduce foreseeable impacts to historic properties. 25-1

Regarding effects to historic properties eligible under criterion a of the Secretary of Interior's criteria of significance, it may be possible, on a case-by-case basis, to examine color, design and placement of wind turbines to lessen impacts. Although this is not something that could be part of the BMPs or policies it is worth mentioning that treatment could include these measures. 25-2

Last, it would be helpful if the glossary could include a definition of "adaptive management strategies" so those of us not internal to BLM could understand what this entails. 25-3

Please call me at 775-684-3444 if you have any questions regarding these comments.

Responses for Document 00025

00025-001: Thank you for your comment.

00025-002: These types of considerations are included as part of a visual resources BMP for wind development in general.

00025-003: The term "adaptive management" has been added to the glossary.

Document 00026

Mike Stafford

From: James Morefield [jdmore@heritage.nv.gov]
Sent: Tuesday, November 30, 2004 12:50 PM
To: ~~Mike Stafford~~
Cc: Jennifer Newmark
Subject: RE: SAI#E2005-064 DPEIS Wind Energy Development Program

This is the Nevada Natural Heritage Program's response to the Nevada State Clearinghouse item referenced below. Please contact us if this response is needed in hard-copy or another format. Otherwise hard-copy will be retained in our files according to our Records Retention Schedule.

NEVADA SAI#: E2005-064
PROJECT: DPEIS Wind Energy Development Program
COMMENTS DUE: 30 November 2004

AGENCY COMMENTS:

Best Management Practices: Ridgeline habitats themselves should also be considered among the sensitive habitat types addressed by the proposed Best Management Practices (BMPs) in the DPEIS. Numerous rare and sensitive plant species specialize in such habitats, making it relatively likely that any given ridgeline area will contain sensitive resources, either already known or yet to be surveyed and documented. BMPs for such habitats should include 1) pre-design and/or pre-disturbance surveys at appropriate times of year, and by biologists well-qualified, for detecting sensitive and/or previously unknown resources, and 2) where possible, avoiding impacts to any such resources found by locating tower bases, access roads, and other project elements as far off-center from ridgelines as feasible (perhaps by using somewhat taller structures), without conflicting with other BMPs designed to minimize erosive impacts to side-slope areas. 26-1

Page 4-15, table 4.6.2-1: Nevada numbers of taxonomic groups should read 17 amphibians, 57 reptiles, 132 mammals and 283 birds (for birds only, this number excludes both accidentals and exotics). 26-2

Page 4-21, 4.6.2.2.5: Nevada has 26 species of raptors, owls, and vultures (not the 15 reported in the DPEIS) 26-3

Page 4-23, Table 4.6.2-3: Nevada has 18 species of Vespertilionidae (not 17 as reported in the DPEIS) 26-4

Page 4-25, 4.6.4: Nevada has about 660,000 acres of vegetated wetlands. This number does not include playas. The reported 236,349 acres grossly underrepresents the amount of wetlands available in the state. 26-5

Page 4-26, Table 4.6.4-1: Total wetland acres for Nevada should read 660,000. Note that this number does not include desert playas. Wetland loss is probably greater than 52%. This number was derived from a study (FWS National Wetland Inventory) that used limited data and therefore this number probably underestimates the actual loss of wetlands in the state. 26-6

Page 4-28, Table 4.6.5-1: Nevada numbers are incorrect. They should read, 22 Endangered, 16 Threatened, and 9 Candidate. 26-7

Page 4-29, Table 4.6.5-2: Nevada numbers are incorrect. They should read: Endangered: 2 plants, 1 invertebrate, 17 fish, 0 amphibians, 0 reptiles, 0 mammals, 2 birds.
Threatened: 7 plants, 1 invertebrate, 6 fish, 0 amphibians, 1 reptile, 0 mammals, 1 bird. Candidate: 4 plants, 1 invertebrate, 0 fish, 3 amphibians, 0 reptiles, 0 mammals, 1 bird. 26-8

Page 4-31, Table 4.6.5-4: Total numbers of taxa on Federal and State lists (including NNHP Watch and Sensitive Lists) should read: 328 plants, 195 invertebrates, 64 fish, 8 amphibians, 13 reptiles, 55 mammals, 39 birds. 26-9

Page 5-42, 5.9.2.2.1, last paragraph: The statement "... fewer impacts would be expected for wind projects located on previously disturbed lands (e.g. mining sites)" can be misleading. Some mine sites are very attractive to bats and some species will congregate in very large numbers in suitable sites. In such sites, impacts could be significantly greater. 26-10

Page 5-54, Table 5.9.3-2: Collision with turbines, towers, and transmission lines: "on-site, low magnitude but long term". It is misleading to say that effects are low-magnitude. In some areas, effects are very significant and would be better characterized as "high magnitude". Many current wind farms are not monitored frequently enough to detect all mortality from collisions. Especially with regards to bats, lack of knowledge and very little research limits our ability to accurately qualify collision rates as "low magnitude". This statement implies that collisions do not present a significant impact but in reality, we do not know enough to say this. It would be more accurate to describe these effects as "low to high magnitude depending on site". 26-11

Page 5-60, 5.9.3.2.3, "Birds conducting long-range migrations are not likely to be impacted....." Many raptors use ridgelines with significant concentrations of wind to aid them in their migrations. It would seem that a large wind farm on such a ridge could significantly impact these migrating birds.

Page 5-65, 5.9.3.2.3, 1st paragraph: In theory, at specific locations, specific species may be killed in large numbers which may represent a significant impact to their population. To make generalizations that collisions with turbines are not biologically significant is misleading - there are not adequate data to support this conclusion. 26-12

Page 5-65, 5.9.3.2.3, Bat collisions: There are 45 species of bats in the US (Bat Conservation International) 26-13

Page 5-67, 5.9.3.2.3, 2nd paragraph: It is extremely important to note that reported numbers of dead bats do not necessarily represent actual mortality counts. Dead bats are very difficult to find, and to accurately assess the numbers killed, searches must be conducted on a daily basis (or even two times a day). Without knowing the survey methods and the frequency of these surveys, reported numbers of dead bats do not accurately represent the impact of wind turbines. Most likely, reported numbers significantly under-represent actual mortality. 26-14

Page 5-69, Text box titled "Compatibility of a wind energy development.....bats":

* First paragraph. Without knowing survey protocols and frequency, reported numbers do not adequately represent the impact of wind turbines on bats. To say that "relatively low numbers of bat fatalities are generally observed" is completely misleading without knowing how often dead bats were searched for. In a Feb 2004 workshop, bat experts, wind industry representatives, and federal and state agencies all agreed that lack of adequate information and consistent survey methods that can be compared across sites is a significant problem that needs to be addressed and because of this, broad conclusions about impacts to bats cannot be drawn. 26-15
* The text box discusses certain species that are expected to be minimally impacted (although these conclusions are based on very limited and preliminary data and therefore such conclusions can be misleading), but it does not discuss the species that have been effected by wind energy developments such as hoary bats and silver-haired bats. 26-16
* On page 5-70, the statement "bats generally do not forage above 25m..." is erroneous - some species such as Brazilian free-tailed bats (Tadarida brasiliensis) have been shown to actively forage thousands of feet above ground. Many species that forage in forests with trees above 82 ft forage above the treeline. All of the molossids and most of the lasiurines spend time above 25meters. Spotted bats and big browns have also been observed foraging over 25 meters. Therefore, conclusions that height of blades on new generation turbines will decrease interactions between bats and blades are completely unwarranted. In addition, preliminary data presented at the North American Symposium on Bat Research (held in Salt Lake City, October 2004) show that bats are attracted to moving blades and that some bats are actively interacting with those blades. 26-17
* At a minimum, mitigation measures should include a strong monitoring and research component. The monitoring component should include adaptive management criteria that incorporates current expert input (there are working groups currently formed that are addressing issues regarding bats and wind turbines) as well as an appropriate frequency of surveys that will provide data on the true impacts to bats. Research should be conducted to explore the reasons why bats may be attracted to wind turbines and what types of deterrents may be effective. 26-18
* The last statement of the text box, "with proper design and 26-19

siting....bat mortality can generally be reduced to relatively insignificant levels" is premature and misleading. We simply have not conducted enough research to draw such conclusions. 26-19 (cont.)

Page 5-83, 5.9.5.4.3: Effective monitoring programs should be added as a mitigation for wildlife interactions. Adequate monitoring is critical and should be a part of all mitigation procedures. In addition, because so little is known with respect to interactions between wildlife, particularly bats, and wind turbines, research should also be added to mitigation measures as well as adaptive management components based on the outcomes of such research. This would include research on the cumulative effects of the entire operation on wildlife. 26-20

Page 5-84, 5.9.5.6: We disagree with and object to the statement, "Biota protected by state statutes should be relocated." The vast majority of T&E species, especially plants, are habitat-specific and cannot simply be relocated. Short-term translocation, even if initially successful, rarely results in long-term survival. Instead, relocation of project components should be pursued when there is a conflict with statutorily protected species. 26-21

The overall tone of this DPEIS downplays the potential impacts on wildlife. We do not have adequate data to draw conclusions that bird and bat collisions will result in minimal impacts to species. Cumulative impacts from a large scale project on wildlife is completely unknown and while the DPEIS discusses each of these impacts individually, there is no analysis of potential impacts of the entire project. While collisions with turbines may be minimal in a particular area, or habitat fragmentation from a road might be minimal, these impacts taken together may have very significant effects on local ecosystems or populations of species. 26-22

There are two new references that should be added to the DPEIS:
Proceedings of the Bats and Wind Power Generation Technical Workshop, sponsored by Bat Conservation International, US Fish and Wildlife Service, US Department of Energy's National Renewable Energy Laboratory and the American Wind Energy Association, Hosted by FPL Energy 19-20 February 2004 (available through BCI's website at www.batcon.org) 26-23
Proceedings of the Wind Energy and Birds/Bats Workshop: Understanding and Resolving Bird and Bat Impacts. Washington, DC. May 18-19, 2004. Prepared by Resolve, Inc., Washington,, D.D., Susan Savitt Schwartz, ed. September 2004.

Thank you for the opportunity to review and comment on this DPEIS.

(signed) Jennifer Newmark, Biologist III, and
James D. Morefield, Biologist III/Botanist
Nevada Natural Heritage Program
30 November 2004

~^~^~^

Responses for Document 00026

00026-001: The Wind Energy Development Program proposed policies and BMPs require site-specific analyses, including surveys of rare and sensitive species and their habitats, as part of the preparation of the Plan of Development for all wind energy projects proposed for BLM-administered lands. The scope and approach of such analyses will be determined on a project-by-project, site-specific basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. The intent of these analyses is to provide precisely for the concern identified in the comment, namely to avoid or minimize environmental impacts. Site-specific analyses are beyond the scope of the PEIS.

00026-002: The text has been revised to update the numbers of taxonomic groups for Nevada.

00026-003: A previous comment from the Nevada Department of Wildlife stated that there are 31 species of raptors in Nevada, and not 26 as indicated in this comment. In both comments, the totals suggested represented the sums of raptors, falcons, owls, and vultures, which are presented separately in the PEIS. Because of the discrepancies in total bird-of-prey species numbers for Nevada, the numbers listed in the document have been retained, reflecting species counts obtained from the Nevada Natural Heritage Program as cited.

00026-004: The text has been revised as suggested.

00026-005: Table 4.6.4-1 has been revised to indicate there are an additional 760,000 acres (307,562 ha) of playa wetlands for Nevada; however, no change has been made to the text in Section 4.6.4. The text and table, which state that the wetland numbers are based on estimates from the 1980s, present wetland information to provide a basis for the importance and scarcity of wetlands in the 11 western states. Revising the Nevada numbers would make interpretation of Table 4.6.4-1 difficult because of the time differences between the reported wetland numbers. Revision of all of the wetland estimates would not result in a change in the conclusions of the analysis nor in the proposed policies and BMPs regarding wind energy development and wetlands on BLM-administered lands.

00026-006: The table has been updated to include recent estimates of playa wetlands.

00026-007: The numbers reported in the referenced table were obtained from the U.S. Fish and Wildlife Service Threatened and Endangered Species System, March 15, 2004, and are correct as cited. While some changes in the listing have occurred since that time for Nevada and the other states, the stated numbers are correct for the cited data. Revision of the document to incorporate changes in these numbers since release of the draft PEIS is not warranted, as the information provided is intended to inform the reader that there are numerous species listed under the Endangered Species Act within each state, and that considerations of

these species and their habitats will be a critical component in any wind energy development project that is proposed for BLM-administered lands. Any related changes to the document would not change the required considerations of these species for any future wind energy projects. No text change has been made to the document in response to your comment.

00026-008: Comment noted. No text change has been made to the document in response to your comment. Please see response to Comment 26-007.

00026-009: Comment noted. The numbers cited in the table were obtained from the Nevada Natural Heritage Program Detailed Rare Animal List of March 18, 2004, and the Detailed Rare Plant and Lichen List of March 18, 2004, and are correct for the citation. While the numbers may have changed since that date for these species in Nevada (and probably other states as well), this information is provided to indicate that there are numerous species within the states that are considered threatened, endangered, rare, etc., and that regardless of the number present, these species will be considered for all wind energy development projects proposed for BLM-administered lands. No text change has been made to the document in response to your comment.

00026-010: The text has been revised to state that, in general, fewer impacts would be expected, and the mining site example has been revised to "open pit mining sites."

00026-011: The table has been revised to indicate that there is a potential for long-term, low-magnitude effects for many species, while population-level effects could be incurred by other species.

00026-012: The text is not making the generalization that collisions with turbines are not biologically significant. The text (next to last sentence of the paragraph) states that researchers estimating mortality at one facility concluded that the mortality they estimated was not significant. The previous sentence states that population effects may be possible, although no studies to date have documented such effects. Table 5.9.3-2 indicates possible population- level effects for some species. No text change has been made to the document in response to your comment.

00026-013: Comment noted. The text has been revised as suggested.

00026-014: Text has been added to this section to state that survey methods used at different sites may or may not be equivalent and may not accurately estimate mortality levels. The Wind Energy Development Program proposed policies and BMPs identified in Section 2 establish the need for site-specific bat surveys (and surveys of other biota) to be developed on a project-by-project basis, and that any such survey designs be scientifically defensible.

00026-015: Comment noted. The text has been revised to indicate that bat mortality surveys conducted at existing facilities may not be equivalent and may have understated actual mortality levels. The intent of presenting these available data is to demonstrate that bat mortalities have occurred at wind energy facilities, and that even with nonequivalent methods, continuous large-scale mortalities have not been reported. The Wind Energy Development Program proposed policies and BMPS identified in Section 2 of this document establish the need for bat surveys to be developed on a site-specific, project-by-project basis, and that the studies be scientifically defensible.

00026-016: Text has been added discussing both the hoary and silver-haired bats.

00026-017: The text referring to the heights that bats forage or fly has been deleted from the text box.

00026-018: As required by the Wind Energy Development Program proposed policies and BMPs, site-specific analyses, including the development of a comprehensive monitoring program, will be conducted for any wind energy project proposed for BLM-administered lands, and adaptive management strategies will be incorporated into any such studies. The scope and approach for the site-specific monitoring programs will be determined on a project-by-project basis in conjunction with input from federal, state, and local agencies, and interested stakeholders. The application of adaptive management strategies will ensure that programmatic policies and BMPs and site-specific stipulations will be revised as new data regarding the impacts of wind power projects become available. The source for a significant portion of the new data is likely to be the required site-specific monitoring programs that will evaluate environmental conditions at a site through all phases of development. New research will also be incorporated as it becomes available.

00026-019: Comment noted. The policies and BMPs that are part of the Wind Energy Development Program described in the PEIS were developed to mitigate the potential for adverse impacts for any wind energy development project proposed for BLM-administered lands. It is fully expected that the implementation of site-specific surveys, siting considerations, and monitoring programs that have been developed in conjunction with other federal, state, and local agencies, and interested stakeholders will reduce the potential for adverse impacts to bats. However, the text has been slightly revised for clarity.

00026-020: Scientifically defensible monitoring programs and the application of adaptive management strategies are specified by the Wind Energy Development Program proposed policies and BMPs, and will be required for all wind energy projects proposed for BLM-administered lands. The monitoring program would be developed in conjunction with input from other federal, state, and local agencies, and interested stakeholders and would be developed on a site-specific, project-by-project basis, and are beyond the scope of this document. The

requirement for research is beyond the scope of the PEIS or the Wind Energy Development Program, and any such research would be conducted at the discretion of the wind energy development applicant. No text change has been made to the document in response to your comment.

00026-021: This statement has been deleted. In addition, a BMP has been added to Section 2.2.3.2.2, Plan of Development Preparation, under the Wildlife and Other Ecological Resources heading, stating that the BLM will prohibit the disturbance of any population of federal listed plant species.

00026-022: The data presented in this document summarize the impacts that have been reported for a number of existing wind energy projects. While these data are based on a variety of investigations that use variable methods and approaches, the document correctly states that to date, no studies have indicated population-level effects from any existing wind energy facility. The document does point out that population effects are possible for some species, but such a determination is beyond the scope of the PEIS and the Wind Energy Development Program. The program will require site-specific pre- and post-siting and construction surveys and monitoring programs, as well as monitoring programs during facility operations, that are scientifically defensible and implemented to include adaptive management strategies. Site-specific NEPA analysis will also be required for each wind energy facility. This will include the need for a cumulative impact assessment of not only the individual components of the wind energy facility, but other past, present, and reasonably foreseeable actions that could affect ecological resources in the project area. No text change has been made to the document in response to your comment.

00026-023: The references presented in Section 8 are limited to those materials that were specifically used and referenced in the PEIS. We did review the materials from the February 2004 workshop but did not cite them directly. The proceedings from the May workshop were not available at the time the Draft PEIS was prepared; subsequent review indicated that these proceedings do not include information that would alter the conclusions of the PEIS or result in a change in the proposed Wind Energy Development Program described in the PEIS.

Document 00027

DALE J. HOAG LARRY HANDY RICHARD L. (Dick) DOWNEY
CUSTER COUNTY COURTHOUSE 205 SOUTH 6th STREET
P.O. BOX 150

WESTCLIFFE, COLORADO 81252 (719) 783-2552
FAX (719) 783-2885 custercoC ris.net

November 26, 2004

Mr. Roy L. Masinton, Field Manager Royal Gorge Field Office
Bureau of Land Management 3170 East Main
Canon City, Colorado 81212
Reference

1793 (CO-200)PZ
Dear Mr. Masinton,
This is in reference to your letter of September 10,2004, regarding the Draft Programmatic Environmental Impact Statement (DPEIS) on Wind Energy Development on BLM-Administered Lands in the Western United States, including Colorado. Upon receiving this letter, the Custer County Board of County Commissioners reviewed the information and the DPEIS. I also spoke with Pete Zwaneveld by telephone to learn more of what your office is required to do regarding the planning process. After reviewing this information, the Custer County Board of County Commissioners is taking the following position/s.

Custer County is, one of the few high elevation unspoiled areas with beautiful mountain vistas and lush valley views remaining in Colorado. The Sangre de Cristo Mountains on the west and the Wet Mountain range on the east frame the county. Ranching continues to protect much of the Wet Mountain Valley and adjoining areas. Nearly 40 percent of the county consists of public lands including wilderness. This protected habitat provides for abundant wildlife including endangered species. And, these values contribute in large part to the culture that is Custer County.

Much of the local economy is built upon the desirability of these values which draw tourist, weekenders and part time residents here for recreation such as hiking, camping, equine activities, mountain climbing etc. Many people have invested life savings to build homes and horse properties in Custer County to be able to live in a relative unspoiled environment with the culture, natural beauty and values found here. 27-1

Many years ago, county commissioners recognized the importance that the citizens and the public in general placed on the natural values of this area and made special efforts to protect it. Among these efforts was the adoption of a zoning resolution that significantly

limits housing density and restricts the height of structures to a maximum of 25 feet on level ground.

Taking all of this into consideration, it should be obvious that placing 200 to 300 foot tall wind turbine towers on the landscape of Custer County would run contrary to all the efforts made (to date) to protect this very special place. Installing such equipment in this area would have a devastating effect on the environment, economy, natural view sheds and sociocultural considerations. Other negative impacts would include the loss of protected and endangered wildlife such as the golden eagle and the bald eagle that nest in the area. The disturbance of large tracts of public land along with the noise, that accompanies the turbines, would further reduce winter habitat for large wildlife including elk, antelope and,, deer. There are no mitigation measures that could be implemented that would justify construction of large wind turbines. 27-1 (cont.)

Custer County Commissioners are very well aware of the need for renewable energy production through wind generation and support it's use where appropriate. However, we also recognize that, due to the above listed negative impacts (others could be added including public sentiment and violation of local height restrictions), large wind energy structures are not suitable for public lands in Custer County. Therefore, as you complete the environmental impact statement, we ask you to recognize and identify all of Custer County as an area within which wind energy development would be excluded on public lands administered by the BLM.

Sincerely,

Richard L. Downey County Commissioner

Response for Document 00027

00027-001: Exclusion of areas from wind energy development will be determined at the project level as part of the site- specific analyses. As required by the Wind Energy Development Program proposed policies and BMPs, site-specific analyses will be conducted for any proposed project on BLM-administered lands. The scope and approach for site-specific analyses will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. It has been proposed to amend the Royal Gorge RMP land use plan to adopt the proposed policies and BMPs (see Appendix C).

Document 00028

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

IN REPLY REFER TO:
FWS/DHRC/BAPHC

JAN 07 2005

Mr. Lee Otteni
Bureau of Land Management Wind Energy Programmatic EIS
Argonne National Laboratory EAD/900
9700 S. Cass Avenue
Argonne, Illinois 60439

Dear Mr. Otteni:

The Fish and Wildlife Service has reviewed the Draft Programmatic Environmental Impact Statement on Wind Energy Development on Bureau of Land Management-Administered Lands in the Western United States. Thank you for the opportunity to comment.

The enclosed comments and recommended changes are provided for your consideration. Please contact Dr. Benjamin N. Tuggle, Chief, Division of Habitat and Resource Conservation, at (703) 358-2161, if you have any questions or need further information.

Sincerely,

Steve Williams

DIRECTOR

Enclosure

cc: 3238-MIB-FWS/Directorate Reading File
3238-MIB-FWS/CCU Files
3245-MIB-FWS/AFHC Files
840-ARLSQ-FWS/DFHC Files
400-ARLSQ-FWS/DHRC Files
400-ARLSQ-FWS/DHRC/BAPHC Files
400-ARLSQ-FWS/DHRC/BAPHC Staff

FWS/DHRC/BAPHC/RWillis/im:12/13/04:703-358-2183
S:/DHC/BFA/WILLIS/EC04-0015 11-26.doc

Fish and Wildlife Service Comments on the Draft Programmatic Environmental Impact Statement on Wind Energy Development on the Bureau of Land Management Administered Lands in the Western United States

General Comments

As a general note, our comments are made pursuant to the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703), the Bald and Golden Eagle Protection Act (BGEPA)(16 U.S.C. 668), the Fish and Wildlife Coordination Act (FWCA)(16 U.S.C. 661 *et seq.*), the U.S. Fish and Wildlife Service Mitigation Policy (*Federal Register*, Friday, January 23, 1981, page 7656), and the National Environmental Policy Act (NEPA)(40 CFR Parts 1500-1508). There are additional executive orders and agency policies that would also apply, specifically where wetland impacts may result from wind development projects. Because wetlands and other sensitive habitats have not been screened from lands available for wind power development, related issues will have to be addressed on a project-specific basis. Federally listed species are also subject to separate consultation requirements pursuant to ESA Section 7.

The draft PEIS provides a very broad analysis of potential wind energy projects on Bureau of Land Management (BLM)-administered lands across 11 States. It is our understanding that BLM intends to utilize this programmatic approach to streamline subsequent consultation requirements required by myriad environmental statutes. Each proposed wind energy project would be analyzed independently to determine potential environmental effects. We encourage BLM to work directly with the U.S. Fish and Wildlife Service (Service) staff to develop site-specific surveys, impact minimization measures, and conservation measures for all species and habitats potentially affected by individual wind energy projects. These cooperative efforts should yield project-specific measures that would be included in design proposals and expedite the environmental review process. We appreciate the attention that BLM gave to the Service's *Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines* (May 13, 2003), and believe they can serve an important role in helping streamline project-specific consultation requirements in the future. 28-1

We believe the PEIS would benefit from a broader description of renewable energy, and wind energy in particular. Specifically, we believe BLM should consider providing more context in the Purpose and Need and Alternatives sections, helping to evaluate and answer the questions 1) why renewable energy, and then, 2) why wind energy in particular. This discussion would be most beneficial if it includes further explanation about the benefits and environmental costs on wind energy. 28-2 Second, we believe the PEIS would be strengthened by addressing the spatial and temporal use of the airspace by birds, bats, and insects in the Class 3 or higher wind resource areas identified by the Department of Energy/National Renewable Energy Laboratory (DOE/NREL) in the Maximum Potential Development Scenario (MPDS). While the PEIS does identify high wind resource areas, we believe it would benefit by providing equivalent data on the use of this same air space by birds, bats, and insects, to the extent it is available. This important information would make it much easier for partners to determine which general areas and specific sites would have minimal environmental impacts. This would allow partners to quickly identify the areas where project implementation would be most streamlined. It would 28-3

also add to the baseline information that would assist in determining potential impacts during site-specific evaluations. We would be happy to direct you to information at our disposal to help facilitate this key discussion in the final PEIS. 28-3 (cont.)

The draft PEIS states that the wind energy program would incorporate adaptive management strategies to ensure that potential adverse impacts related to wind projects were mitigated to the fullest extent possible. We also recommend that BLM consider using adaptive management techniques to evaluate and improve projects with appropriate best management practices (BMPs). Subsequent monitoring and evaluation would be used to confirm the efficiency of the BMPs and to modify the project as necessary to achieve predefined goals and objectives. The Service is committed to helping BLM and project applicants develop monitoring and research needs prior to construction of the project, and recommends this early partnership become standard practice. Monitoring protocols are most effective when they include measurable performance criteria met within time frames appropriate to sensitive periods in the life histories of species of concern, or recovery rates of site-specific vegetation and soil types. To the extent possible, protocols should also establish "triggers" or thresholds for remedial action. The Service welcomes the opportunity to be included in subsequent decision-making processes included in the adaptive management plan. 28-4

Cumulative impacts are mentioned, but the document provides no detailed discussion. Many of the best wind resource areas overlap habitats of several prairie grouse species, most of which are decreasing in population and some of which are species of concern as possible candidates for listing under ESA. A discussion of the potential cumulative impacts of a manifold expansion of wind energy developments across prairie grouse habitat should be a significant part of the document. We also recommend that BLM define how they use the term other than just the NEPA definition, since compensatory and additive mortality are part of cumulative impacts. 28-5

We are concerned that the description about ESA consultation requirements could cause confusion. We understand that BLM is deferring ESA consultation until individual Resource Management Plans are updated. To ensure that potential wind power developers understand the potential requirements, the PEIS should make it clear additional site-specific ESA consultations could be required in some cases. Also, ESA "consultation" seems to be used synonymously with coordination efforts required pursuant to other statues and regulations. When referring to ESA consultation, the EIS should clearly articulate "pursuant to ESA Section 7" and that the applicable ESA regulations apply. This clarification will ensure that partners seeking to develop wind power understand not only the ESA requirements, but also other conservation coordination efforts that could help streamline the process. 28-6

Specific Comments

Section 2.2.3.2.2, Plan of Development Preparation, Wildlife and Other Ecological Resources – We recommend that BLM consider following procedures contained in the Service's *Interim Guidance* for evaluating potential wind energy development sites prior to selecting sites for development. The guidelines could serve as a useful starting point for evaluating sites, and the information gained by BLM, the Service, and wind energy developers could be used to further refine the guidance to enhance streamlining and conservation in the future. 28-7

Section 2.3 and 2.4, No Action and Limited Wind Alternatives – The PEIS includes brief discussions of the no action and limited wind alternatives, and focuses most attention on the MPDS alternative. We believe a more detailed description of the former two alternatives would provide decision makers with a more complete understanding of the range of alternatives. The no action alternative, for example, is the benchmark from which all other alternatives are compared. Expanding this analysis will help best serve the purpose intended by Council on Environmental Quality regulations (40 CFR 1502.14 and Question 3, Forty Most Asked NEPA Questions, 46 FR 18026). 28-8

Section 2.2.3.1, item 1 – We believe BLM should consider adding some designated critical habitats for threatened and endangered species and known major migratory flyways and high bird concentration areas to the list of areas where Rights of Way (ROW) will not be granted. In Utah, for example, at least four of the high potential wind development areas overlap areas of highest density golden eagle populations. This information could be especially helpful when individual step-down Resource Management Plans are developed. The BLM should also consider adopting mechanisms to gather information documenting the spatial and temporal use of the airspace by birds and bats, particularly where little information exists today and requests for ROW grants can be expected in the future. 28-9

Section 2.2.3.2.2, Wildlife and Other Ecological Resources, item 11 – The draft PEIS states that facilities should be designed to preclude bird nesting and perching, and power poles should be required to prevent raptor electrocutions. To minimize electrocution potential, we recommend BLM consider using *Suggested Practices for Raptor Protection on Power Lines. The State of the Art in 1996 (Edison Electric Institute/Raptor Research Foundation 1996).* 28-10

Section 2.2.3.2.2, Noise – We feel that the document would benefit by clarifying procedures for evaluating, avoiding, and minimizing potential noise related effects to wildlife. For example, it could provide information on implementation of raptor temporal and spatial buffers (e.g., blasting should not take place during breeding seasons). 28-11

Section 2.2.3.2.3, Wildlife – The draft EIS states that employees should be instructed to avoid harassment of wildlife, and that their pets should be controlled to avoid the same. To avoid this potential impact and help reduce the spread of diseases, BLM should consider prohibiting pets from worksites. 28-12

Section 2.2.4, Table 2.2.4-1, Land Use Plans Proposed For Amendment under the PEIS – The table indicates that several BLM field offices in Wyoming will undergo amendments to address wind energy development. BLM's Rawlins, Rock Springs, Kemmerer, and Casper Field Offices were not included in the table. Based on the map provided in the document (figure 2.2.1-1, lands with medium or high potential for wind energy), it appears that these offices may also provide lands with medium or high wind energy potential. We recommend that BLM clarify this in the final document. 28-13

Section 3.2, Regulatory Requirements for Wind Energy Projects – The draft PEIS lists several laws, regulations, executive orders, and policies that help to ensure environmental protection and compliance. In addition to those listed, we recommend that BLM include the Migratory Bird Treaty 28-14

Act (16 U.S.C. 703), Bald and Golden Eagle Protection Act (16 U.S.C. 668), and Executive Order 13186. 28-14 (cont.)

Section 4.6.2.2.1, Migratory Routes – This section provides a general description of the western flyways that have traditionally been used to describe waterfowl migration routes. This section does not include information that demonstrates the spatial and temporal use patterns of the airspace by birds, bats, and insects in wind resource Class 3 areas and above within the MPDS. Since many avian species migrate in broad fronts that will vary between seasons and between years, it would be helpful to expand this section to include a discussion of migratory patterns of these species. 28-15

Section 4.6.2.2.6, Regulatory Framework for Protection of Birds – We believe the PEIS would benefit from a more detailed discussion of the MBTA and its possible implications on certain wind energy development projects. In particular, we suggest that this section be expanded to make the connection between bird studies in the airspace and on the ground, wind project siting considerations, and the prohibition on unauthorized take of migratory birds. 28-16

Section 4.6.5.2, Table 4.6.5-2, Number of Listed Species – The table lists the number of endangered, threatened, and candidate species by State. Information contained in the table does not appear to be current and should be verified prior to publication of the final PEIS and subsequent development of specific projects. 28-17

Section 5.9.2.2.1, Habitat Disturbance, paragraph two – A specific discussion about known and suspected impacts of wind facilities on prairie grouse would be very helpful and a timely addition to this section. The draft PEIS states that fewer impacts would be expected for wind projects located on previously disturbed lands (e.g., mined lands). "Previously disturbed lands" as used in this section seems to indicate those lands where reclamation actions had not been completed. In any case, lands should be evaluated based on existing conditions regardless of previous disturbance. 28-18

Section 5.9.2.2.3, Injury or Mortality – A discussion about bird strikes at western wind facilities would be very helpful in this section. Collision is briefly mentioned in Section 5.9.3.2, but would benefit from a more detailed description. The Erickson *et al.* (2001) estimates of collision mortality are based on some 12 studies (mostly in the West), generally at older-style turbines. The estimate is based primarily on site monitoring, often with long periods of monitoring delay between searches (1-2 weeks is not uncommon), corrected for searcher efficiency and scavenging. While the paper provides a baseline for review, it has not yet been independently peer-reviewed for publication in a recognized scientific journal, and therefore should be qualified accordingly. 28-19

Section 5.9.3.2.3, Collisions with Turbines, Meteorological Towers, and Transmission Lines, Raptors – A discussion of raptor fatalities at Almont Pass Wind Resource Area, California, would be very helpful in this section. There is a great deal of new information available that could be useful for planning in other western locations. 28-20

Section 5.9.5.2, Mitigation During Plan of Development Preparation and Project Design – The draft PEIS states that operators should conduct surveys for Federal and State-protected species and other species of concern within the project area. We would like to coordinate with the operators and BLM to provide assistance to qualified surveyors and to ensure appropriate survey techniques are used. 28-21

Section 5.9.5.2.2, Mitigating Site/Wildlife Interactions – The draft PEIS lists several measures to reduce the use of site facilities by perching birds. These include avoiding areas of high bird use, installing anti-perch devices, eliminating guy wires, burying electrical wires, and configuring transmission lines to prevent bird contact. The Service commends BLM for addressing potential bird mortalities with these proactive measures. We further encourage you to ensure that all electrical facilities adhere to *Suggested Practices for Raptor Protection on Power Lines. The State of the Art in 1996 (Edison Electric Institute/Raptor Research Foundation)*. 28-22

Section 5.9.3.2.3, Collisions with Turbines, Avian Collisions – We have a few concerns about the data used in this section. The study completed by Erickson et al. 2001, for example, used data mortality information from studies on older-style wind turbines that are not comparable to the type of wind turbines likely to be installed over the next 20-year period. These newer turbines are taller (> 300' AGL), have larger rotor blades (70-100' m), faster rotor tip speed, and are equipped with aircraft warning lights. To remedy this issue, we believe BLM should use data from peer-reviewed studies on wind turbines that are comparable to those it expects to authorize over the next 20-year period. 28-23

On page 5-57, third paragraph, another concern is evident. The third sentence states that bird fatalities at Searsburg, Vermont were 0.0. The next sentence references the Buffalo Ridge, Minnesota project fatality rate of 4.45 birds per turbine per year. The following sentence then dismisses the Buffalo Ridge data because it was based on one field season of data collection. However, it should be noted that the Searsburg data was also based on only one field season of data collection. Additionally, unlike Buffalo Ridge, the Searsburg mortality study included only the cleared areas around the turbines; uncleared areas were not searched or otherwise included in the study. These clarifications will help people understand what we can learn from the data, and how we can begin outlining future studies to address existing shortcomings. 28-24

The data in Table 5.9.3-3 also should be qualified. The Princeton, Massachusetts project data was not peer reviewed; we would be happy to provide BLM with a copy of this study if it would be useful. In general, we believe the analysis would benefit by focusing on peer-reviewed literature. We understand that even the peer-reviewed literature may be subject to limitations (see, for example, the Preface, page iii, on the Searsburg study (NREL/SR-500-28591)), however, it represents the best available information. 28-25

In the section "Factors Potentially Contributing to Avian Collisions," page 5-61, we believe the PEIS should add a focus on two of the most important factors contributing to avian collisions. These include siting considerations and the height of the turbine and rotor above ground level. We believe the most important consideration with respect to avian collisions is the site itself, including on-the-ground and airspace physical and biological features. The Service believes that multi-year studies would provide a basis for understanding the spatial and temporal uses of the 28-26

airspace in and near the rotorswept zone by birds, bats, and their insect prey. Turbine height is an important variable because newer turbines extend farther up into the airspace, and thus into the zone that is commonly used by migratory birds and bats. 28-26 (cont.)

Page 5-72/73 (Boxed Text), Compatibility of a Wind Energy Development Project and Gallinaceous Birds – The Service's paper justifying our recommended 5-mile buffer zone might be helpful in expanding the discussion about gallinaceous birds on pages 5-72-73 (i.e., "Prairie grouse leks and wind turbines: U.S. Fish and Wildlife Service justification for a 5-mile buffer from leks; additional grassland songbird recommendations," July 30, 2004. A.M. Manville, II, Division of Migratory Bird Management, 17 pages). 28-27

Section 5.9.5.3.2, Mitigating Disturbance and Injury of Vegetation and Wildlife – The draft PEIS states that buffer zones should be established around raptor nests, bat roosts, and biota and habitats of concern. Although the Service supports the use of buffer zones, protocols may differ by State and/or land managing agency. Buffer zones may be considered disturbance-free or allow for specific temporal or spatial actions. We also recommend that buffer zones be developed in coordination with wildlife biologists who are extremely knowledgeable of the particular species for which the buffer is being considered and in coordination with the Service. 28-28

Section 5.9.5.6, Mitigation for Threatened, Endangered, and Sensitive Species – The draft PEIS states that if listed species are present in the project vicinity, informal ESA consultation would be required and subsequently formal consultation may be required. Please correct the final PEIS to state that ESA Section 7(c) requires the preparation of a biological assessment for any major construction project to determine the effects of the proposed action on listed and proposed species. If a biological assessment is not required (i.e., all other actions), the lead Federal agency is responsible for review of the proposed action to determine whether listed species will be affected. 28-29

If it is determined that the project may affect, but is not likely to adversely affect listed species, the Federal agency should request the Service to review the proposed project and biological assessment and concur with the determination. If it is determined that the project may affect, and is likely to adversely affect any listed species, formal consultation should be initiated with the Service. Alternatively, informal consultation can be continued so the Service can assist in modifying the project to reduce impacts to listed species to the "not likely to adversely affect" threshold.

Section 6.1.2, Environmental Impacts – The proposed Wind Energy Development Program would establish policies that would identify specific lands on which wind energy development would not be allowed. These specific lands are wilderness areas, national monuments, etc. We believe BLM should consider expanding this policy to include other areas where migratory birds and bats are frequently present in or near the rotorswept zone for wind turbines of the type and size that may be proposed during the next 20 years. We also suggest including a discussion on likely impacts to prairie grouse within this section. 28-30

Section 6.2, Impacts of the No Action Alternative – We believe the no action alternative would benefit from a more detailed description. According to Question 3, Forty Most Asked NEPA 28-31

Questions, 46 FR 18026, the "no action" alternative may be thought of in terms of continuing with the present course of action until that action is changed. Consequently, projected impacts of alternative management schemes would be compared in the EIS to those impacts projected for the existing plan. The DPEIS, however, does not include a projection for the existing plan over a 5-, 10-, or 20-year period. Instead, BLM has used the DOE/NREL maximum potential development scenario as the baseline from which its evaluation of no action is based. We understand that three projects have been approved on BLM lands and an additional three projects are in the active proposal stage now. This history may provide a useful baseline for extrapolation to more clearly describe the no action alternative. This revision would help provide the benchmark from which reviewers can compare the magnitude of the environmental effects of the other alternatives. 28-31 (cont.)

Appendix A, A-4, Inventory and Planning – We ask BLM to consider explaining what the agency would do if proposed wind development is not in current compliance with land use plans for protected wilderness areas, wilderness study areas, and Areas of Critical Environmental Concern (ACEC). This statement appears to runs counter to mandates protecting designated wilderness areas and ACEC's, as well as to what BLM presents in other sections of this PEIS. We ask BLM to consider emphasizing that proposed wind development should be modified to avoid protected areas or other key areas that may warrant further protection (e.g., breeding sites for grassland songbirds and leks for prairie grouse). We also recommend that BLM provide additional details on how the agency would avoid "major bird migration corridors" and "areas of critical habitat for species of concern." 28-32

The PEIS would also benefit from a discussion of how BLM will help minimize habitat disturbance. Habitat fragmentation, destruction, disturbance, and avoidance are critical environmental issues that face prairie grouse, grassland songbirds, and other species. Grazing is another key environmental issue on BLM lands, and when combined with new wind development, it could cause more mortality to birds. Cattle grazing at the Altamont Pass Wind Resource Area provides a good example of problems created for raptors by less than optimal grazing practices around wind turbines.

Appendix A, A-13, Site Testing and Monitoring Application – Impacts from meteorological towers are very briefly discussed, but no mention is made recommending use of un-guyed, self-supporting towers. Like any tall structure, the Service recommends against use of guy supports, as we have suggested in our voluntary communication tower guidance of September 2000. Since BLM wind development is being proposed for the West, the Bald and Golden Eagle Protection Act (BGEPA) should be added to the list of applicable statutes, and included where additional legislative discussions arise later in the document. BGEPA is referenced within the main text. 28-33

Appendix A, A-14, Commercial Wind Energy Development Application – Setbacks to minimize impacts to birds and bats are mentioned, but this section does not offer any specific recommendations. In general, this section would benefit from a more detailed discussion regarding the use of setbacks. In addition, the Service recommends a minimum 5-mile setback from active prairie grouse leks, and recommends that this issue be addressed within the main body of the PEIS. 28-34

Appendix A, A-15, Commercial Wind Energy Development Application – The sentence, "potential avian and bat mortality remains a concern to many individuals, however, the use of non-perch towers, new blade designs and lower rpm rotation has reduced these potential impacts," needs to be updated. While solid (as opposed to lattice) nacelle towers appear to minimize perching, comparisons at Altamont Pass between the two technologies still do not show a statistically significant difference in perching deterrence. The PEIS might indicate that the data "suggest" non-perching benefits from smooth nacelles. The Service recommends use of smooth, solid nacelles in our voluntary guidance, in major part because the industry is using this technology, and in part because perching opportunities – by the very nature of the structure – are minimized. New blade designs and lower blade rpm's do not necessarily result in less mortality for both birds and bats. Larger, slower-moving blades have much greater surface area than their older, smaller counterparts, providing much greater surface area for collisions. Blade tip speeds of larger, slower rpm rotation blades still have blade tip speeds comparable to older, faster, smaller models (i.e., ≥ 160 mph rates). Bats have been shown to collide with very slow moving blades as well as striking non-moving nacelle towers. We recommend further describing these findings in this document. 28-35

Appendix B, B.1.2, GIS Data – Since BLM uses Geographic Information Systems (GIS) overlays to show areas of high wind potential (B.1.2 GIS Data, page B-5), it would be helpful to include a GIS overlay of known and suspected prairie grouse leks (e.g., Greater and Lesser Prairie-chickens, Greater and Gunnison Sage-grouse, and Columbia Sharp-tailed Grouse) within these areas of high wind potential. An overlay of important grassland songbird breeding areas would also be very helpful. A GIS overlay of lands to be excluded from development should also be presented on page G-6 (B.1.3.1). 28-36

Appendix B, B.2, WinDS Model Analyses – Where BLM discusses the WinDS Model (pages B-7-8), we recommend that the model should also include the Service's voluntary recommendation of a minimum distance of 5 miles for wind facilities from active prairie grouse leks. Some believe that this distance could be insufficient for certain species. As summarized by leading grouse expert Dr. Jack A. Connelly (J. Connelly, Wildlife Research Biologist, ID Dept. Fish and Game 2004 personal communication) at the November 3, 2004 public wind research meeting sponsored by the National Wind Coordinating Committee, "the Service's [5-mile] recommendation is reasonable but likely not sufficient for species like Greater and Gunnison's Sage-grouse." We look forward to working with BLM and project applicants to outline appropriate parameters in specific locations. 28-37

Appendix B, B.2.2.4, Variables – We recommend including additional costs with section B.2.2.4 variables, pages B-13/14. These include the costs of maintaining a 5-mile distance from wind facilities and active leks, and the costs of placing facilities closer than 5 miles. 28-38

Miscellaneous Comments

Section 2.2.3.2.2, Wildlife and other Ecological Resources – "Feasible" should be clearly defined in the Glossary as "capable of being brought about." 28-39

Section 2.2.3.2.2, Wildlife and Other Ecological Resources, item 3 – The draft PEIS states that the operators should design projects that minimize or mitigate impacts to sensitive and unique habitats. Pursuant to Council on Environmental Quality regulations, we recommend BLM emphasize that operators should design projects that avoid impacts to sensitive habitats (40 CFR §1508.20(a)) when possible, and are committed to helping meet this objective through early consultation. 28-40

Section 2.2.3.2.2, Human Health and Safety, item 7 – We recommend that the language on Federal Aviation Administration compliance also address Service guidance on tower lighting. 28-41

Section 3.1.1, Site Monitoring and Testing Activities – We recommend the addition of the following sentence to the end of paragraph 1: "Data on wildlife populations and potential impacts are typically not collected at this time." 28-42

Appendix B, B.2.4, WinDS Model Application for Wind Energy Development PEIS – In section B.2.4, page B-16, production tax credits (PTC) are discussed. It would be helpful to review a scenario where wind energy is developed on BLM land without a PTC, comparing energy costs to other sources such as coal, diesel, nuclear, and hydroelectric. This would help put energy costs into perspective. 28-43

Responses for Document 00028

00028-001: As required by the Wind Energy Development Program proposed policies and BMPs, species-specific analyses will be conducted for any wind energy project proposed for BLM-administered lands. The scope and approach for the species-specific analyses will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. In addition, the program policies require that the BLM consult with the U.S. Fish and Wildlife Service as required by Section 7 of the Endangered Species Act of 1973. The specific consultation requirements will be determined on a project-by-project basis. Through this process, the BLM will develop project-specific stipulations for incorporation into the POD.

00028-002: As stated in Chapter 1, the National Energy Policy recommends that the Department of the Interior work with other federal agencies to increase renewable energy production on public lands. The existence of wind energy development on BLM-administered lands and the level of new wind-energy-related ROW applications placed a programmatic emphasis on wind energy. The benefits of wind energy development are discussed in part in Section 6.4.2, Impacts of Wind Energy Development versus Other Sources of Energy. The environmental "costs" of wind energy are discussed thoroughly in Chapter 5, Potential Impacts of Wind Energy Development and Analysis of Mitigation Measures.

00028-003: The evaluation of wind energy development sites is a long-running process that involves interactions between industry and the BLM regarding the suitability of possible sites prior to submittal of a ROW application for development. These interactions often serve to screen out sites that are unsuitable for development for a variety of reasons. As required by the Wind Energy Development Program proposed policies and BMPs, site-specific analyses will be conducted for any proposed project on BLM-administered lands. The scope and approach for site-specific analyses will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Through this process, the BLM will develop project-specific stipulations for incorporation into the POD. Site-specific analyses are beyond the scope of the PEIS.

00028-004: The measures recommended in this comment are incorporated into the proposed BMPs presented in Section 2.2.3.2.2, Plan of Development Preparation. Included among the BMPs is the requirement to conduct environmental monitoring throughout the life of the wind project. Such monitoring shall incorporate adaptive management strategies, identify measurable metrics against which to measure success, and include mechanisms for incorporating mitigative actions into standard operating practices.

00028-005: Section 2.2.3.1, Proposed Policies, has been revised to include a new policy stating that site-specific analyses will identify and assess any cumulative impacts that are beyond the scope of the cumulative impacts addressed in the PEIS (see 10th bullet). The proposed policies already include a policy stating that existing BLM guidance on the management of sage-grouse and sage-grouse habitat will be incorporated into local, site-specific analyses (see 14th bullet). Section 6.4.1.10 acknowledges that cumulative effects may occur for specific species; however, species-specific analyses are beyond the scope of the PEIS. The definition for cumulative effects established by the CEQ regulations (see Section 6.4) was used in this PEIS analysis.

00028-006: The Wind Energy Development Program proposed policies (see Section 2.2.3.1) have been revised to include a policy stating that the BLM will consult with the USFWS as required by Section 7 of the Endangered Species Act of 1973. The specific details of the consultation process required will be determined on a project-by-project basis.

00028-007: The USFWS interim guidelines, as well as guidelines and recommendations from other agencies and organizations, were reviewed in the development of the BLM Wind Energy Development Program proposed policies and BMPs. The BLM and USFWS share a common objective in terms of minimizing potential impacts to wildlife from wind energy development activities. Many of the USFWS voluntary guidance recommendations are imbedded within the BLM's proposed policies and BMPs, reflecting consistent objectives and parallel approaches. However, because the USFWS guidance is interim and voluntary, it is inappropriate to adopt it wholly in the PEIS or the proposed Wind Energy Development Program.

00028-008: The PEIS meets the requirements of the CEQ regulations for analysis of alternatives by evaluating a set of alternatives that present a range of options. The BLM believes that the no action and limited wind energy development alternatives are adequately described and assessed in order to support the decisions regarding the management approach to be adopted for wind energy development on BLM-administered lands.

00028-009: Proposed BMPs presented under the Wildlife and Other Ecological Resources heading in Section 2.2.3.2.2, Plan of Development Preparation, incorporate requirements that will minimize or mitigate impacts to wildlife and its critical habitat. Exclusions of any additional areas from wind energy development will be determined at the project level as part of the site-specific analyses or through local land use planning efforts, with opportunities for full public involvement.

Site-specific monitoring programs will be established to evaluate environmental conditions at a site through all phases of development. The monitoring of the use of airspace by birds and bats may be one element of a site-specific monitoring program. Data collected through site-specific monitoring programs

will be used to evaluate the programmatic policies and BMPs and revise them, if appropriate.

00028-010: The suggested reference has been added to Section 5.9.5.2.2.

00028-011: The proposed BMPs under the Wildlife and Other Ecological Resources heading in Section 2.2.3.2.2, Plan of Development Preparation, require that projects be designed to minimize potential impacts to wildlife and their habitat. Potential noise impacts during construction would be addressed in the design process. Section 5.9.2.2.6 discusses potential noise impacts to wildlife during construction. Noise mitigation for wildlife, including scheduling of blasting, is discussed in the mitigation section (Section 5.9.5.3.2). Site-specific analyses will be conducted in conjunction with input from other federal, state, and local agencies, and interested stakeholders. The development of appropriate buffer zones for wildlife will be evaluated in this process.

00028-012: The text has been revised in response to your comment to prohibit pets on site during the construction phase.

00028-013: The RMPs for the Rawlins, Kemmerer, and Casper Field Offices are scheduled to be revised in the near future, and wind energy development will be addressed during those revisions. The RMP for the Rock Springs Field Office, the Green River RMP, is included in Table 2.2.4-1 for amendment as part of this PEIS.

00028-014: Section 3.2 does not provide a complete listing of all the applicable laws, regulations, policies, and Executive Orders. That listing is provided in Appendix E. The Migratory Bird Treaty Act (16 USC. 703), Bald and Golden Eagle Protection Act (16 USC. 668), and Executive Order 13186 are listed in Table E-8, Wildlife.

00028-015: Section 4.6.2.2.1 provides an overview of the migratory activities of birds in the western states. To provide more detailed discussion of the migratory patterns of individual species is beyond the scope of the PEIS. As specified in the document (Section 2.2.3), the Wind Energy Development Program proposed policies and BMPs require species-specific analyses to be conducted for any proposed project on BLM-administered lands. These analyses include the site-specific evaluation of bird use of the project area, which includes migratory use of the project area. Operators are further required to use this information in designing the project to minimize impacts to birds and bats. The scope and approach for species-specific analyses will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Through this process, the BLM will develop project-specific stipulations for incorporation into the POD. Species-specific analyses are beyond the scope of the PEIS.

00028-016: Section 4.6.2.2.6 identifies the MBTA as a component of the regulatory framework that any wind energy project proposed for BLM-administered lands would fall under. In addition, the BLM Wind Energy Development Program requires that all wind energy project ROW applications, whether for site testing and monitoring or for commercial development, be subjected to environmental review in accordance with the requirements of NEPA, and that such development be in compliance with the requirements of the ESA, Migratory Bird Treaty Act of 1918 (MBTA), National Historic Preservation Act of 1996 (NHPA), and other appropriate laws (see Section 3.2). As required by the Wind Energy Development Program proposed policies and BMPs, species-specific analyses during all phases of a wind energy project will be conducted for any proposed project on BLM- administered lands. The scope and approach for species-specific analyses will be determined on a project-by- project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Through this process, the BLM will develop project-specific stipulations that will incorporate MBTA objectives into the POD. Because MBTA issues will be addressed in detail at the project level and on a site-by-site basis, the inclusion of additional details is beyond the scope of the PEIS.

00028-017: The information provided in the table was current at the time it was obtained and incorporated into the document. While the information has been updated by the USFWS since that time, it will likely undergo additional revision between the time the table is updated and the final EIS is issued. The table has been reviewed and found to be correct for the date the information was obtained. In addition, a policy statement has been added to the Wind Energy Development Program that states that the BLM will consult with the USFWS as required by Section 7 of the Endangered Species Act of 1973. The specific consultation requirements will be determined on a project-by-project basis. Through this process, project-specific species lists will be developed and evaluated.

00028-018: A more detailed discussion entitled "Compatibility of a Wind Energy Development Project and Gallinaceous Birds" is presented later in the document (after Section 5.9.3.2.6) that provides a specific discussion regarding gallinaceous birds and wind energy development.

The text has been revised to state that "fewer impacts would be expected, in general, for ...projects located on previously disturbed lands." This text has been further revised to specify previously disturbed lands that have not undergone adequate restoration/reclamation.

It is important to note that, as required by the Wind Energy Development Program proposed policies and BMPs, species- and site-specific analyses will be conducted for any proposed project on BLM-administered lands. The scope and approach of these analyses, which will include the identification of important habitats and sensitive species, will be determined on a

project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Through this process, the BLM will develop project- specific stipulations for incorporation into the POD. Regarding sage-grouse species, existing BLM guidance on the management of sage-grouse and sage-grouse habitat will be incorporated into local, site-specific analyses.

00028-019: The document presents approximately eight pages of discussion regarding bird strikes with wind energy facilities and includes relatively detailed discussions of raptor collisions with such facilities. The information presented focuses on the western states and used the best information that was available at the time the Draft PEIS was written. Table 5.9.3.2.3 presents the number of bird species, by order, that have been reported as fatalities at western wind energy sites. The text has been revised to indicate that the results from individual sites are not directly comparable because of differences in study design and sampling methods. Even so, the results do provide a baseline for review as stated in the comment. Much of the available information on bird strikes comes from the "grey" literature, namely government and private sector reports and publications and not from the open peer-reviewed scientific information.

00028-020: The Altamont Pass facility is discussed in this section, and a text box that discusses in detail raptor collisions at the Altamont facility is provided toward the end of this section. No text change has been made to the document in response to your comment.

00028-021: As required by the Wind Energy Development Program proposed policies and BMPs, site-specific analyses, including the development of an appropriate monitoring program, will be conducted for any proposed project on BLM-administered lands. The scope and approach for site-specific analyses will be determined on a project-by- project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. This process will include the identification and implementation of appropriate survey techniques, and it is anticipated that the USFWS will participate in the process.

00028-022: The text has been revised and now references the 1996 report.

00028-023: Additional sources cited in this section include reports dated later than 2001 (e.g., Kerns and Kerlinger 2004) and that include newer facilities (and newer turbine designs) such as the Mountaineer facility in West Virginia. Peer-reviewed information was used in this PEIS (e.g., Osborne et al. 2000). However, most of the available information documenting bird strikes at wind facilities occurs in "grey" literature sources, namely governmental or private sector reports and not the peer-reviewed scientific literature.

The data presented provide a clear indication that bird strikes are an issue at wind energy facilities that result in significant impacts if facilities are inappropriately designed and sited. As required by the Wind Energy

Development Program proposed policies and BMPs, site-specific analyses will be conducted for any proposed project on BLM-administered lands. These analyses will focus on identifying siting and design stipulations to minimize environmental impacts. The scope and approach of these site-specific analyses will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Through this process, the BLM will develop project-specific siting, design, and operation stipulations for incorporation into the POD. No text change has been made to the document in response to your comment.

00028-024: The text does not dismiss the Buffalo Ridge data. The text points out that even though the data were only for one field season, they recorded the highest single-day bird fatality for any wind energy facility to date. Text has been added to point out that the mortality estimates are based on survey methods that may or may not be equivalent between individual facilities, and may not accurately estimate actual mortality levels.

00028-025: The references cited for Table 5.9.3-3 include one publication from the peer-reviewed scientific literature (Osborne et al. 2000). The remaining citations represent grey literature reports, some of which were prepared and submitted to state agencies for technical review and acceptance. Grey literature reports include federal and state publications, as well as publications of private sector organizations. Unfortunately, most of the available information to date documenting bird strikes comes from the grey literature. The NREL report cited in the comment is an example of a grey literature report.

00028-026: The text identifies both turbine height and turbine siting as important factors that may affect bird collision rates. The Wind Energy Development Program proposed policies and BMPs identify the requirement to conduct predesign surveys of important habitats and bird and bat use and activity patterns for areas associated with any wind energy project proposed for BLM-administered lands. In addition, the policies and BMPs require the development of monitoring programs to track wildlife interactions, including bird and bat mortalities, for all phases of a wind energy project, including throughout the lifetime of the facility (Section 2.2.3.2.2). The monitoring programs will be required to incorporate adaptive management strategies to ensure that potential adverse impacts of wind energy development are mitigated to the fullest extent possible.

As required by the Wind Energy Development Program proposed policies and BMPs, site-specific studies, including the development of an appropriate monitoring program, will be conducted for any proposed project on BLM-administered lands. The scope and approach for site-specific studies and monitoring programs will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies and, interested stakeholders. Through this process, the BLM will develop project-specific monitoring stipulations for incorporation into the POD.

00028-027: The identification of specific exclusion zones or areas from wind energy development will be determined at the project level as part of site-specific analyses or through local land use planning efforts, with opportunities for full public involvement. As required by the Wind Energy Development Program proposed policies and BMPs, site- specific analyses, including the identification of exclusion zones, will be conducted for any proposed wind energy project on BLM-administered lands. The scope and approach of any site-specific analyses that would lead to the identification of an exclusion zone will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. In addition, existing BLM guidance on the management of sage-grouse and sage-grouse habitat will be incorporated into local, site-specific analyses and project-specific stipulations. Through this process, the BLM will develop project-specific siting stipulations for incorporation into the POD. The identification of specific exclusion areas or zones is beyond the scope of the PEIS.

00028-028: The identification of specific buffer zones will be developed, if necessary, as project-specific stipulations as part of the site-specific analyses. As required by the Wind Energy Development Program proposed policies and BMPs, site-specific analyses, including the development of specific buffer areas, will be conducted for any proposed project on BLM-administered lands. The need for and specifications of any buffer zones will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. The specification of buffer zone dimensions is beyond the scope of the PEIS.

00028-029: The text has been changed in Section 5.9.5.6. In addition, a new policy bullet has been added at Section 2.2.3.1 specifying that Section 7 consultations will be conducted. The specific consultation requirements will be determined on a project-by-project basis.

00028-030: Proposed BMPs presented under the Wildlife and Other Ecological Resources heading in Section 2.2.3.2.2, Plan of Development Preparation, incorporate requirements that will minimize or mitigate impacts to wildlife, including sage-grouse and migratory birds and bats. Exclusions of any additional areas from wind energy development, as well as the need for and development of any species-specific surveys (to specifically identify habitats and area use levels) and monitoring studies, will be determined on a site-specific, project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Regarding sage-grouse species, existing BLM guidance on the management of sage-grouse and sage-grouse habitat will be incorporated into local, site-specific analyses. Through this process, the BLM will develop project-specific stipulations for incorporation into the POD. Site-specific analyses are beyond the scope of the PEIS.

00028-031: The PEIS meets the requirements of the CEQ regulations for analysis of alternatives by evaluating a set of alternatives that presents a range of options. The BLM believes that the no action and limited wind energy development alternatives are adequately described and assessed in order to support the decisions regarding the management approach to be adopted for wind energy development on BLM-administered lands.

00028-032: The Interim Wind Energy Policy was provided in Appendix A for reference purposes only and is not the subject of review and comment. Currently, the BLM is complying with all regulatory requirements for the administration of NLCS areas and ACECs. The BLM will issue a new Instruction Memorandum on wind energy development following issuance of the ROD implementing the management program that is selected following completion of the PEIS. At a minimum, whether the proposed action is selected or not, the BLM will need to ensure that wind energy development on BLM-administered lands is conducted in accordance with existing land use plans and in a manner that will minimize or mitigate potential adverse impacts to the greatest extent possible.

00028-033: The Interim Wind Energy Policy was provided in Appendix A for reference purposes only and is not the subject of review and comment. The BLM will issue a new Instruction Memorandum on wind energy development following issuance of the ROD implementing the management program that is selected following completion of the PEIS.

00028-034: The Interim Wind Energy Policy was provided in Appendix A for reference purposes only and is not the subject of review and comment. The BLM will issue a new Instruction Memorandum on wind energy development following issuance of the ROD implementing the management program that is selected following completion of the PEIS. Regarding sage-grouse species, existing BLM guidance on the management of sage grouse and sage- grouse habitat will be incorporated into local, site-specific analyses.

00028-035: The Interim Wind Energy Policy was provided in Appendix A for reference purposes only and is not the subject of review and comment. The BLM will issue a new Instruction Memorandum on wind energy development following issuance of the ROD implementing the management program that is selected following completion of the PEIS.

00028-036: As required by the Wind Energy Development Program proposed policies and BMPs, species-specific analyses will be conducted for any proposed project on BLM-administered lands. The scope and approach for species- specific analyses will be determined on a project-by-project basis in conjunction with input from other federal, state, and local agencies, and interested stakeholders. Incorporation of GIS data reflecting prairie grouse and grassland songbird habitat and breeding areas would be appropriate at the site-specific level.

A GIS overlay showing lands to be excluded from development has not been added to the document. This information is presented on the individual BLM Field Office maps in Appendix B.

00028-037: As noted in the comment, the USFWS and other federal, state, and local agencies, and interested stakeholders will have an opportunity to participate in site-specific analyses for each proposed wind energy development project on BLM-administered lands. Through this process, the BLM will develop project-specific stipulations for incorporation into the POD. Regarding sage-grouse species, existing BLM guidance on the management of sage-grouse and sage-grouse habitat will be incorporated into local, site-specific analyses.

00028-038: As noted in the comment, the USFWS and other federal, state, and local agencies and interested stakeholders will have an opportunity to participate in site-specific analyses for each proposed wind energy development project on BLM-administered lands. Through this process, the BLM will develop project-specific stipulations for incorporation into the POD.

00028-039: The term "feasible" has been removed from the BMPs in this section because of its subjective nature.

00028-040: The language in the BMPs related to wildlife and other ecological resources has been changed, where appropriate, to include the text "avoid (if possible), minimize, or mitigate."

00028-041: The proposed BMPs require that lighting will comply with FAA requirements (see the Health and Safety heading under Section 2.2.3.2.2, Plan of Development Preparation). Additional lighting mitigation measures may be incorporated at a specific site and would be evaluated during the site-specific analyses, with input from other federal, state, and local agencies, and interested stakeholders.

00028-042: Section 3 was intended to provide an overview of the development and operation of a typical wind farm from engineering and logistical perspectives, providing a basis from which to understand potential impacts to the environment. Ancillary, but nevertheless important activities, such as environmental assessment or monitoring, are discussed in other portions of the document, especially Chapter 5. BMPs presented in Chapter 2 address the collection of data on wildlife populations and impacts through baseline surveys as well as through monitoring throughout the wind project's life.

00028-043: Because the PTC has been renewed and because it has a long history of being renewed, it appropriately describes the reasonably foreseeable future. Evaluations of wind energy development in the absence of a PTC are inappropriate for the projection of the reasonably foreseeable development scenario. The BLM may also require financial bonds for site monitoring and testing authorizations.