Nebraska Wind Energy Task Force

January 25, 2001

Dear Governor Johanns:

In your remarks to the Nebraska Wind Energy Forum in September, you asked the participants to address several questions regarding the potential for development of Nebraska's wind resources. Following that meeting, a number of attendees and others have worked together over the past several months to find answers to those thoughtful questions.

We want to commend you for your questions. By focusing attention on these wind resource development issues, the group was able to forge a framework for discussion of key issues. We hope this work will provide a critical context for future policy discussion and development.

These issues are complex and unanimity was not always possible, but every effort has been made under rigid time constraints to achieve a consensus with which we could all live.

The findings and recommendations contained in the report only represent the thoughts of those listed on this page. This is a diverse and expansive state with many different views on if, how and when wind resources should be developed. We have not made any attempt to include all of those ideas.

Our primary recommendation is to establish a broadly based steering committee to work closely with the Nebraska Power Association in devising a wind development plan for Nebraska. We believe this plan should reflect and balance the desires and needs of all stakeholders in Nebraska's energy future. In addition, we believe Nebraskans should be carefully polled to determine their wishes with respect to development of wind power in the state.

We hope you — and others if you choose to release this report — will find the report helpful in developing state policies to harness the state's ample wind resources. We believe wind could become the state's next growth industry — just as ethanol did before it — if the right policies are put into place.

Sincerely,
Members
Nebraska Wind Energy Task Force

Report to Governor Johanns

In his welcoming address to the Nebraska Wind Energy Forum held on September 20, 2000 in the State Capitol in Lincoln, Governor Mike Johanns raised a number of important questions about wind-power development and the steps that would need to be taken if wind power is to be encouraged in the state. In order to respond to the Governor's request, a Nebraska Wind Energy Task Force convened.

The purpose of the Wind Energy Task Force was to:

> *Develop a Nebraska Wind Energy Action Plan, delivered to the Governor before the next legislative session, that will identify opportunities and challenges, provide solutions and activities, and detail goals and strategies that will both promote and support large and small scale wind development for Nebraska.*

The Task Force members are listed in Appendix 4. The members represent a broad group of stakeholders, including public utilities, state government, farmers and ranchers, landowners, environmentalists, consumers, and private industry. Groundrules of the Task Force are in Appendix 3. The Task Force met for two full day work sessions and held numerous conference calls in the past four months.

This consensus report of the Task Force addresses the questions raised by Governor Johanns, and presents several recommendations for consideration by the Governor and others within the state of Nebraska[1].

What are the major incentives for the development of wind-generated electricity in Nebraska?

Wind power is beginning to provide important benefits in a number of states. Some of these are direct, easily measured economic benefits. Other benefits are just beginning to be recognized and are likely to become highly valued over the next several years. Principal among these benefits are the following:

- *Rural Economic Development* Wind-power development will occur where it is most economical. In Nebraska, the strongest winds tend to be located in rural areas that desperately need new sources of jobs and income. For example, in Nebraska's ten windiest counties, median income is 21 percent lower and the poverty rate is 4 percent higher, on average, than the state average (based on 1995 data). While Nebraska's population is projected to grow 14 percent between 1990 and 2010, population in the windy counties is projected to decline by 9 percent on average during the same period. This problem is particularly severe for Sheridan, Keya Paha, and Scotts Bluff counties, where the population is projected to decline by 20-25 percent. A significant commitment to developing wind power in Nebraska could counteract these trends in rural areas of Nebraska.

- *Employment* Wind-based power plants also provide local employment and related economic activity. During construction, a number of jobs are created, along with increases in local business in support of the construction crews. Over the longer term, plant operation and maintenance require employment over the full lifetime of the facility. In Lake Benton, Minnesota, construction of more than 200 megawatts of wind power employed about 150 people, and ongoing operation and maintenance employs 22 people.

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[1] No attempt has been made to prioritize items listed in this report.

Wind development can also attract high paying manufacturing jobs to produce wind turbines and related components. For example, in Nebraska, Daniels Manufacturing — a local family-owned metal fabricating business in Ainsworth — designed custom parts for Enron Wind for towers in Springview. The design was so successful that Enron signed a contract with Daniels to make these parts for 300 towers in Iowa and Minnesota.

- *Landowner Revenues* Wind power offers a new cash crop — another way to work the land productively. Wind turbines on farmland, with minimal interference to ongoing farming activities, are providing additional revenue to farmers that exceeds traditional farming revenues from the same plot of land by a factor of twenty to thirty. For example, some farmers in Iowa are receiving annual royalties of about $2,000 per turbine. These revenues derive from the sale of electricity by the developer of the wind-power plant into the regional electric power network.

- *Tax Revenues* Nebraska's public power taxing structure is unique. Public power districts pay five percent of annual gross revenue derived from retail sales that includes an amount equal to the 1957 payment of in lieu of taxes. Wind turbines would not be subject to property tax payments under this structure. Private wind development could generate tax revenues to some rural communities. However, the cost of producing electricity from privately owned facilities is likely to be higher than publicly owned facilities. Municipal systems pay in lieu of taxes, transfers to the general fund and other payments. These are comparable to taxes paid by investor-owned utilities in other states. These taxing mechanisms contribute to much needed local tax revenues. New wind development could contribute to the tax base just as conventional generation has contributed in the past.

- *Emissions-free Power* Electricity generation from the wind is clean. There are no air or water emissions during operation of wind-power plants. Federal and state air quality standards are becoming increasingly stringent. This trend is likely to accelerate in the U.S. To the extent that this occurs, the emission-free wind energy could be valued more highly than electricity from conventional sources.

  Under the *Clean Air Act*, the Environmental Protection Agency continues to assess the environmental impacts of fossil-fuel combustion. The Environmental Protection Agency's assessments have resulted in regulations to reduce the emission of sulfur and nitrogen oxides, as well as particulates and other chemical pollutants. Reductions have been monetized in the form of allowances and credits and in the increased cost of construction and operation of fossil-fired resources. Regulatory compliance has been accomplished making dispatchable fossil-fired resources more cost competitive than wind energy. There is the potential for carbon emissions to also be monetized in the form of allowances and credits. In that event, wind energy would become more attractive.

- *Export Potential* Windy states like Nebraska can offer clean, renewable, wind-generated electricity as an export product to other states with lower quality wind resources provided potential transmission constraints are not cost-prohibitive. Nebraska needs to be prepared to take advantage of export potential. As discussed below, it may be possible to export wind energy environmental attributes even without direct electrical connections through transmission lines.

- *Reduced Energy Imports* Wind energy is a local resource and does not need to be transported to the power plant by train, truck, pipeline, or any other means. Hence wind power can offset the importation of fuels from out of state and thus can reduce the outflow of funds for fuel. For example, in 1998, Nebraska spent about $113 million on imported coal (including transportation costs) to generate nearly 64 percent of the state's electricity. By broadening the mix of electricity sources, wind power can make Nebraska's economy less

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vulnerable to volatile fuel prices and fuel supply interruptions. Wind power does not depend on fuels that are subject to price fluctuations or to potential increases from new environmental regulation or taxes. However, since wind energy costs are higher than the existing resource mix in Nebraska, there could be a corresponding increase in costs to consumers. In addition, at any time wind energy is producing electricity, there is the potential to export power from fossil fired facilities that are competing in the market and have reserve capacity that is available due to the generation from wind energy, provided potential transmission constraints are not cost-prohibitive. Any margins earned by fossil fired generation sales would be returned to Nebraska to reduce energy costs

What are the major barriers to the development of wind-generated electricity in Nebraska?

Many of the impediments to wind-power growth in Nebraska stem from a lack of current information about the costs and benefits of wind, as well as natural comfort with the traditional electric-power infrastructure. Major barriers include the following:

- *Need for Information* Wind power is poised at the threshold of the electric power mainstream, with more than 15,000 megawatts installed worldwide and more than 1,000 new megawatts in the U.S. over the past year. Costs are competitive in many situations, even without considering the favorable environmental characteristics of wind-generated electricity. Progress has been made over the past decade in reducing the costs of wind-generated electricity. Yet the growing success of wind power is not widely known in the traditional electric power circles and among the public in general. In addition, although there is general agreement that the environmental attributes of wind power have value to society, generally accepted methods for quantifying this value are not yet available.

- *Natural Reluctance* The traditional public power system has provided Nebraskans with reliable low cost electricity for many years. There is a natural reluctance among some decision-makers to changing the system by adding new technology that does not yet enjoy the long-term track record of existing power technologies like nuclear, hydro and coal generation. Coal power is relatively inexpensive, at least in terms of direct costs that get reflected in today's electricity bills.

- *Cost Competitiveness* Many are concerned that new power sources like wind will raise the cost of electricity. Cost varies depending on the wind resource, size of wind turbines, scale of a project, and transmission additions. Additional variables include whether the analysis compares wind to new sources or existing generation, the value of capacity, and wind energy export potential. Increasing regulations on emissions from fossil-fired resources, increasing natural gas prices and improved wind energy technology will improve wind energy's competitiveness.

  Additionally, net environmental and health benefits of wind energy may not be fully reflected in the current cost comparisons between wind-power and conventional electricity generation due to the inability to determine their value.

- *Intermittency* Wind-power plants generate electricity only when the wind is blowing. The variability in wind energy output as well as low production during periods of summer peak demand, will continue to affect its competitiveness — especially in areas of low electrical rates.

- *Limited Transmission Capacity* Electrical transmission capacity is either stressed or nonexistent in many locations with good wind resources. Wind energy installations' impact on transmission systems must avoid transmission capacity constraints that prevent other generation resources from competing in the market. The current transmission rules were largely designed for conventional generation. It is important to ensure that intermittent resources like wind energy are treated fairly. This adds complexity and cost to the problem of getting wind-generated electricity to the marketplace. Just as roads and highways have received public investment to allow agricultural products to reach markets for the public good, customers may be influenced to consider investments in transmission to enable growth of wind energy.

- *Need for Public Policies* Wind is developing most rapidly in states with policies that facilitate the growth of renewable power technologies. For instance, in 1999, Texas passed a law requiring development of 2,000 megawatts of new renewables by 2009. Policies in place in Nebraska that encourage clean power have not resulted in significant large installations. Consequently, although Nebraska ranks very highly on the list of states with attractive wind resources, very little wind has been developed so far in the state.

- *Power Plant Ownership* There are no independent power producers in the state. In other states, most wind plants are owned by independent power producers, who sell energy to utilities. In general, the utilities have been less inclined than the independent power producers to assume the risks of plant ownership.

Who are the essential partners needed to develop wind power in Nebraska?

Many players will need to join together with intersecting objectives if wind power is to move forward in Nebraska. Principal partners include these:

- *Customers* The consumers are the owners of the generation and transmission facilities in Nebraska and are represented by popularly-elected or appointed officials. The consumers' interest in wind energy is key to development of wind power in Nebraska.

- *The Public Power Utilities* The elected boards of these entities control and oversee the electric power infrastructure in Nebraska. Wind will need to be integrated into and compatible with the existing electric power network. This can only be accomplished effectively with the cooperation of the electric power utilities and transmission owners.

- *The Wind-power Industry* Developers of wind-power plants and manufacturers of wind turbines and related equipment will need to provide the hardware for power plants and the know-how for siting and construction. They will need to see a business climate amenable to sustainable operations in the state. If the market appears sufficiently attractive, they would develop relationships with local component suppliers, and would also consider the establishment of manufacturing facilities within the state.

- *State, Local and Federal Government Officials* These individuals have the ability to influence policies, procedures, and business conditions that will have substantial impacts on wind power's prospects in the state. They will consider issues ranging from public incentives and mandates to local property taxes and land-use constraints.

- *Local Economic Development Officials and Advocates*
  As discussed earlier, wind power offers some economic development opportunities, frequently in low-income areas. These individuals may need assistance to recognize and capitalize on these opportunities, and develop them to the greatest local advantage.

- *Environmental Advocates* These individuals recognize the environmental advantages of clean power technology like wind power, and can play a key role in bringing that message to the public. Their participation can also help identify any adverse environmental impacts.

- *Landowners* These individuals will provide the property on which wind-power plants will be installed. They will need to be properly compensated for the use of their land and wind resource. They are likely to become strong advocates of wind-power development, if experience in other Midwestern states is a reliable indicator. Landowners will also need to cooperate in the expansion of electrical transmission facilities, and innovative and fair means may need to be devised to provide them with equitable compensation for transmission easements.

Should public power agencies and state government do more to foster the growth of electricity exports?

The developable wind resources in Nebraska and the potential for exporting wind power are significant. The situation is similar to that with coal in Wyoming and North Dakota, where the great majority of coal resources is exported in the form of rail-transported fossil fuel or wire-transported electricity. Wind power offers Nebraska the opportunity to greatly improve its balance of payments for energy provided potential transmission constraints do not become cost-prohibitive. Over time, coal imports and the associated cash outlays can be reduced, and, more significantly, funds can flow into the state as payments for exported wind-generated electricity.

State government and the public power agencies should explore electricity exports from wind power and consider incentives to accomplish this goal. In addition, both the utilities and the government can aid in this endeavor by influencing the newly forming regional transmission organizations in the Midwest. These organizations could facilitate the flow of wind-generated electricity from remote generation locations to distant load centers without undue charges that disadvantage remote intermittent power sources like wind.

The opportunities offered by wind power are not unique to Nebraska. Several other Great Plains states have plentiful wind resources and export potential. These states are also mobilizing to explore the wind-power opportunity, so there is likely to be competition for export markets. Consequently, Nebraska could lose a substantial portion of its export potential if it is slow in developing all aspects of wind energy. If transmission constraints can be managed and alleviated, substantial markets are likely to emerge in neighboring states like Kansas, Missouri, Colorado, Illinois, Iowa, Minnesota, and Wisconsin. Should they be undertaken, transmission upgrades in the eastern U.S. interconnection may also allow access to markets further East. A significant increase in transport to the Far West, however, is not likely in the near term.

Does an attractive market exist in other states for slightly higher-priced, clean wind energy?

In some cases, wind energy is actually competitive today. For example, wind was a successful bidder in a recent all-source solicitation in Minnesota. Wind power, coupled with a natural gas-fired combustion turbine to increase the project's accredited capacity was one of several winners chosen primarily on the basis of power costs. A number of electricity providers have recently become interested in purchasing wind power to provide a hedge against volatile natural gas prices. By reducing some of the growth in demand for natural gas, wind power can help restrain the growth in gas prices. A significant number of industrial, commercial and residential customers are affected by higher natural gas prices.

In addition, it is becoming increasingly clear that some customers, both private individuals and businesses, are willing to pay a premium for renewable energy. The resulting Green Market is continually expanding, and more than 190 electric utilities in the U.S. are now offering a wind-based product to their customers. Markets for green products can be open to both in-state and out-of-state customers.

While the Green Market represents an important opportunity for developing wind power, it is not a substitute for sound public policy. Public policies are necessary to help address the barriers and capture the public benefits of developing wind power that individual purchases of Green Power are not likely to adequately address.

Many of the benefits of an individual customer's choice to purchase Green Power accrue to everyone. Customers choosing to purchase Green Power get the same electricity and breathe the same air as their neighbors choosing to buy power from coal plants. People recognize the shared benefits of Green Power. Polls have consistently shown that, while people are willing to pay more for green power, large majorities prefer that everyone pay for the benefits as opposed to relying only on volunteers. For example, a Deliberative Poll by utilities in Texas found that 79 percent of participants favored everyone paying a small amount to support renewables, while only 17 percent favored relying only on green marketing.

Of perhaps even greater significance, markets are beginning to emerge for the environmental attributes of renewable energy, as distinct from the commodity electric power component. Under this approach, producers of wind-generated electricity can sell electricity into the local power exchange and sell "Green Credits" or "Green Tags" on an open market to any customers who want them — irrespective of where those customers reside or from whom they buy their electricity. In this way, a resident of a less windy state like Missouri can contribute to regional environmental quality by buying "Green Tags" from a Nebraska wind plant as an alternative to buying a green product from his local utility. In so doing, he will get more "green" for his money because a Nebraska wind plant will generate more wind energy per dollar invested than a Missouri wind plant.

Today, anyone in the world can buy Pure Wind certificates from a new wind plant in New York owned and operated by PG&E Energy (Internet address: www.purewind.net). Clearly this type of market, should it take hold, can become significant irrespective of state boundaries. Those who develop it first may have a significant advantage. And one very attractive feature of this market is that it does not require any upgrades in electrical transmission capacity provided the wind energy can be absorbed by the local transmission network. The environmental attributes market transaction requires only a funds transfer that can occur over the Internet, rather than an energy transfer that requires an electrical transmission line.

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Should the state's major public utilities take a leadership role in the development of wind-power resources?

If the case is made and accepted that wind-power development — because of its economic and environmental benefits — is in the public interest, the state's public utilities should take a leadership role in this development. The case for leadership is made because significant expansion of wind in the state cannot occur without the cooperation of the utility sector. Furthermore, because of the related expertise that exists within the electric power sector, the power utilities are the most natural partners for the wind-power industry in the pursuit of wind power's benefits for the state.

As noted above, the natural tendency of the utilities will be to continue as they have in the past — in other words, to avoid tampering with successful, reliable, low-cost operation. At present, there is little incentive for the utilities to take risks with wind energy due to its intermittency, low summer capacity and high capital costs. Consequently, utility involvement in wind power would be enhanced if suitable incentives could be devised.

Is wind technology sufficiently mature to allow the profitable production of electricity from Nebraska's wind energy resources?

Numerous factors indicate that wind-power technology and the markets for wind energy are becoming mature. These include the following:

- *Competitive Costs* Nationally wind energy costs can be competitive as a portion of the resource mix, even without consideration of wind's environmental attributes. Costs have fallen by 80 - 90 percent since 1980 with further reductions projected for the future as the technology continues to mature and global markets for wind power continue to grow.

  Growth in the use of natural gas has raised the cost of energy from gas-fired generation. In addition, increasing regulation of emissions has increased the cost of fossil-fueled generation. Also, there is the potential for carbon dioxide regulation to raise the cost of fossil-fueled generation.

- *Growth* Wind power has been growing worldwide at an annual rate of 25 percent or more since 1995. On a relative basis, wind is the fastest growing power technology in the world. Today's installed base is more than 15,000 megawatts.

- *Operating Experience* Wind turbines operate with equipment availabilities comparable to those of conventional power generation equipment. Today's wind turbines typically exhibit availabilities over 95 percent, meaning that these turbines are ready to operate reliably more than 95 percent of the time, whether or not the wind is blowing. This track record has been built on a worldwide experience base that exceeds one billion operating hours.

- *Warranties* Manufacturers typically warrant their turbine equipment and the turbine's energy conversion efficiency for periods of several years, with options to extend at reasonable costs.

- *Suppliers* More than a half dozen major turbine suppliers are operating worldwide. Most of these are based in Europe, and two are domestic. Several European manufacturers of turbines or major components are establishing manufacturing facilities in the U.S. They are attracted to the U.S. market, even though the U.S. has low electricity costs compared to those in Europe.

- *Developers* Numerous firms are developing wind-power plants in the U.S. Most of these are not tied to any particular turbine manufacturer, and choose turbines for particular plants through competitive bids. These firms are becoming highly skilled in locating the best wind resources, and in carrying out the many steps necessary to build a wind-power plant. These range from developing community support and obtaining needed permits to detailed engineering and construction.

Task Force Recommendations

- *Create a Wind Energy Steering Committee* by executive order charged with developing recommendations for wind energy policies, addressing wind energy issues as they arise for the state, and providing public input and consultation to the Nebraska Power Association in the development of a Wind Development Business Plan.

- *Request that the Nebraska Power Association* develop, in conjunction with the Wind Energy Steering Committee, a Wind Development Business Plan that will strive to make Nebraska a significant leader in wind energy within five years. This Business Plan would evaluate the costs and benefits of wind development in Nebraska, and would attempt to identify preferred locations, scale, and partnership opportunities for wind projects in the state. To be most useful and timely, the Nebraska Power Association should present the Business Plan to Nebraska Power Association members, the Governor, the Legislature and the Nebraska Power Review Board by August 31, 2001. In addition, the Plan would:

  - *Articulate* what would be required to optimize use of wind by Nebraskans and increase the potential for export.

  - *Address* but not be limited to, financing, payback, economic benefits, and impacts.

  - *Identify* customer understanding of and interest in the development of wind energy in Nebraska,

  - *Identify* what is the best development model for Nebraska, including the potential for wind energy exports and credit trading.

- *Conduct a Deliberative Polling Process* to ascertain the level of interests in developing wind energy in Nebraska; utilize the results as a guide for the scope of wind energy development in Nebraska; seek grants to assist in the funding of the Deliberative Polling Process.

- *This Task Force recommends* the Steering Committee be limited to no more than 20 members. The Steering Committee should consist of, but not be limited to, a representative from the following organizations or sectors:

  - Rural and urban electric customers
  - Nebraska Power Association
  - Elected/appointed electric utility board member
  - Natural Resources Committee
  - Agriculture Committee
  - Department of Economic Development
  - Community Action of Nebraska
  - Sierra Club, Wildlife Federation, Save Boyd County Association, Save our Rural Resources, Nebraska Citizen Action
  - Union of Concerned Scientists
  - Farmers Union, American Corn Growers, Nebraska Corn Growers, Farm Bureau, Cattleman's Association
  - Valmont Wind Energy
  - League of Nebraska Municipalities
  - Nebraska Energy Office
  - National Renewable Energy Laboratory, Department of Energy

As part of its deliberations, the Steering Committee will review, prioritize and encourage implementation of marketing, education, and other activities that support increasing knowledge about wind development in Nebraska. A list of recommended activities is in Appendix I.

Appendix I.
Wind Energy Development Plan Recommendations

Issues for consideration when developing the Wind Development Business Plan to be completed by the NPA in consultation with the Steering Committee:

Considerations:

- Transmission needs/requirements; potential for distributed wind energy.
- Continued technology improvements in energy storage and backup generation options.
- The feasibility of obtaining volume pricing on wind turbines for the state to be installed over a longer time period.
- The value of a one-stop place to assist rural electrics and municipals in overcoming barriers such as funding gaps, siting, and technical issues associated with the provision of wind-generated electricity.

Recommended Activities for Consideration in the Business Plan:

Education-Related Activities

- Educate the entire range of stakeholders
- Conduct deliberative polling with public power and REA board members and customers as a part of marketing wind energy.
- Put on small "how-to" workshops for farmers to walk them through the process of leasing their land/wind rights and what they need to know.
- Conduct farmer/landowner coffee shop meetings around the state to educate the public about the current costs and capabilities of wind energy.
- Identify and promote opportunities to sell wind power as an export product.
- Invite Environmental Protection Agency/DOE [and/or local utilities] representatives to conduct workshops for industrial and commercial businesses on green pricing programs with the goal of greater participation in these pricing programs.
- Assemble and distribute factual teaching materials that can be used at all grade levels by science and other teachers about wind energy.
- Provide resources for a Speakers Bureau who can address children and adults on wind energy issues.
- Educate consumers about environmental benefits of wind energy vs. coal/gas/nuclear.
- Education and Political campaign via TV / Radio / Newsprint.
- Develop educational (promotional) documentation of rural economic benefits and distribute to local newsprint editors in rural communities across the state.
- Conduct public utility staff/board coffee shop meetings around the state to educate them about the current level of public support for wind energy.
- Build staff knowledge and support so people who are getting paid by the public to work on energy issues will educate the public power boards.

Communication/Marketing Strategy

- Develop and implement a coordinated communication strategy that will promote the specific task force recommendations.
- Obtain marketing and other forms of support from environmental groups.
- Develop a state slogan for promoting wind energy. Make wind energy and renewable energy a household term through a coordinated multi-year marketing campaign (similar to what has been done on littering and recycling).
- Put together wind packets that can be sent out to people who inquire about wind energy in Nebraska. Structure the materials so they can be "customized" to address specific issues individual citizens may have.
- Create utility/environmental group partnerships for marketing green pricing programs.
- Promote tourism around wind turbines and work with communities to let them know of tourism potential.

- Assist utilities in their efforts to share their renewable marketing experience.
- Develop a realistic marketing analysis.
- Develop improved marketing techniques to tie in with large customers who want renewables.
- Develop improved marketing evaluation tools.

Other Activities Discussed by the Task Force:

- Support national efforts to improve wind technology.
- Explore and develop Nebraska's potential as an international exporter of wind energy technologies and products through trade missions.
- Develop partnerships between the Nebraska Rural Electric Coops and the USDA Rural Electric Service program to make low interest loans available for development of wind energy in rural areas.

Appendix 2.
Issue Definitions

This appendix contains definitions for a number of issues discussed in the report as well as policies that other states have adopted to encourage wind energy development. The task force discussed these issues and policies, but were unable to reach consensus on some of the policies.

Deliberative Polling

A trademarked process where statistically significant samples of people are polled on an issue(s) based on their understanding of the issue(s). Objective information relative to the issue(s) is then presented to the same sample of people. After deliberation on the issues and the information presented, the same sample of people is polled again on the same issues. The results of polling before and after presentation of information and deliberation provide decision-makers with insights into the attitudes of better-informed constituents.

Renewable Portfolio Standard (RPS)

A requirement that electrical service providers include a specified amount of renewable energy in their energy supplies, with the understanding that the necessary funding is rate based. The electrical service provider, a state government or the federal government could decide this requirement. An RPS could start at some low percentage and escalate over time or remain at a set percentage. To date, ten states have adopted RPSs, and two additional states have adopted minimum renewable energy requirements similar to an RPS.

Net Metering

A policy that reduces cost to customers that generate electricity from eligible renewable energy technologies. It allows customers who produce more electricity than they are using at a given moment to feed the surplus back into the electricity system and only pay for net electricity used over an entire billing period or year. In most states, customers that produce more power than they use over a designated period usually sell the surplus power back to the electricity provider at incremental cost or avoided cost. However, most systems that qualify for net metering are sized to meet customers' electricity needs. To date, 30 states have passed laws and regulations to encourage net metering.

Disclosure

A processors whereby the electrical service provider's generation resources are described as to type of resource (nuclear, coal, gas, hydro, wind, etc.) and the associated environmental factors such as emissions, waste disposal, or other factors for each of the resources. The intent is to better inform customers of the nature of the source of the electrical energy they are purchasing.

Rate Basing Program

A program whereby the electrical energy service provider includes all resources for electrical generation in the rate base. The energy service provider would not offer specific programs for specific resources. For example, "a green offering" would not be offered for energy generated from renewable resources. Any generation from renewable resources would be included in the energy provider's mix of generation and the cost of generation would be included in the rates offered to all customers. This is similar to how the costs of conventional electricity sources have traditionally been recovered.

Local Control

The ability to influence decision makers at the local level. Nebraska is a total public power state with consumer representation elected at the local or regional level. These elected representatives set rates and policy for the public power entities.

Interstate/Intrastate Projects

Interstate Projects — Projects that involve the sale of energy across state boundaries.

Intrastate Projects — Projects from which energy is sold only within the state where it is generated.

Green Pricing

Electricity providers offer green power products to consumers who wish to voluntarily pay more for purchasing renewable energy.

Appendix 3.
Nebraska Wind Energy Task Force Groundrules

Adopted November 21, 2000

1. Purpose of Nebraska Wind Energy Task Force

Develop a Nebraska Wind Energy Action Plan, delivered to the Governor before the next legislative session, that will identify opportunities and challenges, provide solutions and activities, and detail goals and strategies that will both promote and support large and small scale wind development for Nebraska.

2. Participation

a. Interests Represented. See Appendix 4

b. Constituents' Interests. Task Force Members are expected to represent the concerns and interests of their constituents and to try to make any agreement developed by the Task Force acceptable to the organization that the Task Force Member represents, but does not bind the organization.

3. Meetings

a. Open Meetings. Meetings are open to the public.

4. Decision Making

a. Consensus. The Task Force will operate by consensus of all Task Force Members present; meaning each Member can live with a decision being considered by the Task Force. Where consensus is not reached the Action Plan will reflect the issue where consensus could not be reached and the Task Force report will reflect the concerns and perspectives expressed by all parties. Task Force members not at the final conference call or meeting will be consulted by the facilitator to see if they can agree with the consensus reached, if not provisions will be made for airing the concern to the rest of the Task Force.

b. Workgroups. Smaller Working Groups may be formed to address specific issues and to make recommendations to the Task Force. Working Groups are open to any Task Force Member or the member's designee, plus such other individuals as the Task Force believes would enhance the functioning of the Working Group(s). Working Groups are not authorized to make decisions for the Task Force as a whole.

5. Safeguards for the Parties

a. Good Faith. All parties agree to act in a good faith effort to reach agreement in all aspects of these discussions. Specific offers, positions, or statements made during the discussions may not be used by other parties for any purpose outside the discussions. It is the intent of the Task Force that other attendees of the Task Force's meetings also voluntarily comply with this provision. This is intended to support the Task Force discussions by encouraging the free and open exchange of ideas, views, and information prior to achieving consensus.

b. Right to Withdraw. Any party may withdraw from the discussions at any time without prejudice.

c. Others' Positions. No party will characterize the position of any other party in public statements or in discussions with the press, even if that party withdraws from the discussions.

Appendix 4.
List of Members

Kate Allen, Senator Preister's Office
Lash Chaffin, League of Nebraska Municipalities
Steve Clemmer, Union of Concerned Scientists
Matt Connealy, Nebraska Legislature
Lisa Daniels, Windustry
Ed DeMeo, National Wind Coordinating Committee
Chris Dibbern, Nebraska Municipal Power Pool
John Dunlop, American Wind Energy Association
Jody Gittins, Senator Schrock's Office
Sally Herrin, Nebraska Citizen Action Network
Martin Kleinschmidt, Nebraska Citizen Action Network
Pat Knapp, Nebraska Sierra Club
Patrick Langan, Department of Economic Development
Ronald Lehr, National Wind Coordinating Committee
Rick Leonard, Ag Committee Legal Council
Gerald Mallatt, City of Laurel
Steve Palomo, U.S. Department of Energy
Brian Parsons, National Renewable Energy Laboratory
Bentham Paulos, Energy Foundation
Larry Pearce, Nebraska Energy Office
Don Preister, Nebraska Legislature
Heather Rhoads, Northwest SEED
David Ried, Omaha Public Power District
Jennifer States, Community Action of Nebraska
Frank Thompson, Nebraska Public Power District
Gary Thompson, Nebraska Public Power District
Rich Walters, KBR Rural Public Power District
Jeffrey Willis, Valmont Industries, Inc.