

The Navajo County Wind Ordinance

The story of a 16-month journey and an evaluation of the final product

The Navajo County Board of Supervisors approved ordinance 06-10 on October 26, 2010. It consists of the ordinance itself and two associated documents: Sound Guidelines, and Additional Materials.

This document describes the community protests that led to the creation of the ordinance, the process of creating it, and then provides the highlights of this trend-setting ordinance from the perspective of a citizen's group. The content of the ordinance is commented upon, and it is compared with other wind energy ordinances.

Finally, the events after the enactment of the ordinance are described, including the ordinance in nearby Apache County.

Keywords: wind turbine ordinance, Navajo County, Apache County, Arizona, Cedar Hills, Hay Hollow, wind farms, protests, noise, developers, environmental impact

The start of the process

In the summer of 2009, a large landowner applied for a Special Use Permit to build five very large renewable energy projects in central Navajo County, as well as one in Apache County, both in Arizona. The projects were to be a combination of wind turbines and concentrating solar thermal plants.

The project materials basically consisted of just a set of conceptual maps. The maps showed approximately 52 square miles of land to be developed, and were covered with little icons for wind turbines, solar mirror arrays and maintenance buildings. The maps also showed a setback of 100 meters (300 ft) from the property lines.

The intent of the applicant was to get pre-approved blanket permits, which he could then offer to actual developers. They would then fill in the blanks with their actual projects.

The Potter Mesa "project" in Apache County was quickly approved. The only change was that the setback increased to 500 ft after the Commission was made

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aware that the towers were taller than the proposed 300 ft setback, and they were presented with a picture of a collapsed turbine.

In Navajo County, the five projects there ran into fierce resistance, especially around the populated Hay Hollow/Cedar Hills area.

One criticism raised was the lack of reasonable notification of the community. The county was only obligated to post 8½ x 11 size notices in the areas and send out letters to landowners within 300 ft (100 m) of the project boundary. These letters were sent late, many of them arriving within three days of the hearing. Had it not been for one person who distributed a flyer and literally went door to door, this could have ended differently. Instead, the hearing was packed like never before seen in Navajo County, with people having to stand out in the hallway and several leaving again because of the crowding.

Another criticism raised was the total lack of substance to the application, that there was nothing to make a decision on. The totally inadequate setbacks were another major point of criticism, as that would allow the giant turbines to tower over people's homes and be so close that the noise would prevent people from sleeping.

The issue that proved the most potent, and drew people who lived miles away, was the large amount of water that the solar powered steam turbines would consume in their cooling towers. That is a big issue in a desert where everybody is concerned about their wells. Wells can run dry and the aquifer collapse if someone pumps too hard. The corporations causing it often try to run away from their responsibilities.

Journalists from two local newspapers attended. One paper focused on the protests, while the other didn't mention them at all.

The county asked the applicant to hold two public meetings to present his plan and answer questions from the public. These were held in the theater at the community college in Snowflake. The meetings were well attended, with about two hundred people showing up.

The applicant arrived with three bodyguards. They were not needed, though the audience was rather upset and voiced strong objections to the project. This conceptual project did not get much further. The approved Potter Mesa project in Apache county was not built either.

How an ordinance is made

An ordinance is a local law for a county, town or township. It can be used to regulate many things, such as speed limits in school zones, whether alcohol can be sold or to specify requirements for particular projects, such as wind farms.

The typical process to create an ordinance is that the Planning & Zoning Staff makes a draft which is then presented to the Planning Commission. The Planning Commission is a group of people who are appointed by the county and who regularly hold public meetings where they consider issues regarding zoning.

Their meetings are always public and anybody can attend and voice their opinion on a subject before the Commission. This typically takes the form that each person is allowed to speak uninterrupted for three to five minutes. There is usually not any dialogue, though a member of the board may initiate one. There is rarely room for any sort of negotiations. Each person generally is allowed to speak only once.

The commissioners may “table” the issue for a later hearing, while they think about it. They can make changes to the ordinance, they can reject it, or approve it. If it is approved, it is then passed on to the Board of Supervisors (called Commissioners in some states).

The Board of Supervisors are elected officials. They are the highest authority in the county or township. Their meetings are also public and run much like the P&Z Commission hearings. They may be more restrictive regarding when and if they allow the public to speak on a matter. It is important to check ahead of time if a subject before the board is considered a “hearing” or not. If it is not, people may still say something at some sort of “open microphone” part of the agenda.

The Supervisors can send an issue back to the P&Z staff or commission, make modifications, approve it or reject it. Or they can ask for more information, including public meetings.

If the Supervisors approve an ordinance, it becomes the law. There is no appeal, other than to the Board itself or through the courts.

The Board of Supervisors has some authority to vary from an ordinance when considering a proposed development. This is especially done with special cases that the ordinance does not adequately address.

The creation of the wind energy ordinance

The county realized that other developers were interested in wind energy in Navajo County, so they decided to create an ordinance so they did not have to go through a long approval process for each future project and there would be general guidelines available. This started a process that ran for a full year. Initially, the county staff intended to write the ordinance themselves, but after some months they hired an advisory firm to do it.

The Board of Supervisors held three public meetings on the ordinance. Meetings were also held for the application for the Dry Lake II wind farm, which came through the first half of 2010, and provided a forum for discussing the many aspects of these projects.

In all, about ten public meetings were held on the subject of wind energy. They were held at various settings, including one listening session with the county's hired advisor.

This was all helpful to slowly move the positions of the county officials. It was apparently a new experience for the county to be met with a well-organized and sophisticated opposition.

Three community organizations were created: ARENA, ALARM and Save Antelope Valley.

Several meetings were held between community representatives and county staff. The developers also met separately with county staff. At one point, about nine wind energy developers were interested in the area.

The stance of the county officials was to create a compromise between the interests of the developers and the residents, as long as it did not limit development (this was clear from various statements made by a number of officials). The county was also at the same time actively involved in promoting the area as an "energy corridor" to developers of wind energy, biomass, etc.

One member of the community hired an independent acoustical engineer with much experience in wind farm noise. The engineer reviewed the first draft of the ordinance, and then met for two hours with the county and its advisor.

Members of the community expended a large effort to gather books, scientific papers, surveys, sample ordinances and other materials, as well as putting together compilations of the information. This large body of material was presented to the county and its advisor.

Each Supervisor was given a copy of the book *Wind Turbine Syndrome*, written by Nina Pierpont, M.D., a physician who has seen patients affected by nearby wind turbines.

One community group got a grant to rent sophisticated sound measuring equipment to document the unusually quiet ambient sound levels in the area.

One Planning & Zoning commissioner travelled to Texas to visit a rancher who hosted a wind farm. The rancher reported that there were no problems living next to the turbines and that he appreciated the rent for hosting the turbines. The American Wind Energy Association (AWEA, an industry group) actively recruits people to host such visits, which obviously are one-sided since the rancher freely chose to have the turbines nearby, and is paid handsomely for it (typically about \$10,000 a year for each 2 MW turbine). Whether the commissioner's trip was arranged by the AWEA was not disclosed.

The Dry Lake II wind farm went through the approval process while the ordinance was being drafted. The county asked the developer to hold a public meeting. They did, but it was organized as a set of displays and informal personal conversations. It was not possible to have a public discussion so everybody present could hear the arguments. Complaints to the county resulted in a new meeting, which was done more traditionally, though the developer still tried to control what was said by restricting people to only ask questions. Of course, questions can be worded so they also make a statement.

The Dry Lake II project then went through the P&Z Commission and the Board. It was a good project, as there were no homes within two miles of any turbine. When two Supervisors spoke favorably about a two-mile setback, the wind industry got concerned about setting a precedent. They showed up in force from then on, both flying in staff from other states and hosting a full-day seminar for county officials. The two Supervisors never mentioned such setbacks again.

The county staff was very generous with their time, and met with anyone who wished to talk with them, either in person or by phone. This abruptly changed once they published the first draft of the ordinance, which was shortly after the industry-hosted seminar. The central points were far from what the public had asked for and the county was not willing to discuss it, either by phone, e-mail or in person. They set up a special e-mail address to which people could send their comments, but there was no dialogue. The staff stated they had all the information they needed, as they had already expended a lot of staff time on the issue — which was true.

The wind industry had obviously gotten what they wanted in the first draft. The key points were the setbacks and noise limits.

The county staff and officials were inundated with angry letters and e-mails. The tone of many letters was not exactly cordial. The staff was caught between the political will of their Supervisors and the public wrath, but they continued to be very polite at all times.

The staff had obviously expected their draft to sail through the hearing process, but it took two revisions and three months to actually get it passed. Large numbers of people showed up at any opportunity to voice their objections, some very emotionally and some very factually. It was very clear that the number of people showing up was very important, perhaps just as important as what they said.

The ordinance was originally intended to cover all types of industrial-scale renewable energy plants, such as solar, biomass and geothermal. Late in the process, it was clear that these non-wind technologies were poorly addressed by the draft ordinance. There had also not been any serious interest in erecting such plants, so the ordinance was modified to be for wind only.

The Planning & Zoning staff holds substantial power over the process, as they set the stage. They draft the ordinance, then the commissioners and Supervisors request changes. As much of the material is technical in nature, and possibly not comprehensible to the elected officials, whatever the staff presents is generally accepted. In practice, it was only the setbacks that were debated. Concepts such as decibels are much harder to grasp, and were never questioned, despite repeated complaints from the public.

The draft ordinance had a setback of only $\frac{1}{4}$ mile (400 m). Community activists then ran large graphical ads in the local newspaper, with a picture of giant wind turbines towering over a house. The county then increased the setback to $\frac{1}{2}$ mile (800 m) from occupied houses.

Once the setback in the draft was increased to $\frac{1}{2}$ mile (800 m) from existing homes, the staff started comparing their draft to other ordinances in their presentations. They showed a table that compared the draft to the noise limits and setbacks in 25 selected ordinances. In this setup the draft looked cutting edge, but not bleeding edge. This strategy seemed to be very convincing to the commissioners and Supervisors.

At the first Planning Commission hearing on the draft ordinance, three or four commissioners were in favor of setbacks around a mile and the staff was asked to

change the document. But the Commission did not vote on it. And the staff, disagreeing with the Commission, did not change the document, but presented it unchanged at the next Commission hearing. At that hearing, two of the supporters of the large setback were absent, and the document passed with no changes.

In retrospective, had the Commission passed a one-mile setback, it would probably have been removed by the Supervisors. Or at least reduced. The setbacks were again improved a bit by the Supervisors at their final meeting, giving empty lot owners a $\frac{1}{4}$ mile setback (a $\frac{1}{2}$ mile setback was briefly considered).

The ordinance passed unanimously. It was essentially only debated by the two Supervisors in whose districts wind farms could be erected. The supervisors from the other districts apparently simply deferred to them in their voting.

A criticism of the process is that it is the “Santa Claus model,” i.e. the public can make requests and complaints, but there is no real dialog and no negotiations. The Commissioners and Supervisors do not have to justify their actions in a meaningful way, they do not have to disclose why they chose to accept or ignore documentation provided to them.

The Special Use Permit section of the Zoning Ordinance (section 2002(3)) had since 1975 stipulated that a permit should “include its reasons for approval” and show “specific evidence and facts” that “the public health, safety and general welfare will not be adversely affected”. These stipulations had been largely forgotten. Seeing that an organized public might ask for a detailed justification, the county simply removed the clause on February 18, 2010, a few months before they started considering the wind energy ordinance.

All the meetings went peacefully, with no incidents. A few members of the public were angry and loud when they spoke, but there were never any threats made. There were four police officers present at the last two hearings, but they were never needed.

One developer privately told of one time their team had been driven out of a town by an angry mob, before they could even enter the meeting hall. They gave up on that project. This happened in an eastern state, not in Arizona.

Highlights of the ordinance

The first wind farm in Navajo County (Dry Lake I) sailed through the permit process with very little opposition, as it is located in a basically uninhabited area

of the county and nobody knew about it. It was passed by Resolution 01-06 of January 17, 2006, which is very brief.

The much more comprehensive ordinance and associated documents, which were enacted October 26, 2010, are a credit to the community effort to work with the county and feeding them a rich diet of information. Had it not been for a few major compromises, it may have become the most well thought out ordinance in the country.

The main points are:

- Aircraft warning lights must be the least intrusive allowed by the Federal Aviation Agency. White strobe lights are specifically disallowed.
- A developer must provide very comprehensive documentation up front, so the county and the public can properly evaluate the project. The materials must include:
 - detailed maps and specifications
 - noise modeling, with detailed explanations
 - pre-project background sound study
 - visual impact assessment
 - shadow flicker assessment
 - cultural / archeological study
 - environmental impact report
 - description of optional configurations (if any), and their noise impact
 - transportation plan
 - decommissioning plan
- The developer must have a contract to sell the power (power purchase agreement), which eliminates fly-by-night operators.
- The developer must make a good effort to involve the public, including:
 - Notify all landowners within one mile
 - Notify all landowners adjacent to roads that need to be widened or otherwise modified
 - Hold at least two public meetings, prior to any county hearing
 - Maintain a website with information
 - Maintain a complaint hotline

- There must be a plan to remove the turbines (decommissioning plan) when they no longer are operational, and a bond to make sure it happens without becoming a surprise burden to the landowner or the taxpayers.
- The siting of the turbines must minimize the effects on bats and birds-of-prey.
- The application fee was raised to \$10,000 from \$400, to reasonably compensate the county for developing the ordinance and the extra work involved in evaluating the detailed applications.
- The county may hire independent specialists to evaluate and verify the application materials. The developer is to bear a reasonable cost of this, and also have a say in the hiring of the consultant.
- The project is to look tidy, with buried power lines, towers painted in unobtrusive colors, no advertising or nighttime illumination.
- The developer must post bonds for repairs of any public roadway damaged during construction.
- The noise stipulations are:
 - 45 dBA at existing residences, possibly higher
 - no noise limits for residences built later
 - restrictions on low-frequency noise
 - restrictions on pure tones
 - background sound level defined as LA90
 - no experimental, prototype or downwind turbines
 - the developer must provide detailed reports of their noise models
- The setbacks are:
 - ½ mile (800 m) from existing residences
 - ¼ mile (400 m) from private property lines
 - ½ mile from small lots (2.5 acres or less), when subdivided prior to October 2010
 - 110% of turbine height from public or industrial lands
 - the setbacks may be reduced, with the consent of the neighbors

Discussion

A comprehensive and well thought out ordinance is to the benefit of both the county, the community and the developers. It provides a roadmap and guidebook, so all parties have a firm foundation to consider and debate a proposed project.

The main benefit to the developers is that they know what to expect, so they do not spend their efforts planning a project that may be rejected. It also speeds up the process, as they know ahead of time what documentation and procedures are needed. A comprehensive ordinance also discourages unprofessional developers from wasting everybody's time.

The main areas where the Navajo County wind energy ordinance really shines:

- up-front documentation
- ensuring the developer is professional
- notifying the community
- covering the county's expenses
- decommissioning plan and bond
- limiting wildlife impact (by requiring approval by Arizona Game & Fish)

The ordinance is a compilation of best practices, drawn from a large inventory of U.S. ordinances that were reviewed in the process. This ordinance may serve as a trend-setting document for other counties in the region and nationwide.

The ordinance especially shines in its detailed requirements for documentation. This forces a developer to do their planning diligently, for a properly executed project. The county and the public will have the tools they need to evaluate the project's impact on the community that will host it. Meanwhile, it is not a big burden for a professional developer. There simply is no ordinance available which does it better than this one.

The ordinance requires a proper notification of the neighbors, and the hosting of public meetings, prior to any official hearings. This is crucial, to avoid projects being sneaked by without the host community being aware of it, which is a common practice. The ordinance's stipulations of up-front public involvement is exemplary, and among the very best in the country.

It does lack in specific public involvement later on, especially in case of complaints. There should be a specific point stating that all supplied documentation must be available for public scrutiny. It is not acceptable for a developer to claim their data is proprietary and only available to the county. Anything the county uses to make their decisions should be available for public

scrutiny. The non-sharing of information was a problem in a few cases during the development of the ordinance, where the staff did not honor requests from the public to see some sources they used for disputed decisions.

The experience of this endeavor is that there may be members of the public with greater expertise and more time available than can be mustered by a poor rural county. Much material knowledge would not have been brought to bear had it not been for an actively engaged public presence.

The main problems with the ordinance are:

- Much too high noise limit
- Too short setbacks
- No protection of Petrified Forest National Park
- No hard-rock blasting restriction or bond
- No restrictions on nighttime construction noise

The noise limit of 45 dBA was most likely politically chosen to match the originally intended setback of ¼ mile (400 m). Experiences across the world show that 45 dBA is very intrusive in many rural settings, due to the character of the turbine noise, and the quiet surroundings.

Rural parts of Navajo County are particularly prone to noise nuisance, as it is very quiet compared to most places. Many people also sleep with open windows as air conditioning is not feasible in off-grid solar houses, which are common in the area.

A 45 dBA noise level would be 25 dBA above the existing level in many places in the county — a six-fold increase of the loudness. The New York State Department of Environmental Conservation (“Assessing and Mitigating Noise Impacts”, NYSDEC, Feb. 2, 2001) characterizes increases above 20 dBA as “very objectionable to intolerable”.

The cover story cited by the county staff was that the World Health Organization suggest a bedroom noise limit of 30 dBA. The wind industry said that the walls dampen 15 dBA, even with open windows, so an outside noise level of 30 +15 = 45 dBA is fine.

Unfortunately, this is not true. As an example, a drill rig was operating in the Hay Hollow area. It was measured to create a noise level of 38 dBA outside a nearby house. The inside noise level was 34 dBA, for a reduction of only 4 dBA. The noise of the drill rig was a nuisance.

The WHO recommendation does not really apply to wind turbines anyway, as the swooshing sound is impulsive in nature, which is much more annoying than more even noise. Another example of impulsive sounds is a gunshot. If the sound of a gunshot is evened out over several minutes, it would probably be well within the WHO recommendation as well.

The ordinance has a provision for allowing yet higher noise levels than the 45 dBA. The method is detailed in the “Sound Guidelines” (Resolution 57-10) document and requires specialized knowledge to understand. The provision depends on a high degree of honesty by the developer and much diligence by the county to be done ethically. It is an open door for abuse and in direct violation of the national standard ANSI §12.19.

In practice, the setback of ½ mile from existing residences provides a stronger protection than the noise limit. Setbacks are easy to verify by anyone, and do not rely on specialists who may slant their reports to accommodate the developer who pays for it (which commonly happens).

It should be rare that a house set ½ mile from the turbines would experience 45 dBA noise with today’s turbines. It may only happen if there are turbines on multiple sides of the house or during high wind shear. Future turbine designs are hopefully not much louder than today’s. The setback is the controlling factor in protecting the neighbors, while the noise limit is not very useful.

Many entities recommend a setback of a mile or so, based mostly on the actual experience of people living near wind turbines. The acoustical engineer, who was hired by the community to meet with the county, advised a 1¼ mile setback for Navajo County. This larger setback was based on the harder soil and lack of vegetation for this area, which allows sound to travel further.

The ½ mile setback achieved is better than most ordinances (though most are in areas where sound doesn’t travel as far). It will make development of wind farms in checkerboard areas less practical, when the surrounding land is privately owned. For publicly owned adjacent lands, the setbacks are so miniscule that it is a giveaway to the developers. This includes National Park lands.

The ordinance has a provision that adjacent landowners can waive the setbacks and noise limits. This means that a landowner may receive some money from the developer in return for the decreasing value of the land, and the nuisance of living next to a wind farm. This is a fair system, where some money can go to the actual community, rather than the typical large landowner who may not live in the area. And, it allows those people who prefer their peace to be allowed to keep it. Of course, this system only works with adequate setbacks.

Such a system also discourages wind farms near populated areas, as the developer then would need the consent of many landowners.

The developer of Dry Lake II got the consent of the adjacent landowners. This is not unusual, though the industry likes to say it is.

The special setback for 2½ acre lots, from before October 2010, was a special provision to appease the Antelope Valley community. It was made time-dependent to prevent landowners from subdividing if they were threatened by a developer.

The issue of blasting for foundations in hard-rock areas is that it can damage wells and the aquifer. This issue is not specific to wind farms and could be dealt with in the hearing for such particular areas.

Developers like to erect turbines at night, as the winds may quiet down, making the tall cranes better able to operate. Unfortunately, much equipment is very noisy, especially equipment that moves and has back-up warning devices. The developer should pay for a motel room or turn off their backup alarms, as a minimal courtesy to the neighbors. The county was not willing to entertain any restrictions, notifications, mitigations or compensations.

In the end, the ordinance was a compromise with no clear winners or losers. Nobody had a decisive victory.

The problems with the ordinance stem from the county's stance of not wishing to restrict or discourage professional wind developers. It is a conservative, pro-business county and the decision on the setbacks and noise limits — the true limiters on wind projects — were determined politically and did not seem to be based on the available science. Had these restrictions been a little better, this ordinance would have been top-tier in all respects. Now it is overall just better than the majority.

More stringent setbacks and noise limits might have backfired, however. The wind industry saw this effort as a trend-setter for the Southwest, and expended a considerable effort flying in their people for every meeting and even bussing in workers for one meeting. Had the ordinance been too restrictive in their view, they might have tried to challenge it in court or by getting the legislature in Phoenix to create a statewide wind farm law. These methods have been attempted elsewhere by the industry. The community groups would have more difficulty being heard in a courtroom or in the legislature in Phoenix. Both would have been less fair.

There are some possible outside benefits of the ordinance and the process. One recurring comment made was the lack of benefits to the host community, i.e. that there are very few permanent jobs created, little taxes paid to the county and few payments made to the people actually living there. The first wind farm, Dry Lake I, created only one job for a local man, who happened to be the son of the landowner. The developer apparently made an effort to hire more local people for their Dry Lake II project.

The county now seems to understand that their procedure for notifying the community is totally inadequate for certain Objectionable Uses, such as power plants, waste incinerators, landfills, shooting ranges, rodeo arenas, etc. The ordinance process gave them the new Enhanced Notification tool, though whether they choose to use it appropriately remains to be seen. It is presently only required for wind farms.

However, the county continues to generally have a poor track record on posting their agendas in a timely manner, which is to the benefit of anyone who hopes to put something past their neighbors. This may simply be due to a lack of staffing, and not by malicious intent. The county is short staffed, especially after recent layoffs due to the financial crisis.

The ordinance process also made the county aware of how annoying the white strobe-lights are on tall towers. It helped that a tall radio tower was erected across the street from the government complex, so they could see for themselves. The P&Z staff may make sure to specify red lights on future towers.

A more general comment is the observation that the county readily accepted the opinions of the developers, while applying much more skepticism towards the public. This is understandable, as the developers are professionals in their field (most of them). However, this bias went further than that. The county was presented with a large amount of material documenting the impact on people living close to wind turbines, much of it produced by physicians and university researchers. If the industry could produce an opposing view in some sort of report, even if paid for by the industry and not published in a peer-reviewed journal, the county readily accepted that. This was evident in a compilation staff provided to the commissioners, but not shared with the public.

There is a whole industry specializing in rebutting any science that threatens the interests of big business. Cigarettes, asbestos, dangerous drugs and chemicals are just a few examples. The county seemed unable to be critical of these industry-funded rebuttals and not understand that scientific discourse is normal and does not necessarily mean that the issue is of no concern. The official stance of the

county, as stated by multiple officials, is that there are no health effects from living near wind turbines, which touts the industry line.

For extensive documentation and wide-ranging examples on how various industries misuse science to delay regulations in the public interest, the book *Doubt is Their Product* by David Michaels of Washington University is highly recommended.

The county didn't seem interested in learning from other countries, which have much more extensive experience with today's giant wind turbines. It was clear that only made-in-USA documents were acceptable, and even studies produced by European universities were not of interest.

The developers provide all the documentation upon which the county makes its decision to issue a permit. That, of course, means the material will put the project in as positive a light as possible. There is potential for abuse, especially with regard to the noise studies which are technical documents that are difficult for lay people to comprehend. There have been documented cases, such as for the St. Vincent, N. Y. projects. In Navajo County, the Environmental Impact Statement for the Dry Lake projects stated there was no problem placing turbines only 500 ft from a residence, at least with regard to the noise.

A better method would be that the county hired noise specialists to do these studies, with the developer reimbursing the county. That should remove most of the conflict of interest, even though the county is very pro-business. However, that would add some administrative burden on the staff, and the county was not willing to entertain this idea.

Instead, the present compromise came to be, where the county can hire outside specialists to evaluate the material, with a reasonable cost covered by the developer. The developer retains some influence on that process, however, potentially watering down this mechanism.

The county appeared to have a bias in favor of developers, at the expense of the citizens. A speaker at the very first meeting summed that up by saying that if he "wanted to build a forty-story tower to be closer to God", he doubted that the county would allow that.

The ordinance is a political document, with the setbacks the central political issue. The setbacks were clearly chosen as a political compromise between the wishes of the developers and the needs of the people. The public outrage, the graphic ads in the local newspapers and a concern for the loss of property value is what swayed the politicians to increase the setbacks from what the industry wanted. There

didn't seem to be much concern for people's right to a quiet enjoyment of their property and undisturbed sleep.

County officials stated several times that the ordinance is a baseline. When a specific project is considered, they can apply special stipulations for various situations, in response to public objections. Whether they will do so in a meaningful way remains to be seen. There is no doubt that once a project is installed, there is essentially no recourse for ordinary citizens. It is thus imperative to get it right the first time, and better to err on the side of caution.

The following U.S. jurisdictions have wind energy ordinances that are more protective of the neighbors than the Navajo County ordinance, as of 2010:

Antis Twp, PA
Calumet Cty, IL
Hamlin, NY
Long Lake Twp, MI
Minotowoc Cty, WI
San Miguel Cty, NM
Shawamo Cty, WI
Trempealeau Cty, WI
Umatilla Cty, OR
Union Twp, WI
Washoe Cty, NV

An ordinance is listed above if the setbacks are larger or the noise limit restrictive enough to require a larger setback.

These countries have more protective national laws, as of 2010:

Australia
Denmark
France
Germany
Holland
Sweden

Disgen Marcou Mesa project

The first post-ordinance project in Navajo county is the Marcou Mesa project, north of Holbrook.

A part of the project is in an area with 40 acre lots. The developer didn't want to have to ask "small" lot owners for permission waivers, so he asked for a waiver of the ¼ mile setback requirement. Without a variance, the developer said he would not develop in the 40-acre lot areas, so none of the lot owners would benefit. They would only work with large lot owners.

The Board approved a setback of 110% of tower height. Their rationale was that there were largely no residences in the area, which was very difficult to develop as it is "badlands". This project would at least allow some landowners to profit from their land.

One Supervisor voted against, as he wanted to uphold the ordinance we have all worked so hard to put together.

Apache County wind energy ordinance

Apache County is adjacent to Navajo County, but is more rural. They sometimes look to the more sophisticated Navajo County for leadership.

Apache County enacted their own Wind Energy Generation ordinance a year after Navajo County. Termed Article 750, it is nearly a verbatim copy, but with some important editing.

The ban on white strobe lights and other visual blight was retained. So were the requirements for public meetings and proper notifications.

The requirements for up-front documentation of a project have largely been eliminated.

There are essentially no noise limits, as the "limits" are 55 dBA or *higher*.

The setbacks have been watered down. The turbines can be placed 1320 ft (425 meters) from a residence, and in practice 550 ft (178 meters) from a property line.

These changes were not a surprise, as the county leadership is extremely pro-business.

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