2009 HOUSE NATURAL RESOURCES

HCR 3044

2009 HOUSE STANDING COMMITTEE MINUTES

Bill/Resolution No. 3044

House Natural Resources Committee

☐ Check here for Conference Committee

Hearing Date: 2-26-09

Recorder Job Number: 9775

Committee Clerk Signature Nancy L. Gerhardt

Minutes:

Chairman Porter – Open the hearing on HCR 3044.

Rep. Phil Mueller – Did not sign in – See **Attachment # 1**. It outlines what the resolution is about. It comes down to the basic question – Who owns the wind rights? It is a back ground document on who owns the wind rights. You have heard and considered a couple bills this session about wind energy development. It would seem we have more questions about wind energy rights than we have answers, and that is the intent of the study resolution. As you probably all heard to the development of wind energy is vitally important for our state and indeed for the nation. It became a huge economic force in our state, which has the best wind resource of any in the lower 48. I contend that that economic force would become even bigger as time moves forward. It is vitally important that this development be done the right way with regards to the rights of all the players in the business and especially landowners. That's why we need a study. Questions?

Rep. Nottestad – What is the source of this document?

Rep. Mueller – Ron Rebenitsch of Basin Electric.

Rep. Nottestad – He'll be here?

Rep. Mueller – Basin Electric is here.

Rep. Nottestad – The author of this is here? What organization is he from?

Rep. Mueller – I might make mention that Basin Electric is in the wind farm business, wind energy business, and to their credit they've brought a number of issues to the fore that are worthy issues, this being one of them.

Rep. Nottestad – Whenever I get a document that has no signature, no identification what so ever it throws up a red flag.

Curtis Jabs – Basin Electric – We do support the resolution, we think it is appropriate. Wind rights are something that needs to be dealt with very seriously. We don't want property rights invented, or wind rights invented so the study is appropriate. The document you have was written by Ron Rebenitsch. He is project manager of our wind development. At Basin Electric, we are developing a 150 MW wind farm in Minot. We have had no trouble sitting this wind farm. I know there have been problems with other wind farms, but we are very satisfied with the way this is developing. Questions?

Rep. Pinkerton – How much gross revenue does one windmill produce? What are we talking about in dollars?

Mr. Jabs – A wind farm in ND will have about 40% capacity. If you think a 1.5 MW wind farm x 24 hours in a day x 365 days x 40% x $ .04 per kilowatt hour. I could determine that, but I can't do it in my head.

Harlan Fuglesten – ND Association of REC – We too stand in support of this resolution. HB 1426 was narrowly defeated, that would have dealt with some of the issues relative to adjoining land owner rights in comparison to rights of the landowner where the land is being situated. I think as we go forward we see the PSC has a listing of a potential of 5,000 MW of wind development in ND based upon announced or proposed projects. I think we need to

have some sort of study of the relationship between the wind farms and adjoining properties. I think this is a good way to proceed.

Chairman Porter - Further testimony in support of HCR 3044? Opposition? We'll close the hearing on HCR 3044.

2009 HOUSE STANDING COMMITTEE MINUTES

Bill/Resolution No. 3044

House Natural Resources Committee

☐ Check here for Conference Committee

Hearing Date: 2-26-09

Recorder Job Number: 9776

Committee Clerk Signature Nancy L. Gerhardt

Minutes:

Chairman Porter - Continue the hearing on HCR 3044.

Rep. DeKrey – Move Do Pass.

Chairman Porter – I have a motion from Rep. DeKrey and a 2nd from Rep. Hofstad for a Do Pass and to be placed on the consent calendar. Any discussion? Seeing none all those in favor Yes-unanimous voice vote – opposed none – motion carries. Rep. DeKrey will carry that.

Date: 2-26-2009
Roll Call Vote #:

2009 HOUSE STANDING COMMITTEE ROLL CALL VOTES
BILL/RESOLUTION NO. HCR 3044

House Natural Resources Committee

☐ Check here for Conference Committee

Legislative Council Amendment Number

Action Taken ☑ Do Pass ☐ Do Not Pass ☐ As Amended

Motion Made By DeKrey Seconded By Hofstad

Representatives	Yes	No	Representatives	Yes	No
Chairman Porter	✓		Rep Hanson	✓	
Vice Chairman Damschen	✓		Rep Hunskor	✓	
Rep Clark	✓		Rep Kelsh	✓	
Rep DeKrey	✓		Rep Myxter	✓	
Rep Drovdal			Rep Pinkerton	✓	
Rep Hofstad	✓				
Rep Keiser	✓				
Rep Nottestad	✓				

Unanimous Voice Vote

Total (Yes) 12 No 0

Absent 1

Floor Assignment DeKrey

If the vote is on an amendment, briefly indicate intent:

Concent Calendar

REPORT OF STANDING COMMITTEE

HCR 3044: Natural Resources Committee (Rep. Porter, Chairman) recommends **DO PASS** and **BE PLACED ON THE CONSENT CALENDAR** (13 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). HCR 3044 was placed on the Tenth order on the calendar.

2009 SENATE NATURAL RESOURCES

HCR 3044

2009 SENATE STANDING COMMITTEE MINUTES

Bill/Resolution No. HCR3044

Senate Natural Resources Committee

☐ Check here for Conference Committee

Hearing Date: 3/20/09

Recorder Job Number: 11326

Committee Clerk Signature

Minutes: **Senator Lyson, Chairman**

Directing the Legislative Council to study the allocation of wind rights.

Representative Mueller – District 24 – Introduces the resolution – He thinks it is important for us to develop the wind energy business in our state correctly with regards to all the players in the business and especially the land owners. He gives a handout by Basin Electric and reads from page 6, conclusion paragraph.

Curtis Jabs – Basic Electric Power Cooperative – He said we need to be very careful in how we develop wind rights. They believe a study would be appropriate.

Harlan Fugelsten – ND Association of Rural Electric Cooperatives – In support of this study resolution. Going forward they are very positive about wind development in ND.

Close the hearing 3044

2009 SENATE STANDING COMMITTEE MINUTES

Bill/Resolution No. HCR3044

Senate Natural Resources Committee

☐ Check here for Conference Committee

Hearing Date: 3/20/09

Recorder Job Number: 11327

Committee Clerk Signature

Minutes: **Senator Lyson, Chairman**

Committee work

Senator Triplett moves a do pass on HCR3044

Senator Schneider seconds

Vote – 7 – 0

Senator Triplett will carry

Date: 3/20/2009

Roll Call Vote #: 3044

2009 SENATE STANDING COMMITTEE ROLL CALL VOTES

Senate Natural Resources Committee

☐ Check here for Conference Committee

Legislative Council Amendment Number _____

Action Taken ☒ Do Pass ☐ Do Not Pass ☐ Amended ☐ Amendment

Motion Made By ST Seconded By SS

Senators	Yes	No	Senators	Yes	No
Senator Stanley W. Lyson, Chairman	/		Senator Jim Pomeroy	/	
Senator David Hogue, Vice Chairman	/		Senator Mac Schneider	/	
Senator Robert S. Erbele	/		Senator Constance Triplett	/	
Senator Layton W. Freborg	/				

Total (Yes) 7 No Ø

Absent _____

Floor Assignment ST

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

HCR 3044: Natural Resources Committee (Sen. Lyson, Chairman) recommends **DO PASS** (7 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). HCR 3044 was placed on the Fourteenth order on the calendar.

2009 TESTIMONY

HCR 3044

Attachment #1

Who Owns the Wind?
An Emerging Public Policy Issue

Same given to Senate

As wind energy continues its major expansion in the US, the allocation and definition of property rights related to wind could rival the historical "water wars" of the West. Defining the legal boundaries of wind rights and how they will be allocated is emerging as a major policy issue for state legislatures and regulators.

In determining the allocation of wind rights, it is important to recognize that the land on which a turbine is located does not produce the wind, so any effort to establish a legal wind right to the surface estate needs to be considered thoroughly by all stakeholders. Currently wind project payments to landowners for wind leases are primarily for use of the surface estate, not for the wind itself. However, claims to uninterrupted flow of this natural resource could constrain development of this important resource and slow efforts to achieve national energy security.

Although wind is considered "free", the task of defining rights to the energy in those flowing air molecules is only now coming on the radar screen of risk managers (and trial attorneys). State legislatures will have to act soon to define wind rights, or inefficient litigation will provide that definition through the courts. If that happens, the legal risks of litigation over property boundary wind rights will seriously inhibit the ability of wind developers to build wind projects in many areas.

Separately, "viewshed" and noise concerns will also need to be addressed, as these issues are often used to oppose wind projects. The potential severance of wind rights from the surface estate, can also raise future hurdles for wind development as landowners are impacted by a wind installation, while others receive the benefit.

The main issue arises from the fact that the large wind turbines produce a downwind effect (wake) on the airflow as it passes the turbine blades. This downwind effect reduces the amount of energy that could be extracted by nearby downwind turbines. The original level of energy in the wind stream is not fully reconstituted until some distance downwind from the turbine. When this downwind effect crosses property boundaries, the determination of who has priority rights to the energy in that airflow becomes an issue. Thus far, it has been simply assumed that obtaining a regulatory permit and investment of significant expenditures somehow vests such rights in a wind project. However, the uncertainty of that tenuous principle invites almost certain litigation.

In addition to the reduction in available energy to nearby turbines, the downwind effect of additional turbulence in the airstream can produce additional stresses on nearby wind turbines. Where turbines have insufficient spacing, turbine manufacturers dictate operating limits to mitigate the stresses caused by the turbulence. In turn, that reduces production.

Both energy loss and turbulence diminish rapidly with distance, but as a general rule of thumb, wind developers typically try to space wind turbines apart by a distance of at least

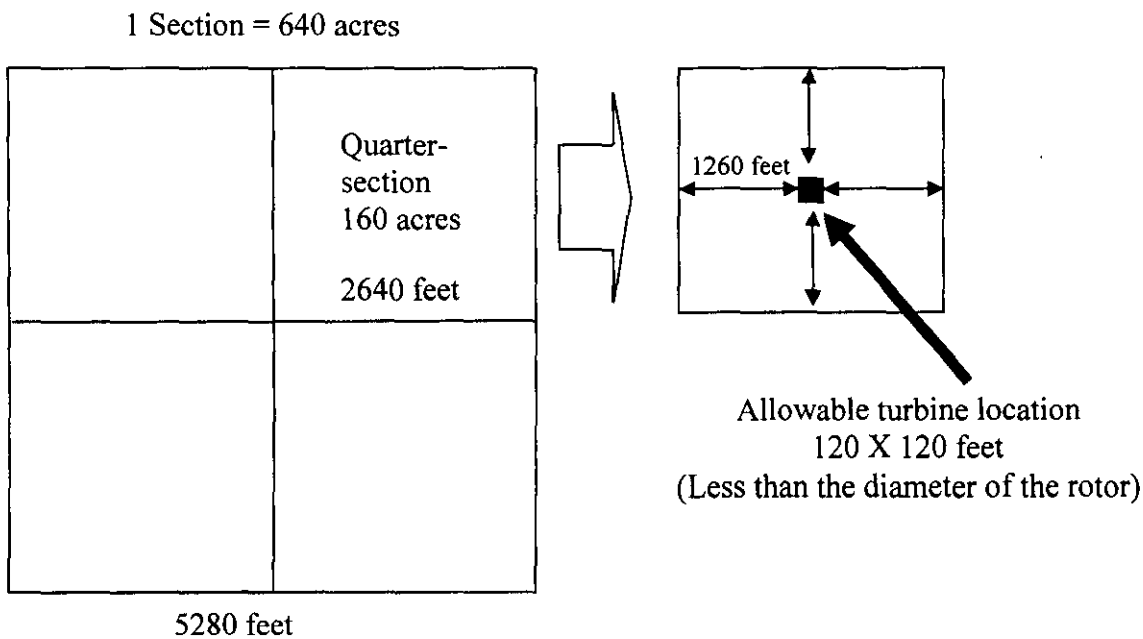
five to ten times the diameter of the turbine rotor, in the direction of the predominant winds. From an engineering and economic perspective, this downstream effect is considered to be reduced to an acceptable level at that spacing. Crosswind spacing in the non-predominant wind direction can be closer, but even then spacing should be three rotor diameters or more. For example, a common size wind turbine of 1.5 Mega-Watts can be expected to have a 70 to 77 meter rotor diameter (230 to 252 feet) or even larger. Selecting even the minimum five rotor-diameter spacing prevents the installation of any other turbine within a distance of 385 meters (1260 feet) from the turbine.

Unfortunately, this need for spacing between wind turbines does not address property boundaries. As a result, property rights to the flowing airstream and allocation of those rights to different property owners becomes a contentious issue.

In some regulatory arenas, five rotor diameter spacing has been established as a required setback distance from property lines. Such a setback requirement makes it difficult to develop wind projects in areas that do not involve extremely large landowner and contiguous holdings. This constraint is almost universal in most areas of the country since property holdings are often in quarter-sections or smaller.

The illustration below shows the constraints established with a setback of five rotor-diameters. Such a setback limits the location of a turbine to the center of a quarter-section. As can be seen from Figure 1 below, the only allowable space on a quarter-section of land would be a small square 120 feet by 120 feet. It is also very likely that such a small location could be a poor wind site or unbuildable. Essentially, such a setback requirement limits wind projects to only large landholders, with smaller landowners unable to erect even a single turbine on their property.

Figure 1: 5 Rotor-diameter Setback Requirements



Even a minimal setback, such as the "fall distance" of a turbine will sterilize major swaths of land from developing its wind resource. For instance a setback of the "fall distance" from property lines within an area is divided into quarter-sections, will sterilize over 50% of that area preventing wind development.

Since it is critical to locate turbines in the best possible location to optimize their production, wind developers need as much flexibility as possible to properly site turbines. This need to site turbines in optimal locations is driven by the physics of wind energy.

The available energy in wind is a function of the cube of the wind speed, which means that doubling the wind speed will increase the amount of available energy by 8 times (2 x 2 x 2 = 8). In practical terms, the wind speed is affected by topography, not property boundaries. Moving a turbine just a few hundred feet can cause a significant change in average annual wind speed. For example, a mere 1 mph change in the average annual wind speed can change the production of a wind turbine by 15%. Such a supposedly minor difference in wind speed can spell the difference between success and failure for a wind project.

The downwind impact of a large wind turbine also raises the issue of equity among landowners if an adjacent landowner is inhibited from economically erecting a turbine when a neighbor has already erected a large turbine. In such an instance, the existing turbine, if located near the property line can affect the economic viability of another wind turbine nearby the opposite side of the property line.

This equity issue is complicated by the importance of wind turbine placement and the adjacent property may or may not have a viable turbine location within the zone of

influence from the initial turbine. For instance, the adjacent property may contain a valley, a wetland or an even higher hill. The valley or wetland would preclude a viable turbine, while a higher hill may be an even better location.

State legislatures or Congress will need to provide some form of legal certainty to allow developers to make the large investments needed to develop our national wind resources. Just as wildlife is considered a public resource, and is regulated by the state, the use of wind also needs to be allocated with regulatory certainty. Presently neither wind nor wildlife is "owned" by property surface estate, but in the case of wind rights, there is substantial uncertainty of that principle.

For regulatory allocation of natural resources, two possible models are suggested. Each has been successfully used in similar natural resource contexts. The first model is based on the allocation of water rights, primarily in western states, where water is a scarce resource and needed to be allocated on some basis. The second model is the unitization of oil fields.

The first model, which might best be termed "First in Time; First in Right" allocates the resource based on the order in which users demonstrate beneficial use of the resource. The second model "Unitization" has been successfully used in the oil industry. In this model, an area of influence caused by the development of an oil field is determined and that area is unitized. In a unitized oil field, the resource owners in that region submit their resources to a common development and receive the benefits and output in a share proportional to the portion of the resource they submitted.

The purpose of this paper is to explore the pros and cons of each model. Either model could be successfully applied to wind development. It is not the intent of this paper to express a preference, however, a choice must be made if wind development is to progress without delays caused by litigation uncertainty.

"First in Time; First in Right"

This regulatory model approach is essentially what the title implies. In typical western water law, the first user to develop a qualified use of water (i.e., irrigation) from a flowing stream develops certain rights to divert a defined quantity of water from the stream if it is available. That diversion quantity is allocated or "adjudicated" to this user according to applicable state laws.

Later users of water from that stream can still divert water from that stream, but only in quantities that do not affect the earlier users' ability to divert the allocated quantity of water. A priority system exists where later users must recognize earlier users' rights to divert their allocated quantities of water.

This legal model could be applied in a similar fashion to wind rights. If a wind turbine is built, it would have first rights to the energy in the flowing air within a reasonable distance around the turbine. Subsequent developers would need to maintain an adequate

distance from first developer's turbines to avoid significant impacts to the earlier turbine's production. A suggested distance might be five rotor diameters in the predominant wind direction and three rotor diameters in the crosswind direction as earlier described.

The advantages of this model are simplicity and increased investor confidence that a wind project will not be subject to litigation over the wind rights from nearby landowners.

The disadvantage of this model is the perception of nearby landowners that the development of a wind project could affect their ability to develop a project on their own property.

"Unitization"

This model would somewhat mimic the concept used in oil field unitization. When an oil well is drilled, the oil flows to the well from all directions, without regard for ownership of mineral rights. Thus adjacent mineral rights holders could theoretically have their oil drain to the nearby well, without recompense. To address the rights of all owners of mineral rights, the oil field is unitized under a formal procedure. Under unitization, the production of an oil field is then allocated proportionally to the surrounding mineral rights owners, in accordance with pre-determined impact.

This concept could be applied in a similar fashion to wind rights. Conceptually, the affected areas of a wind resource could be allocated either on the basis of a defined wind project boundary containing multiple turbines, or on an individual turbine basis, with the wind resource around each turbine allocated on a proportional basis.

In the case of wind resource allocation, benefits such as wind lease payments would need to be allocated in more than one component. This is due to the fact that the property on which turbines are placed will experience more impact than nearby landowners. A potential allocation of payments among landowners might be:

- Payments for the general wind resource, allocated on a proportional share of the landowners within the affected area (either within the project boundary, or within, say five rotor diameters of each individual wind turbine).
- Payments for direct surface impacts to landowners receiving turbines.
- Payments to landowners with direct surface impacts such as roads and cable easements.
- Payments for other real or perceived impacts.

The advantages of this approach would be the distribution of benefits among a broader base of landowners, reducing potential inequities among those stakeholders. A broader distribution of benefits among the local stakeholders will also enhance community support and minimize potential opposition to a wind project.

The disadvantages of the unitization model are its complexity and the potential for unwilling landowners to be drawn into a project in which they do not wish to participate. However, this could be the case, whether or not an unwilling landowner would have a turbine placed on or near their land.

Another challenge would be determining the appropriate allocation of payments to the various stakeholders. Obviously, a landowner with a turbine would be affected more than a nearby landowner, who would experience no physical impacts whatsoever. Another complication might be the case where a landowner is also the project developer and an area-wide payment schedule for leases does not exist. Defining an adequate payment would be difficult as each party would have opposing incentives for determining payments.

Absent a regulatory formula defining payments, project developers would be challenged on many fronts to achieve a satisfactory balance among the various stakeholders.

Conclusions:

To allow a resource as important as wind energy to develop to its fullest potential, legal certainty will be required for investors to continue to commit the enormous funds involved in development of a wind project. The state must define ownership of wind resources and the boundaries and limits of that ownership.

In considering the allocation of wind rights, it may help to consider how modern technologies already affect the airspace above landowners' surface rights. For instance, aviation already uses the airspace above property surfaces, and a landowner (or a wind developer) cannot erect a structure above certain heights near an airport. Also, microwave and radio towers use the airspace above private property for radio signals without consent of the landowners. Indeed, wind developers must avoid placing turbines within existing microwave paths or where those turbines might affect other technologies, such as military radar, television or radio.

Either of the above models, as well as other models or combinations thereof, would suffice to address the allocation of the wind resource. **It is important to not infringe on landowners' property rights within the boundaries of a landowner's property. It is equally important that a landowner not be able to infringe on the rights of his/her neighbors to develop wind resources. In any case, it will be critical to preclude the ability of any landowner to veto development of a wind turbine or facility when that turbine or facility is not located on his/her property.**

As an example, a Texas court recently ruled on the issue of "viewshed", where nearby landowners filed suit claiming impacts to their views. The court essentially ruled that property rights to viewshed 'end at the property line", hopefully settling that potentially debilitating issue for wind development.

Wind is a free-flowing natural resource that crosses property boundaries and is not "owned" by anyone; nor is it "produced" on any one property. Allocation of that valuable natural resource by state or federal authority is needed soon or the industry will be inhibited by litigation, uncertainty and increased costs – all of which will divert productive investment from an industry that has great potential to enhance national energy security.